Motion in Language and Experience : Actual and Non-actual motion in Swedish, French and Thai

Blomberg, Johan

2014

TRAVAUX DE L'INSTITUT DE LINGUISTIQUE DE LUND 53

Motion in Language and Experience

Actual and Non-actual motion in Swedish, French and Thai

Johan Blomberg

LUNDS
UNIVERSITET

The Faculties of Humanities and Theology
Centre for Languages and Literature
ISBN 978-91-87833-01-4
ISSN 0347-2558

Printed in Sweden by Media-Tryck, Lund University
Lund 2014

For my father
(Sell it if you can)

Can I, in fact, say that I am this language I speak, into which my thought insinuates itself to the point of finding in it the system of all its own possibilities, yet which exists only in the weight of sedimentations my thought will never be capable of actualizing altogether?

Michel Foucault

Preface

The 19th century philosopher G.W.F. Hegel once remarked that a preface should not be taken seriously. He noted that the placement of the preface does not reflect the point of writing it. It is rather what is written last, but it is nevertheless placed first in a book – even *before* the book itself. The preface stages the book. But what is first to the reader is last to the author. The preface arrives afterwards, but it still comes before.

So I hope you do not take these initial words *too* seriously – or the rest of the thesis, for that matter. But, let us try to be serious. This book, as my supervisor has convinced me to call it, is about motion. It is about stuff that does not stay in one place. To get ahold of that which does not stay is quite a challenge. To think about something, to put it under scrutiny is after all to not let things move as they would otherwise. Thinking brings things at a halt, it arrests. To make motion stand still, if only for a moment, I have turned to how we experience motion. This made me realize something quite fascinating: Almost all of our experiences involve motion, but in different ways and to different degrees. We use the words and constructions for motion to speak about many other things as well. This book is about these different experiences and how we talk about them.

I have not forgotten how I came to work on motion. Way back, I wanted to write about something the philosopher Ludwig Wittgenstein said. He stated in his characteristically blunt tone that the limits of his language meant the limits of his world. There is nothing outside of language; nothing escapes its signifying play. This proposal intrigued me quite a lot. Initially planning to write my Bachelor's thesis about this, I somehow ended up working on linguistic relativity in relation to motion categorization. This is how I came to do my Ph.D. on motion, only now from a quite different perspective. Albeit in modified form, the heritage from my previous work marks its presence even here. We should not think about language as only motivated by experience, but as constraining and enabling experience according to its own principles. In this way, meaning is Janus-faced. It has a two-folded root. This is what has occupied my thinking for many years now. It is also what largely binds together the work presented in this book.

As I said, I have endeavoured to arrest motion. If you feel that I got the wrong guy, that I have been unjust, then I am entirely to blame. Even if the guilt is mine to bear,

I have had my accomplices. Without them, there would not be a thesis, sorry, book. (Almost made it through the preface.) I would like to give a big shout-out to them.

Hmm, who should go first? Let me begin with my supervisor Jordan Zlatev. I have known him since writing my Bachelor's thesis in 2006 and he has continued to be my supervisor up until now. Even in this capacity, Jordan does not supervise, in the sense that he is the master and the student is the slave, sorry, pupil. Even as an undergraduate, he met me as an equal with a voice just as important as his. He makes you believe in what you are doing, even when you are in doubt. Jordan also cares passionately about his work and about other people. He always finds the time to be there for you. Respect and commitment are Jordan's distinguishing traits. Without him, it is safe to say that I would not have pursued this career. When I've now finished my thesis, it is certain that this *book* is much, much better because of him.

Göran Sonesson has been my co-supervisor. His knowledge, expertise and keen eye have helped me a lot in making my reasoning clearer. Göran has also been a source of inspiration through his own work. The ideas and thoughts presented in this book bear his mark in many places.

Benjamin Fagard has been one of my closest collaborators in recent years. He generously provided the data from French speakers analyzed in Part II. Moreover, the analysis which I present would have been impossible without him. Benjamin assembled the data in a handy (-ish) Excel format and he was always available to help me work with the material. As if that wasn't enough, he was also the opponent at my pre-defense seminar. His remarks and comments were of great help in the final trembling moments of writing. Benjamin, merci bien pour tout!

Speaking of Benjamin, I would like to thank the members of a now finished project in which he participated, *Trajectoire*. They designed a magnificent tool for eliciting motion, which they were kind enough to let me use. Much of the data that I present in this thesis was obtained with the help of this tool.

I conducted another study as well. The material for that study was produced in collaboration with Andreas Qassim. Even though not part of the strange world called Academia, Andreas quickly grasped what I wanted to do and his pictures were swiftly made without losing any quality in the process.

When I was gathering the data, I had the fortune of being helped by some very friendly people. Soraya Osathanonda helped me recruit Thai participants, conduct the study with them and transcribe the data. On top of that, her native-speaker intuitions have been invaluable. When I spent a week or so in Paris, Laure Sarda and

Camille Colin helped me gather data from French speakers for the second study, described in Part III, which Camille was kind enough to transcribe.

With transcribed and compiled data in hand, it's a pretty good idea to analyze it. It would be a dull thesis if you had to read through 10000 descriptions in three different languages and come up with an explanation of your own. That's what I thought as well. So I asked the statistics whiz Joost van der Weijer to help me out. He is always helpful and very patient. It is hard to imagine a nicer guy than Joost.

I'm very glad that Frida Splendido found the time – even when she's finishing a thesis (or a book perhaps?) of her own – to go through *all* the French examples. And there are quite a few of them.

Thanks to Esa Itkonen, Anneli Pajunen, Duggirala Vasanta, Erica Cossentino, Felix Ahlner and Daniel Hellsing for your very insightful comments on various drafts of different thesis chapters.

Almost in perfect synchrony with my time as a Ph.D. student, the research environment *Centre for Cognitive Semiotics* (CCS) has been active at the Centre for Languages and Literature. Through CCS, I have come in contact with interesting people and attended many inspiring talks and seminars.

In writing up the book, Eva Tofveson Redz helped with the proofreading. Her speedy, but exceptionally thorough reading was most helpful. Any errors or mistakes that remain should not be put on her.

Many helped in different ways, but there would not be any data without all the nice people who chose to participate. A big thanks to all the Swedish, French and Thai participants!

I saved some of the least specific, but greatest thanks for the end. I want to thank my dear friends John Haglund, Andreas Lind and Andreas Widoff. To have such good friends makes things easier. The many discussions we have had over the years have left traces in the text and in me as well.

Finally, my dearest Frida and our lovely daughter Mirja: *Tack för att ni finns*.

Table of Contents

Part I Departure **1**
Chapter 1 What is motion? 3
1. Inner and outer motion 5
2. Lived and observed motion 7
3. Actual and non-actual motion 9
4. A roadmap for the book 11
Chapter 2 Meaning in language and experience 13
1. Linguistic meaning: motivated, conventional or both? 13
2. Holistic Spatial Semantics 22
3. The phenomenological toolbox 27
4. Methodological considerations 38

Part II Actual motion **41**
Chapter 3 Motion semantics, linguistic typology and the experience of motion 43
1. Motion typology 45
2. Two problems for motion typology 52
3. Motion in experience 60
4. The semantics of motion situations 70
Chapter 4 The expression of actual motion in Swedish, French and Thai 79
1. The Trajectoire elicitation tool 80
2. Participants and procedure 83
3. Analysis and coding 85
4. Research questions 90
5. Results 90
7. Discussion: Conflation and Distribution patterns 119
8. Conclusions 124
Chapter 5 Actual motion: resources and use 127
1. Overview 127
2. Path, Manner and rhetorical style 129
3. Frame of reference (FoR) 133
4. Resources vs. use 135
5. Continuous and discrete forms of Region-change 141

6. Summary 144

Part III Non-actual motion **147**
Chapter 6 What is non-actual motion? 149
1. Introduction 149
2. Some semantic indicators 151
3. Reinterpreting previous analyses 154
4. Discussion 170
Chapter 7 Non-actual motion in Swedish, French and Thai 173
1. Operationalizing the motivations 174
2. Methods, material and procedure 176
3. Analysis 179
4. Research questions 180
5. The semantics of non-actual motion 182
6. Discussion: Towards a taxonomy of non-actual motion 202
Chapter 8 Non-actual motion: Conventions and motivations 207
1. Hypotheses and research questions 207
2. Overview 208
3. Results 210
4. Summary 222

Part IV Arrival **225**
Chapter 9 At the end is the beginning 227
1. Conceptual issues 227
2. Theoretical issues 229
3. Empirical findings 230
4. ”To begin again…”? 232

Bibliography 235

Appendices 245
Appendix I 245
Appendix II 249

List of Figures

Figure 3-1. (Typical) conflation patterns in English and Spanish. 49
Figure 3-2. Representation of a square that moves into a circle or vice versa 56
Figure 3-3. Schematic representation of rich and schematic path 75
Figure 4-1. The four environments of *Trajectoire* 82
Figure 4-2. Snapshot of the transcribed data in ELAN. 85
Figure 4-3. A sample of the coded data 87
Figure 4-4. Visualization of *ut* and *ur* 104
Figure 5-1. The proportion of clauses with both Path and Manner expressed 131
Figure 5-2. The relative number of clauses expressing Motion with other categories 140
Figure 6-1. Objective construal 163
Figure 6-2. Subjective construal 164
Figure 7-1. Stimuli according to the parameters of Affordance and Perspective 175
Figure 7-2. The stimuli types described where *komma* ('come') were used. 185
Figure 7-3. Stimuli representing a trail of stones in water 194
Figure 7-4. Stimuli where the Figure continues beyond the perceptual field of view 199
Figure 8-1. The proportion of NAM-descriptions in Swedish, French and Tha 211
Figure 8-2. Proportion of NAM-descriptions per stimuli type and language 212
Figure 8-3. The proportion of Thai clauses with Motion-verbs 218
Figure 8-4. The proportion of NAM-responses for each individual stimulus 219
Figure 8-5. Stimuli where the figure continues beyond the perceptual field of view 220
Figure 8-6. A picture where Figure and Landmark were often reversed in descriptions 221
Figure 8-7. Stimuli of separate objects possible to unite in perception 221

List of Tables

Table 3-1. Illustration of the expression of 8 motion situation types 69
Table 3-2. The eight semantic categories of HSS with definitions 77
Table 4-1. The five parameters for classification of the clips 83
Table 4-2. The distribution of the clips according to the taxonomy of motion 83
Table 4-3. The categories and values of Holistic Spatial Semantics in the coding 87
Table 4-4. The type of Motion-verb and corresponding motion situation in Thai. 118
Table 4-5. The form classes used to express the six semantic categories 119
Table 4-6. Conflation patterns for Thai 120
Table 4-7. Conflation patterns for French 120
Table 4-8. Conflation patterns for Swedish 120
Table 5-1. Total number of tokens, lexemes and lexeme-token ratio 128
Table 5-2. Total number of descriptions and clauses and word tokens per clause 128
Table 5-3. Mean number of clauses, words per clause, word tokens and lexemes. 128
Table 5-4. Comparison of clauses with spatial information 129
Table 5-5. Mean number of clauses and mean number of clauses 130
Table 5-6. Mean number of clauses without expressions of Motion 132
Table 5-7. Percentages of clauses containing the three Frames of Reference 133
Table 5-8. The relative number of clauses for all patterns of FoR 134
Table 5-9. Mean number of utterances per speaker without FoR specified 134
Table 5-10. Mean number of clauses per speaker without FoR specified 134
Table 5-11. All Motion-conflating verb lexemes in Swedish 135
Table 5-12. All Motion-conflating verb lexemes in French 135
Table 5-13. All Motion-conflating verb lexemes in Thai. 137
Table 5-14. The ten most common Motion-verbs for all three language groups 138
Table 5-15. Tokens of motion verbs 139
Table 5-16. The proportion of elements expressing Path in French 141
Table 7-1. Description of the test pictures 177
Table 7-2. The types of NAM-sentences ordered in an implicational hierarchy. 206
Table 8-1. Summary of the predicted results according to the four hypotheses 208
Table 8-2. Number of word tokens, word types, lexemes and lexeme-token ratio 209
Table 8-3. Number of description, clauses and word tokens per clause 209
Table 8-4. Mean number of clauses, word tokens and lexemes per participant 209
Table 8-5. Percentages of descriptions with spatial information. 210

Table 8-6. Percentages of spatial descriptions for target stimuli. 210
Table 8-7. The different verbs used by the Swedish participants. 213
Table 8-8. The different verbs used by the French participants 214
Table 8-9. The different verbs used by the Thai participants. 214
Table 8-10. The most common motion verbs with gloss and semantic coding. 216
Table 8-11. The distribution of sentences with Non-actual Path 217

Abbreviations

1	First person
3	Third person
ACC	Accusative
CLF	Classifier noun
COMP	Complementizer
CONJ	Conjunction
COP	Copula
DEF	Definite
DEM	Demonstrative
DET	Determiner
F	Feminine
GEN	Genitive
INDF	Indefinite
INF	Infinitive
LOC	Locative
M	Masculine
NUM	Numeral
OBJ	Object
P	Plural
PERF	Perfective
PRN	Pronoun
PROG	Progressive aspect
PRS	Present tense
PST	Past tense
PTCP	Participle
QUANT	Quantity
REFL	Reflexive
REL	Relative
SG	Singular
TOP	Topic

Part I
Departure

Chapter 1
What is motion?

Πάντα ῥεῖ[1]

What is motion? We all recognize when something moves or when we ourselves are in motion and we know how to convey such experiences linguistically. Despite its immediate familiarity, perhaps the main point of this book is that motion is a multifaceted phenomenon in both language and experience. Just as with Augustine's remark on time: we know what motion is until we are asked to define it. Watching a leaf caught in the wind, anticipating the arrival of a friend or moving one's own body to get an object just out of reach are all experiences that involve motion. And yet, they differ substantially. In observing the leaf, its motion is the focus, or theme of consciousness. In the second case, motion is anticipated rather than perceived, while in the third case one's own motion is perceived, but typically resides outside of focal awareness. What is common to these experiences, where do they differ and how are they expressed in language?

Given universal properties of physical nature and human perception, perhaps it would be reasonable to assume that languages across the world would treat motion fairly similarly. So it has often been assumed (e.g. Miller & Johnson-Laird 1976; Landau & Jackendoff 1993). On this view, languages could be expected to encode basic spatial properties such as relational location (on/in/above) and trajectory of movement (from/to/away) with a limited set of resources that primarily express and differentiate these basic features. With respect to motion, Talmy (1991, 2000) presented a typology according to which languages fall into one of two categories: either the key element of the motion situation is expressed in the verb, as in the Spanish example (1) or the verb expresses how the object moved, leaving the locational change to be expressed in an associate to the verb, as in the Swedish sentence (2). According to this influential binary typology, languages are expected to make do with few semantic components mapped onto two different sentential constituents.

[1] *Panta Rei*, "everything flows", an aphorism attributed to the Pre-Socratic philosopher Heraclitus by Simplicus and Plato.

(1) La botella salió de la cueva.
(2) Flaskan flöt ut ur grottan.
'The bottle floated out of the cave.'

The typology thus predicts that all languages use the same semantic categories mapped to sentential constituents in one of two possible ways. Despite these intuitively reasonable and to some extent empirically valid arguments, a growing body of evidence points to less cross-linguistic homogeneity in motion and spatial semantics (e.g. Bowerman & Choi 2001; Levinson & Wilkins 2006; Berthele 2013). Typological studies have shown that a prioritized and cross-linguistically overlapping set of forms for expressing motion has been hard to uphold and that properties of pure space and motion are often conflated with functional and qualitative properties prone to vary across languages (Vandeloise 1991; Bowerman & Choi 2001). Several languages introduce distinctions uncommon or not coded for in the spatial systems of Indo-European languages (Levinson 2003; Evans 2010). The converse is also the case: what is coded in many Indo-European languages is not expressed in all languages, for instance in Jaminjung and Yucatec Maya, see Schultze-Berndt (2006) and Bohnemeyer (2010), respectively. What does this tell us about motion, linguistically and experientially? It may seem as if the concept of motion is moving away from itself.

Not only physical motion is on the move. It is common across languages to use motion expressions to describe non-physical forms of change such as time (3), emotions (4) and static configurations where there is no apparent change (5).

(3) Time flies.
(4) My heart jumped with joy.
(5) The road goes through the tunnel.

What is the relation between the experience of physical motion and its linguistic representation in the languages of the world? How and why are verbs that express motion used to express non-physical forms of change? In contemporary cognitive semantics, conventionalized but non-literal expressions such as those used in (3)-(5) have occupied a central role. It has been suggested that they reflect the dynamic and embodied character of experience where actual motion, as the prototypical form of dynamism, stands in for other domains of experience (Lakoff 1987; Langacker 1990; Talmy 2000; Matlock 2004b). Of the three sentences given above, (5) stands out in one particular way. In contrast to (3) and (4) it does not describe an experience of anything in motion; rather, a static configuration in space is described with a motion-expressing verb. What are the motivations for expressing stasis in terms of motion and are other languages as prolific as English in this regard?

Questions such as these will be our concern. To address them, let us begin by introducing three different conceptual distinctions in the domain of motion, each one

of which will play a role in the analysis of motion developed in this book. These distinctions are motion as inner and outer, motion as lived and observed and finally motion as actual and non-actual.

1. Inner and outer motion

On the Western coast of Anatolia lay the city of Miletus. By the 6th century BC, it was a sprawling center in the Greek empire. As a testament to its splendor, it is often considered that philosophy – critical and systematic enquiry – began in Miletus. Thales was one of the seven sages and chronologically the first of Miletus' philosophers, at least from a Western perspective: *the* first philosopher. He made an early scientific observation: lodestones attract iron and dry, light materials are drawn to rubbed amber. Today, we would see these phenomena as magnetism and static electricity, respectively. To Thales, however, these were not differentiated phenomena, but rather quite similar. The similarity between the two observations was the seemingly latent predisposition of both materials to move and to cause the movement of other objects. Thales proposed that lodestone and amber have this ability because they have a mind; they are, in a sense, alive. The true mark of possessing a mind belongs to the capacity for motility and making other entities move. Only that which has a mind can influence the world; only that which has a will can set the world in motion. Motion for Thales was therefore intimately bound up with inner principles of life and mind.

In the history of ideas, the doctrine of Thales is named *hylozoism*: the point of view that all matter is alive. For us today – to us "latecomers", as the influential 20th century German philosopher Martin Heidegger would say – this is perhaps a delusion testifying to the primitive day and age of Thales. To say, and mean in a literal sense, that a piece of paper caught in the wind is "alive" or that the wind "wants" to move the paper sounds outrageous. As we tend to think of it today, there is no "ubiquity of animation", no immediate connection between mind, volition and animation, on the one hand, and movement, motion and cause on the other (Seager and Allen-Hermanson 2013). In opposition to classical thought, most clearly expressed by Aristotle, where motion was thought of as change with the purpose of reaching an end-state, motion in modern thought occurs in the medium of space without reference to purpose, meaning or will. Motion is wholly in the hands of mechanical, calculable forces and not a property of life as such.

Much has changed in the history of the idea of motion, but something that has withstood the passage of time is the persisting relevance of motion. In *Physics*, Aristotle's thesis on the science of material nature, nature itself was defined in terms of motion (*Physics*, *Book II*). In the same treatise, we read that to understand space and time, one must first understand what motion is (*Physics, Book I*), which a young

Descartes later spun to a snide remark in *Discourse on the Method*: everybody understands what motion is, but no one understands Aristotle's definition. Nevertheless, it is not an accident that natural science ever since its inception has been concerned with the motion of material bodies.

The quintessential question has been the nature, or essence, of motion: is it absolute or relative? On the one hand, to deem that something is in motion requires a stable spatial and temporal anchoring: it was at that position then, but now it is at this position. Properties of motion such as velocity, direction or trajectory seem to be possible only against a *frame of reference* – a stable particular view on space for calibrating position and motion. In this sense, motion is a concept belonging to *relational space*. What does this tell us about motion? It is measurable and quantifiable only against some determinate view on space. A relational view of space positions an object against a surrounding in some specified sense. Perhaps it is simplest to understand this as a relation between a moving object and one or more static objects: *x* moves from *y* to *z*.

In the second book of *Principles of Philosophy*, Descartes presented a quite different perspective on motion. While space very well may be a relational concept, it does not entail that motion is primarily relational in the same sense. Thus, it is perfectly possible to have a person seated for the entirety of a train trip. In a relational sense, the person has been in motion: at each and every point during the travel, from departure up until arrival, the person got farther and farther away from the site of departure and closer and closer to the site of arrival. Even if the location has changed, the person was at every moment of the travel at rest. There was both motion and the lack of motion. We could say that the person was not in *inner motion*, but since the trained moved, there was *outer motion*. The situation can be turned around so that someone or something is moving without changing location, for instance spinning around or jumping up and down. In such a case, there would be inner, but no outer motion.

At the same time, it seems as if motion is moving us in the opposite direction. We are drawn towards not only change-in-location, but change in general. For instance, Aristotle made no distinction between motion and change. The acorn becoming an oak and the acorn falling to the ground are both examples of the principle driving nature: *κίνησις* (*kinesis*). Motion is change *par excellence.* Simultaneously, motion is also a particular way to move, quite independent of change. In this sense motion is something that belongs to the moving entity. Different objects have different ways of moving. A ball can roll and bounce, for instance, but a brick cannot. From the natural philosophy of Miletus to this day, motion has been seen both as change in position and the energy that drives that very change. The concept of motion is split in two: inner and outer, process and result, active and inactive, cause and effect, animate and inanimate, volitional and accidental.

This duality of motion is by no means unknown to linguistics. Quite early on, several French linguists noted that the expression of motion in French is stylistically

different from English and German (e.g. Bally 1932; Vinay and Darbelnet 1995[1958]; Tesnière 1959; Malblanc 1961). Tesnière (1959) proposed a general distinction between *mouvement* (movement) and *déplacement* (displacement). The former is "'inner motion, the activity involved in motion" whereas displacement is "outer motion concerned with how somebody or something changes its location in space, notably with respect to a given point of reference" (Wälchli 2001: p. 298). Examples of the former are movements typical of human beings such as *run* and *walk*, but should also include the inner motion characteristic of inanimate objects, e.g. *oscillate* and *bounce*. The important difference is that displacement, or outer motion, requires a reference to a surrounding, objective space: to change location is to be in two different places at two different moments. In other words, displacement presupposes an external grid to allow for relative change in position. It was only through the works of Len Talmy that these stylistic differences and the distinction of Tesnière became the theme for general semantic and typological enquiry. To repeat: When expressing change in location, languages differ in preferentially lexicalizing either inner motion or outer motion in the verb. In the Spanish and Swedish sentences in (1) and (2), the former expresses entering in the verb but the latter expresses how the object moved and is therefore required to express the change in another form class. Dependent on which, languages are said to "frame" the change in location differently. Languages where verbs typically express the locational change are called *verb-framed*. These are contrasted with *satellite-framed* languages where the locational change is expressed in a *satellite*: an associate to the verb different from e.g. prepositions and adverbs. Following Talmy's groundbreaking work from the 1970s and onwards, motion typology has grown to a research field in its own right.

From this brief exposé, we see that similar questions to those discussed throughout the history of ideas have occupied a focal role in linguistic typology of motion: What is the relation between inner and outer motion? Is this differentiation sufficiently granular to capture the experience of motion? Do all languages express motion in the way predicted by Talmy? Finally, is the limitation of the linguistic typology to motion as change of location warranted on semantic and conceptual grounds? I will offer some answers to these questions in this book.

2. Lived and observed motion

Both inner and outer motion can be observed, "from the outside", as it were. Observing motion does not exhaust our experience of motion; it is not only perceived and attributed to external entities. It is of course possible to take an observer's perspective on one's own movement – I am changing location from here to there, I am moving in this or that way, etc. But there is also another aspect, namely the type of motion that belongs to the observer rather than the observed. Even as observers, we

are never completely still. In order to perceive, we turn our bodies, tilt our heads and move our eyes. These movements in turn impact on how we experience. We can think about the difference between standing still, walking or riding really fast on a bike. It feels differently and the surroundings behave differently as well. How and what would experience of space and motion be like if we were not mobile?

> For a being completely immovable there would be neither space nor geometry; in vain would exterior objects be displaced about him, the variations which these displacements would make in his impressions would not be attributed by this being by change of position, but to simple changes of state; this being would have no means of distinguishing these two sorts of changes, and this distinction, fundamental to us, would have no meaning for him. (Piaget and Inhelder, 1956: p. 248)

Through our own movements we gain an immediate familiarity with the world. From walking around objects, looking at and manipulating them, we know that they are three-dimensional. It is by moving that we get closer to something desirable and further away from that which is unpleasant and dangerous even. The philosopher Edmund Husserl (1975 [1939]) argued that the capacity for self-motion is an indispensable condition for perception, and even for all forms of experience. We can think of this as a *lived motion* that grants an immediate and ego-dependent perspective related to the plurality of possible movements available at any given moment. At every moment, perception is conditioned by the fact that I can always move and thereby take another perspective. Through this latent predisposition, every experience is always complemented by the immanent possibility to take yet another perspective: *Ich kann immer weiter* ('I can always go on') as Husserl put it.

The rootedness of experience in the possibility of lived motion serves as an interesting experiential condition: our own body serves as a perspectival "zero-point of orientation" (Zahavi 2003). That is, I am here in a way that is qualitatively different from being somewhere else. This is not as trivial as it might seem: there is a certain perspective intimately connected with having a body necessarily located somewhere (Merleau-Ponty 1963 [1946]). It is from this perspective that experience is gauged and this perspective itself is wholly imbued by motility. In this way, lived motion makes up a horizon relative to the available movements.

Lived and observed motion are different but related phenomena: the former is a first-person perspective on motion, the latter a third-person perspective. It is the difference between being perceived and being the perceiver. Husserl pointed out that both perspectives can be simultaneously active, when, for example, one hand touches the other. In this case, I am touching and being touched, perceived and perceiving, agent and patient. Put simply, I am both subject and object. This *double-sensation* (*Doppelempfindung*) enables an objectification of the self and the location it occupies; my body is not only a *lived body* (*Leib)*, but also a physical object (*Körper*) located at a

specific place in a space common to me and other bodies with the same duality. For Husserl, this was essential for the possibility of empathy: understanding others as both intimately related, and distinct from oneself (cf. Zahavi 2003).

But for our purposes, this distinction raises an additional set of questions: What is the relation between lived and observed motion? In what way does lived motion shape our conception of space and motion? From a semantic point of view, does the capacity to move motivate how we talk about motion or how we use motion to convey other experiences?

3. Actual and non-actual motion

It is well known that verbs with motion semantics are in many languages extended beyond the experiences of actual motion. We see this in metaphorical expressions such as (6), where decreasing monetary value is represented as (if) falling, and in the Swedish example (7), where moving without touching the ground is used to express a state of joy and pleasure.

(6) The prices are falling.

(7) Penelope svävar av lycka.
Penelope hover-PRS of happiness
'Penelope is soaring with happiness.'

It is as if many kinds of experiences are so dynamic and palpable that they are thought of, imagined and spoken of as if being in motion. Sentences such as these have been taken as evidence, or at the very least as strongly indicating the fundamental role of motion for conceptualization and semantics. The concrete change of actual, physical motion stands as the communicative and conceptual template for speaking and thinking about less concrete domains such as monetary value and emotions. The latter domains are *construed* in terms of the former (e.g. Langacker 1986, 1987, 1990). Following this reasoning, linguistic meaning can be considered as based in the conceptualization and experience of perceptually palpable experiences of motion.

Be it literal or figurative, the sentences (6) and (7) both express a kind of change or type of motion. Strangely enough, verbs of motion can, at least in some languages, even describe static situations. The sentences in (8) and (9) convey the sense of motion "not really there" in any domain, actual or imagined: motion is superimposed on a static extended object.

(8) The mountain range goes all the way from Mexico to Canada.
(Talmy 2000a)

(9) The path rises steeply near the summit.
(Langacker 2006)

How should we classify these different ways to use motion expressions? We will say that (1) and (2) express *actual motion* while (6) and (7) express one kind of *non-actual motion*, figurative motion. But there is also another kind. The sentences in (8) and (9) describe the configuration of a spatial extension and they do not involve motion or change in the denoted realm. In the literature, several different terms have been used, all covering different ranges of expressions and with quite different connotations, such as *fictive motion* (Talmy 2000a), *subjective motion* (Langacker 1990), *implied motion* (Barsalou 2009) and *abstract motion* (Matlock 2010). To avoid both the binary oppositions that these terms entail (fictive vs. factive, subjective vs. objective) and to clearly capture the difference between these expressions and expressions of actual motion, I will use the term *non-actual motion* (Brandt 2009; Blomberg & Zlatev 2013). This term refers to dynamic qualities of consciousness in the perception or imagination of situations that lack actual motion. Non-actual motion sentences are, at least hypothetically, motivated by such experiences.

Some cognitive linguists and psychologists have argued that the motivation for using such expressions is due to a dynamic attitude on the speaker's behalf (Langacker 1990; Talmy 2000; Matlock 2004a, b) explained as a "mental simulation of motion" (Matlock 2004a). In other words, sentences such as (8) and (9) are motivated from the experience of motion. Given that the experience of motion is heterogeneous, involving both inner/outer and lived/observed, what does it mean to say that non-actual motion sentences involve simulation of motion? From a linguistic perspective, are all languages as prolific as English or is this phenomenon a matter of linguistic conventions? Are there differences between languages in the situations where such sentences can be used? These are also questions that we will attempt to provide answers to.

The three distinctions of motion are not completely independent of one another. The prongs outer, observed and actual motion are in a sense concerned with a different perspective from inner, lived and non-actual motion. The latter concepts seek the qualities of moving and what it is like to be in motion. In contrast, the former ones think of motion as something observable and quite independent of the qualities of moving. This is not to say they overlap entirely, but rather that there are correspondences and points of contact between the binary pairs.

4. A roadmap for the book

From these three conceptual distinctions, we have departed on an exploration of the different facets of motion. The rest of Part I discusses relevant theoretical work that will be important for the whole journey. What is the relation between meaning in language and in experience? Pointing specifically to motion, linguists such as Talmy and Langacker have argued that language manifests how we experience and conceptualize the world. Is the equation between meaning in experience and language warranted or should it be systematically differentiated? While acknowledging that meaning is motivated by experience, we also need to acknowledge that language significantly alters, shapes and constrains these motivations in different ways. Investigating meaning in language and experience thus requires separation between the two, prior to calibrating their relation. Through this separation, I present a phenomenological account of experience, in the Husserlian sense of the term, which is used in subsequent chapters to analyze motion. Meaning in language is understood as motivated from experience, but different. One theoretical framework that acknowledges this in the domain of motion is *Holistic Spatial Semantics* (Zlatev 1997, 2003), which I adopt and further elaborate.

In Part II, we halt at actual motion in language in experience. Through a critical discussion of motion semantics and linguistic typology, I propose in Chapter 3 an experientially based taxonomy of observed motion and the semantic categories required to capture their expression. Chapters 4 and 5 use this framework to calibrate and analyze results from an elicitation-based study carried out with speakers of Swedish, French and Thai. The choice of languages is motivated by the fact that Swedish and French have been seen as typical examples of Talmy's binary typology while Thai has been suggested to manifest a "third type" (Zlatev and Yangklang 2004; Slobin 2004). Given a more pluralistic view on motion in both experience and language, how do the three languages differ? Do they fall into three distinct types or are there differences and similarities that have not been noticed previously?

Part III moves on to non-actual motion in both language and experience. Chapter 6 presents a phenomenological re-analysis of some well-known previous accounts, namely those of Talmy (2000a), Langacker (1990, 2006) and Matlock (2004b). I opt for a strict separation between the *experience* of non-actual motion and non-actual motion *sentences* – a separation sometimes forgotten in the literature. A main contention is that the use of non-actual motion sentences is a heterogeneous phenomenon, rooted in several different kinds of experience of motion. The extent to which these (possible) motivations do in fact mark their presence in language is the topic of Chapters 7 and 8. Through an elicitation of non-actual motion sentences in Swedish, French and Thai, I compare (a) the conditions under which such sentences are preferably produced, (b) how the three languages differ in the expression of non-

actual motion and (c) whether the differences can be correlated with the expression of actual motion.

Finally, we will complete the journey in Part IV with a summary and discussion of the book as a whole and its conceptual, theoretical and empirical findings.

Chapter 2
Meaning in language and experience

Given the close connection between language and experience implied in the previous chapter, one may be led to the view that linguistic meaning is wholly dependent on the language user's conceptualization (e.g. Langacker 1987), from his or her subjective viewpoint. This view, however, underestimates (i) the conventional and socially shared character of language and (ii) the difference between strictly linguistic meaning and the contribution of extra-linguistic factors for determining meaning. We are therefore led to ask whether it is possible to develop a semantic framework that attempts to account for the apparent and recurrent tension between linguistic meaning as motivated by subjective experience and at the same regulated by socio-normative practices. I will answer this question in the positive by developing a synthesis based on the framework of *Holistic Spatial Semantics* (Zlatev 1997, 2003), and apply this to the analysis of motion semantics. According to this framework, spatial semantics emerges from sensorimotor interaction with the world at the same time as language-specific conventions constrain, regulate and adapt these motivations. In the final part of the chapter, I bring together the various discussions of linguistic meaning, experiential motivations and language-specific conventions under the general heading of *phenomenology*. The various motives and themes developed in phenomenology can be seen as a theoretical (and ethical) ground for the approach presented in the remaining chapters of this book.

1. Linguistic meaning: motivated, conventional or both?

Most linguistic discussions of actual and non-actual motion belong to a specific reading of linguistic meaning as motivated, emergent and structured on the basis of bodily abilities and sensorimotor interactions with the world. In a discussion of the psychological mechanisms involved in comprehending and producing non-actual motion sentences, Matlock (2004a: p. 1390) makes the concise and bold statement that "[l]anguage is structured the way it is because of our natural ability to simulate motion". Even if this claim is read with a spoonful of salt – it cannot be seriously entertained that verb inflection or word order depend on the simulation of motion – it is still indicative of a particular attitude towards linguistic meaning and the role often attributed to basic experiential or cognitive domains such as motion. Phrased less radically, linguistic forms and conventionalized expressions may be seen as reflections of underlying cognitive structures and motivations based on the

immediate, bodily encounter with the world. Such a position is commonly held within *cognitive linguistics* as represented in the works of e.g. Len Talmy, Ron Langacker, Gilles Fauconnier, Mark Turner, George Lakoff and Mark Johnson. To paint in very broad strokes, the tenets of cognitive linguistics could be summarized in the following three claims (cf. Tyler and Evans 2001):

I. Meaning is mental conceptualization.
II. Conceptualization is based on bodily abilities and sensorimotor interactions.
III. Language reflects these conceptualizations.

A clear illustration of these three claims is found in Lakoff and Johnson's (1980, 1999) *Conceptual Metaphor Theory*. This theory claims that metaphors are primarily conceptual, rather than linguistic asymmetric *cross-domain mappings*: one particular domain of experience (e.g. TIME) is understood in terms of another (SPACE). Metaphors in language are then reflections of such underlying conceptual structures. A common and telling example is the mapping from the vertical axis to emotional or value judgments, expressed in English sentences such as in (1) where location at the highest altitude corresponds to feeling joyous or ecstatic. Descending motion expressed in (2) rather corresponds to the opposite judgment: things are becoming worse.

(1) He is on top of the world.
(2) Everything is going downhill.

There is nothing intrinsically good or bad about the directions up and down or higher and lower location, but English and many other languages nevertheless systematically deploy this schema for expressing evaluative or emotional statements. Per this analysis, emotions and values are structured in thought, and consequently in language, through the spatial domain of verticality. Why is this is so? The preference to map the vertical axis is said to be highly motivated from the conditions of experience, especially considering our upright bodily posture. Thus, linguistic meaning is analyzed as more or less identical with pre-linguistic mental conceptualizations. Furthermore, due to the bodily grounding of conceptualization, this kind of theory can claim that meaning is mental without thereby succumbing to the traditional problem of meaning as "private" and variable from subject to subject in a principally unconstrained way (a view discussed and criticized by philosophers like Husserl (1970c [1900/1901]), Frege (1984 [1892]) and Wittgenstein (1953)). Since we all have similar biological constitution, we share the same basic structures and concepts (Lakoff and Johnson 1999).

The claims in I-III have also been applied to the analysis of actual and non-actual motion semantics. Talmy (1985) claimed that Motion-verbs co-express additional components of meaning. The conceptual components corresponding to

inner and *outer* motion (cf. Chapter 1) were labeled Manner (of motion) and Path, respectively. Thus, Talmy's binary typology distinguishes languages depending on the way these semantic categories map to different sentential constituents, and above all on whether Path is usually expressed by verbs as in the Spanish (3), or by associates to the verb called "satellites", as in the English example (4).

(3) La botella *entró* a la cueva.
(4) The bottle floated *into* the cave.

(Talmy 1985: p. 69)

Talmy (2000b) advocated that this cross-linguistic differentiation reflects the two ways in which motion is conceived and experienced: either as change-of-location or as manner-of-movement. The linguistic analysis leading up to a typology of motion thus follows from general principles of categorizing and experiencing.

> The cognitive correlate of this linguistic phenomenon is that we apparently *conceptualize, and perhaps even perceive*, certain complex motions as composites of two abstractly distinct schematic patterns of simpler motion. (Talmy 2000b: p. 36. My emphasis.)

To repeat: the semantic typology of motion supposedly reflects how motion is experienced. From the semantic analysis of motion expressions across languages, it is concluded that the categorization and perception of motion may explain the way languages are structured. It could rightly be objected that the differentiation between the two kinds of motion seems to be based on a particular semantic analysis rather than an experiential account of motion. Say that an additional type of linguistic patterns is introduced, would this require a corresponding addition to the experiential analysis of motion? We return to this in Section 1.2 below.

If language is taken as reflecting pre-given conceptualizations, how can we explain the use of sentences where motion-expressing verbs describe static situations? In these instances, after all, it cannot be the immediate perception of motion that motivates this particular feature of language. Consider the non-actual motion sentences in (5) and (6).

(5) An ugly scar extends from his elbow to his wrist.
(6) An ugly scar {extends/goes/runs/reaches/stretches} from his wrist to his elbow.

(Langacker 2001: p. 9)

While these sentences denote the same state-of-affairs, they differ in "how" it is described. The order of the two reference points on the body are reversed in (5) and

(6), and may be said to signal how the speaker construed the situation (Langacker 1990). There is in the subject's conception of the situation a beginning and an end between which the scar *extends* or *goes* or *runs*. In this way, one can convey the sense of continuity in the visual experience of the scar. This continuity of the scar is like motion in the act of intending, in the attentive processes of "building up" the conception as a whole (Langacker 1999: p. 84).

> [The sentences in (5) and (6)] are truth-conditionally equivalent, describing precisely the same objective situation. Yet they clearly differ conceptually, and since the differences are determined by their form, they must be accepted as aspects of linguistic meaning. The contrast between [them] resides in the direction of mental scanning, i.e., the conceptualizer's path of mental access in building up to a full conception of the overall configuration. [...] These various expressions construe the same situation in contrasting ways. (Langacker 2001: p. 9-10)

To explain (this type of) non-actual motion sentence, an appeal to the mental disposition and constitution of the speaker is required. It is his or her continuous shift of attention through time, *mental scanning*, that is responsible for the semantic difference between the sentences in (5) and (6). This process itself is conditioned by the concreteness of shifting attention in visual perception (cf. Langacker 2006), as when following a moving entity with the gaze. According to Langacker, it is this concrete act that motivates and anchors the meaning of non-actual motion-sentences. This feature of meaning belongs to what Langacker calls "conceptualization": general cognitive processes of meaning-making. To conclude this summary of cognitive linguistics, the study of linguistic meaning must involve facets such as "principles of human categorization; pragmatic and interactional principles; and functional principles in general, such as iconicity and economy" (Kemmer 2010). Given that these features characterize linguistic meaning, the study of meaning ultimately requires reference back to the type of non-linguistic experiences that underlie and motivate them. In other words, to study language in this way would be to glance through a window to human cognition.

> [M]eaning is equated with conceptualization. Linguistic semantics must therefore attempt the structural analysis and explicit description of abstract entities like thoughts and concepts. […][C]onceptualization resides in cognitive processing, our ultimate objective must be to characterize the types of cognitive events whose occurrence constitutes a given mental experience. (Langacker 1986: p. 3)

The meaning encountered in language is prior to language itself. Meaning is sensed and felt through a primordial organization of sensori-motor abilities giving rise to a kind of "folk physics". It is on this level of direct interaction with the world that meaning is built. On this level, we use our sensori-motor skills to maneuver in a world where it is important to differentiate between verticality and horizontality, where motion can be the result of external force or initiated spontaneously and willfully and where some objects are hollow and can accommodate other objects, etc. (cf. Hills 2012).

There is much to recommend to such analyses of the motivational nature of language in general, and that of motion in particular. However, two related features of language and linguistic meaning that are thereby neglected are (i) conventionality and (ii) differences between linguistic and extra-linguistic knowledge. It is to these we now turn.

1.1 Linguistic conventionality

A diametrically opposed position to that expressed above could claim that experiential motivations and pre-given conceptual structure are epiphenomenal, or at least insufficient to account for linguistic meaning. The nature of language is not that of a psychological or individual phenomenon, but rather of a socially and historically situated institution. In this regard, language must subscribe to public criteria of correctness through which linguistic meaning is imbued with *normativity* (Itkonen 2008, 2008a). Philosophers such as Ryle (1949), Wittgenstein (1953) and Austin (1962) have all argued against ascribing mental properties a privileged status vis-à-vis linguistic meaning. Instead, they have advocated that language should be thought of primarily in terms of the use and function of linguistic discourse.

In defending a Wittgensteinian conception of language, Esa Itkonen specifically targets the assumption that motion-related experiences like mental scanning are intrinsically involved in determining the meaning of non-actual motion sentences.

> [T]wo opposite fictive motions are assumed to be connected with the sentences *That mountain range goes from Canada to Mexico* and *That mountain range goes from Mexico to Canada* […] But suppose that, upon hearing or uttering one or both of these sentences, I fail to mentally perform the typical fictive motion. What happens? — Nothing. — Why? — Because no norm has been broken. — Why? — Because a norm cannot be broken without people realizing that it has been broken. (Itkonen 2008a: p. 23)

Whether non-actual motion sentences induce or evoke a motion-like experience is irrelevant. It is important not to misread Itkonen on this point. His critique of

notions such as "fictive motion" does not rule out everything mental from language (understanding): of course there are such things as psychological processes. The question is what role they have in explaining linguistic conventionality and normativity. The target of Itkonen's critique is any attempt to incorporate linguistics as a whole under cognitive psychology and thereby exclude the social aspect of language – a suggestion made not only by cognitive linguists but also by generative grammarians (e.g. Chomsky 1965). Even if the cognitive linguistic account of meaning tries to include features that are not individual-psychological, as evident from appeal to locutions such as "conventional metaphor" (Lakoff 1987) and "conventional mental imagery" (Langacker 1990), the issue is not resolved thereby. Mental phenomena are (primarily) individual, while conventions are (primarily) social.

> [Mental images] are hypothetical entities: we do not know what they are, but only presume what they might be; […] In contrast, we do know the meanings of words like *midnight* and of sentences like *I will come to see you at midnight*; it makes no sense at all to assume that they are non-existent. […] It needs to be added immediately that we know the meanings of words and sentences only at the pre-theoretical level, i.e. we know them merely as the data. We do not know how they should be theoretically analyzed. (Itkonen 2008b: p. 285)

In presenting this critique, Itkonen relies on the so-called *private language argument* from the later works of Wittgenstein (1953: § 244-271). While massively debated and with numerous interpretations, Wittgenstein discusses, and seems to deny, the possibility of a language in principle unintelligible to anyone but its originator. Itkonen adapts this argument to a kind of meta-linguistic argument. The linguistic method of evaluating linguistic material does not assess psychological processes but publicly known and commonly shared *norms* of correctness. Per this view, norms are not something prescriptive about what is socially acceptable, but constitutive of a particular historical language (cf. Coşeriu 1985). The socially shared nature of language is such that it relies on what is considered correct or not in a specific language, something that all speakers of a particular language have pre-theoretical knowledge about. This pre-given knowledge about correctness serves as the basic data for linguistics.

> We know that *John is easy to please* is a correct English sentence (unlike e.g. **John is easy from please*) and that it means the opposite of *John is difficult to please*, but we do not know the best theoretical description of this (or any other) sentence. (Itkonen 2008b: p. 289).

In other words, the characteristic feature of language as regulated by normative rules cannot be carried out by appeal to mental and psychological properties. It follows that to claim that language is fully structured by pre-linguistic experience and pre-given categorization disregards conventionality and will therefore ultimately fail.[2]

Language as (a system of) norms conforms to Saussure's famous statement that language is a social institution (Saussure 1916). Still, societies are made up of individuals, with living bodies with consciousness, and it would be wrong to exclude the role of these factors as a *partial* explanation of linguistic structure and meaning, once it is granted that they are not sufficient. As I will go on to suggest in Section 3, while language is a social and collectively shared institution, it is still anchored in what can be called the *life-world* (*Lebenswelt*).

1.2 Linguistic and extra-linguistic knowledge

A word like *chair* can be used to denote many different types of objects, e.g. armchairs, stools, seats, etc. While many types of chairs have four legs, not all do. If then defined as "something to sit on for one person", then we would have to include saddles and wheelchairs in a definition of chairs. This seems to imply that a definition of the word in terms of necessary and sufficient conditions, a so-called classical definition, is inadequate. Since the word *chair* is perfectly understandable and quite seldom causes confusion in communication, one must take this type of vagueness into account in providing a description of its meaning. One influential idea, emanating from Rosch (1975), is that both concepts and linguistic meanings exhibit prototype effects. Lakoff (1987) has attempted to account for such effect by proposing that meanings correspond to information-rich knowledge structures called *Idealized Cognitive Models* (ICMs). Some prototype effects follow from how ICMs fit particular situations (e.g. the Pope does not fit the ICM for *bachelor*), and other such effects from the *radial structure* of ICMs.

Brugman (1981) and Lakoff (1987) apply a similar analysis to the English preposition *over*. This preposition covers a range of different spatial senses, including

[2] Itkonen's concept of norms seems to be broad, but is often straightforwardly shown with simple examples such as word order. It would be preferable to differentiate between various kinds of norms regulating linguistic discourse in quite different ways. One can for instance produce a grammatically correct sentence but say something quite nonsensical – as in Chomsky's famous example of *colorless green ideas…* Or one can say something inappropriate under particular circumstances but not in others. One could therefore propose grammatical rules, semantic adequacy, situational appropriateness and extra-linguistic knowledge to not only constitute different aspects of language (cf. Coşeriu 1985), but also to have different types of norms and expectations on what is correct. A very general concept of norm is at risk of blurring these different levels or aspects of language.

both dynamic and static specifications, e.g. location at a superior position (7), stretching across a landmark (8), moving across a landmark (9) and occluding another object (10).

(7) The helicopter hovers over the bridge.
(8) The bridge goes over the river.
(9) The man goes over the bridge.
(10) The clouds are over the sun.

(Regier 1996)

According to Brugman and Lakoff, the semantic meaning of *over* should be seen as forming a network, radiating from a central sense towards more peripheral ones.

The important 20th century structural-functional linguist Eugenio Coşeriu (2000) has expressed skepticism concerning a rich, psychological notion of linguistic meaning by pointing to the difference between the meaning of a word and the situations to which it can be applied. To this end, Coşeriu insists on a principal distinction between *signification* (*Bedeutung*) and *designation* (*Bezeichnung*). These terms are used to indicate the separation of the linguistic semantic entity (e.g. a lexeme) from the situations to which it can refer.[3] With the help of this difference, Coşeriu claims that the meaning of the lexeme *chair* can be clearly defined. It takes a specific function in the English language where it is opposed to other words. The relation between the entities or situations, i.e. the designation, can be vague. In other words, just because chairs in the world are diverse does not entail that the sense of *chair* is fuzzy. Per Coşeriu's argument, we can see significations as abstract and schematic forms that have the ability to cover a range and multiplicity of heterogeneous designations. The meaning of a particular lexeme is therefore not necessarily either vague or polysemous (though it could be, of course), but attains a specific meaning in designative acts. From this perspective significations are schematic semantic forms that partake in a linguistic system rather than denotational per se.

While the target of Coşeriu's criticism was one version of *prototype semantics*, it can be applied to the discussion of motion presented earlier. We can illustrate this with Talmy's analysis of "fictive motion" (Talmy 2000a), including sentences such as (11).

(11) The beam leans away from the wall.

---

[3] It should be noted that the difference between signification and designation is not always forgotten in cognitive linguistics. For instance, Langacker (1987) accepts that the active and passive voice denote the same state-of-affairs but designate it in different ways, what Langacker calls *construal*. As noted above, Lakoff (1987) claims that some gradience phenomena result from the degree of fit between the so-called *idealized cognitive model* and the situation.

We are told that "the depicted motion or materialization is fictive and, in fact, often wholly implausible" (Talmy 2000a: p. 135). The verb *lean* can describe both a particular configuration and the process of reaching that state. In this way, there are not two different designations. Talmy seems to take the dynamic sense as more basic through which the static configuration is derived as an extension. A Coserian response would be that a semantic analysis that regards one of two possible designations as the true signification is too specific by taking extra-linguistic knowledge as directly contributing to the intra-systematic differentiation between signs in a language.[4]

> A semantic theory in which linguistic and non-linguistic properties are identified or simply confused with each other, cannot ascertain how extra-linguistic knowledge contributes to the constitution and interpretation of texts [roughly: any linguistic material]. (Coşeriu 2000: p. 33)

In sum, Coşeriu insists on distinguishing between linguistic meaning (semantics, narrowly conceived) from real-world knowledge, motivational psychological processes and particular ways to conceive situations (pragmatics, in one possible interpretation). Yet, in other writings, the need to integrate knowledge of the linguistic system with knowledge of the world and knowledge of specific situations is emphasized (e.g. Coşeriu 1985).

From Coşeriu's critique, we can pick up not only the principal separation between signification and designation, but also the contribution of "extra-linguistic knowledge" to linguistic meaning. What this exactly amounts to is not really clear since Coşeriu pays little attention to the different ways in which words interact in an utterance. A signification is schematic and abstract enough to carry many different meanings, but is the specific determination only a matter of designation? Is it not possible to *also* include the linguistic context as such? Consider for instance the different linguistic contexts of the preposition *over* in (7)-(10). The specific sense is to a large degree determined by the surrounding linguistic context, as in the difference between static and dynamic reading. Differentiating between these is not only a matter of the type of situation, but is also determined by the semantics of the verb in question. Thus, the verb *hover*, which cannot participate in expressing change in location, is in (7) largely responsible for providing *over* with a locative interpretation.

---

[4] Of course, Coşeriu would not deny that the signification must be determined in relation to the designation in some respects. Otherwise, the homonymy between *bank* as a financial institution and *bank* as a slope could just as well be treated as the same signification. In other words, the designation and real-world knowledge must to some extent partake in determining what is one signification and what is not. Thanks to Andreas Widoff for pointing this out.

Conversely, *go* on the other hand quite typically suggests change of location, or is by the very least compatible with change in location. It therefore effectively contributes to determining that *over* in (9) should be understood as expressing change rather than location (cf. Regier 1996). How to integrate these two features of context into a semantic theory is the topic of the next section.

2. Holistic Spatial Semantics

Based on our discussion thus far, we have come a long way from the general tenets of cognitive linguistics with which we began this chapter. While agreeing on a pre-linguistic basis and motivation for meaning, I have suggested that linguistic meaning does not transparently reflect these motivations, but is largely based in conventions and with schematic forms. We can summarize the conclusions in the following three points:

a. Linguistic meaning is motivated from experience.
b. Linguistic meaning is conventional and schematically structured.
c. Situational context and real-world knowledge contribute to determine linguistic meaning.

Taken independently, each of these claims may not be controversial. Yet, it has proven difficult to formulate a theory where all three partake. Is it possible to have a feasible theoretical approach to linguistic meaning where all features (a-c) are taken into account?

The general framework of *Situated Embodiment* and its application to spatial semantics, the theory of *Holistic Spatial Semantics* (HSS) tackles this head-on (Zlatev 1997, 2003). First, it is proposed that stable semantic categories emerge through sensorimotor interaction, i.e. in the direct and immediate experiential encounter with the world. Second, in order to avoid confounding the meaning in experience with the meaning in language, Zlatev (1997) proposes that semantic categories are schematic, socially shared and adapted to language-specific conventions. Third, language is always situated in a linguistic and social context which ultimately determines both structure and meaning in language. With respect to the difference between experiential and linguistic categories,

> HSS assumes that these semantic categories have their basis in categories of sensorimotor experience, but are not sensorimotor themselves. The latter are perceptually rich and language-independent while the semantic ones are schematic and language-dependent. (Zlatev 2003: p. 310)

As pointed out, HSS has been formulated as a theory for the cross-linguistic analysis of spatial meaning. In this domain, a set of semantic categories with language-variant values is proposed. Thus, the sensorimotor categories on which they are based are adapted to language-specific conventions and in this process also change from dense full-fledged structures of spatial experience to shared schematic and communicable forms. These categories are Figure, Landmark, Frame of Reference, Path, Direction, Region and Motion, discussed in-depth in Chapter 3.

One of the challenges for a semantic theory is to explain how linguistic meaning can be specified in individual sentences and constructions. On the standard cognitive linguistic reading, linguistic expressions inherit their meaning from the underlying experiences and conceptualizations. Assuming rather that semantic categories are schematic, what would for example determine in which of its many senses the preposition *over* is to be understood in the examples in (7)-(10) above? The solution proposed to this dilemma by HSS is to widen the scope beyond individual words and look at the way in which parts and wholes interact in a spatial utterance.

2.1 Conflation and distribution

One common approach to spatial semantics has been to focus on word meaning in general and on the meaning of so-called "closed-class items" (Talmy 1983) i.e. grammatical elements, in particular, as exemplified in the following quotations.

> To talk about space and spatial relations […] languages make use of a relatively small number of elements. (Svorou 1994: p. 31)

> Cross-linguistic investigation should focus on closed-class elements (whether verb markers, prepositions, postpositions, etc.) that express spatial relationship (Landau and Jackendoff 1993: p. 238)

As in the related framework of *Distributed Spatial Semantics* (Sinha and Kuteva 1995), HSS rejects the assumptions that (a) spatial relations are contained or "localized", to single linguistic units that (b) form a coherent set of grammatical rather than lexical elements. With respect to (a), spatial meaning is not only determined as a composition of discrete elements joined together, but always co-determined by the utterance in which the elements participate: hence the "holism" of HSS. This means that the full meaning of any given word is dependent on the linguistic context in which it takes part. There are cases where several spatial specifications are fused into a single form. The Swedish adverb *in* specifies location inside a container (specifying the category Region) as the result of change of location (Path), cf. (12). This can be contrasted with the static preposition *i* where only location is specified (Region), see (13).

(12) Elrond spring-er in.
Elrond run-PRS in
'Elrond runs in.'

(13) Gimli gick i hus-et.
Gimli walk.PRS in house-DET.DEF
'Gimli walked in the house.'

In the parlance of HSS, the adverb *conflates* two different spatial meanings: location inside and end-point of motion. Spatial meaning can display the opposite pattern of being spread across more than one form. French where the verbs *entrer* ('enter') and *sortir* ('exit') are combined with the prepositions *dans* ('in') and *de* ('from'/'of'), respectively, see (14). Both the verb and the corresponding preposition provide information about moving to the inside/outside of a landmark (i.e. Path). Without the preposition, the clause would either have a different meaning or be ungrammatical. In other words, the semantic category Path can be seen as *distributed* across verb and preposition.

(14) Gandalf entre/sort dans/de la maison.
Gandalf enter.3SG.PRS/exit.3SG.PRS in/from DET.DEF.F house
'Gandalf enters/exits the house.'

Thus, HSS claims that the form-meaning relation should be thought of in terms of many-to-many mappings between form classes and semantic categories against the background of participating in entire constructions in specific contexts. The following three different patterns of mapping between form classes and semantic categories have been suggested (Zlatev 1997).

- *Complementarity*
    - One form class for one semantic category.
- *Conflation*
    - One form class for more than one semantic category.
- *Distribution*
    - More than one form class for one semantic category.

The "parts" are not independent from one another since their meaning is essentially their contribution to the meaning of the whole (spatial) utterance. In other terms, every expression participates in a holistic unity – an utterance or a situation of "meaning transmission" (Haglund and Blomberg 2010). Were it not for this unity, there would not be any parts to speak of. This means that the relation between parts

and wholes should be reversed: the latter is the basis for analysis from which parts can be extracted, analyzed and put back in.[5]

2.2 Covert expressions and background of practices

Since the relation between expression and meaning is holistic and prone to contextual determination, meaning need not be explicitly or overtly expressed. One particular expression is able to instantiate different meanings in different situational contexts and in different linguistic environments. When a semantic category is covertly expressed, then an overtly expressed category participates in expressing another category. Zlatev (2003) points to English where verbs seldom express the semantic category Region overtly. "However, the use of particular verbs will constrain the value of Region [...] [C]overt expressions of Region by certain verbs in English [...] may be seen as an effect of the holistic relationship between concepts within situations" (ibid: p. 306). We can apply this analysis to the preposition *over* discussed in Section 1.2. The differentiation between moving above the surface (15) of the bridge or on its surface (16) is largely specified by the different verbs. Thus, even if the verbs express a type of movement they still constrain and determine the specific meaning of the preposition and the same can be said about any constituent in a clause.

(15) Gwaihir flew over the bridge.
(16) Morgoth walks over the bridge.

It is not really clear whether Coşeriu would label this a contribution of "extra-linguistic knowledge" or not, i.e. is it a matter of what we take flying to be or is it part of signification of *fly* to be located above a reference object? Nevertheless, by taking the surrounding linguistic context into account, we see how the schematicity of a lexeme is specified and constrained. A clearer case of the role of world knowledge in determining spatial meaning, attributed in HSS to "the background of practices", can be seen in (17)-(18): whereas we understand the tower to be located outside the school in (17), we know that an office is located inside the school (18). Our background knowledge (and know-how), concerning towers, schools and offices helps to determine the appropriate interpretation.

(17) The tower is at the back of the school.
(18) The office is at the back of the school.

---

[5] A perhaps far-fetched parallel is the so-called *hermeneutic circle* according to which investigations of meaning require constant oscillation between wholes and parts.

2.3 Summary

A holistic conception of spatial semantics allows for substantial differences between (and even within) languages without resorting to linguistic/semantic incommensurability, i.e. the view that languages (or even idiolects) differ to such an extent that typological research becomes methodologically impossible and theoretically meaningless. The most important difference between languages is claimed to be in how the semantic categories are expressed: some can be distributed in one language while standing in a one-to-one relation in another language. A second difference concerns the exact values that each category takes, especially Region, and as we will see, the category Manner. A third difference – familiar typological practice – is the interplay between overt and covert expression: what is "coded" in some languages, is "implied" in others.

As we shall see in Chapters 4 and 5, the expression of motion is characterized by a complex interplay between verbs and additional form classes, which differ not only from language to language but depend also on the type of motion situation described. This complexity requires more than studying single form classes independent of the sentences and constructions in which they participate. Phrased in radical terms, *all linguistic elements attain their specific semantic meaning only in relation to the linguistic context in which they occur*. This is not to say that the meaning of individual forms is determinable only in context, completely open-ended and entirely substitutable. The interplay between word meaning and linguistic context leading to overt and covert patterns of distribution is one of the most important ideas in HSS and recurs throughout the present book.

We are gradually progressing. From the view that language is motivated from experience and pre-given categorizations we moved on to the opposite view of linguistic meaning as an autonomous sphere regulated by conventionality and with a strict distinction between linguistic and non-linguistic. Through our discussion of HSS, a synthesis relevant for the analysis of spatial semantics was outlined. This framework argues that semantic categories are differentiated from pre-linguistic motivations but at the same time shows how background knowledge participates in determining linguistic meaning. The connections between these different themes can however be further developed. In the following section, I situate the discussions of meaning in language and experience within a phenomenological framework. It is not so common for phenomenology and linguistics to meet, even if some renowned linguists, among them Roman Jakobson (cf. Holenstein 1976) and Karl Bühler (1990 [1934]), were acquainted with and even inspired by phenomenology. Sonesson has ardently argued for a phenomenologically inspired perspective on linguistics and semiotics (Sonesson 1989). More recently, an integration of phenomenological insights into cognitive linguistics is beginning to take place (e.g. Bundgaard 2010; Zlatev 2010).

My reasons for turning to phenomenology are several and will continuously be motivated and explicated as we go along. Most generally, I take a phenomenological perspective to be indispensable for studying meaning. This is because all phenomena in the human sciences, including language, are by definition, meaningful for someone (Schutz 1967 [1932]). In other words, any endeavor that actively takes its point of departure from and remains faithful to the prior meaning of the object of investigation is to my mind (explicitly or implicitly) phenomenological. The specific reading that I will develop follows the pathway of its founder Edmund Husserl.

3. The phenomenological toolbox

There are many different aspects of the school of philosophy known as phenomenology and quite different interpretations (Sokolowski 2000). Through its 100-odd years of history, phenomenology has developed in different directions and diversified in different branches. I rely specifically on Husserlian phenomenology, since Husserl is after all unanimously considered "the founder", not only in a genealogical sense, but also in the sense that the most important phenomenological themes were in one or another way addressed in his works.

According to Husserl, knowledge and meaning are grounded in experience. The study of meaning is therefore the study of the principal conditions under which experience is possible. This philosophical idea of laying down the conditions for knowledge and meaning springs from the German 18th century philosopher Immanuel Kant. But where Kant was concerned with the categories and concepts that allowed for human knowledge (thereby strictly separating between the way things are accessible to our cognitive faculties and the way things are in and by themselves, *das Ding-an-sich*), Husserl consistently emphasized how experience is *given*. On one reading, there is nothing apart from experience – not in an ontological, idealist sense where only subjective experiences exist, but in an (extended) epistemological sense where the principal condition for any kind of knowledge, including scientific knowledge, is experience. One of Husserl's specific concerns was that science had lost this foundation and therefore took its own worldview for granted (Husserl 1970c [1900/1901]). In sharp opposition to such objectivist pretenses, Husserl consistently argued to "go back to the things themselves", i.e. to the way that things become disclosed in different kinds of experiential acts. Phenomenology is the investigation of these conditions.

Throughout Husserl's thinking, the conditions for experiential disclosure became gradually more complex. He departed from something that has become known as *static phenomenology*: the illumination of how experience is characterized by *intentionality*. This characterization includes not only material objects, but also linguistic objects such as words and sentences, mathematical objects like numbers and

imaginary ones like unicorns. Husserl was in part prompted to this enquiry by the classical philosophical problem of *constitution*: the principal conditions that make something what it is. What makes a number into a number and not something else? The phenomenological approach is an investigation of how objects are disclosed in experience. According to Husserl, different kinds of objects are given in different ways to consciousness. The principal task for static phenomenology is the minute description of how objects are constituted by intentionality (Husserl 1970c[1900/1901]). That is, everything is marked by the conditions under which it is intended by and given to consciousness. I describe static phenomenology in more detail in Section 3.1, where I show how phenomenological analyses can help to clarify the difference between linguistic and non-linguistic experience.

Quite early on, the limitations of static phenomenology became apparent to Husserl. Experience is not only constituted by the activity of the mind. Prior to any direct and intentional engagement with the world, we are also always already affected by it. Many different conditions affect and constitute intentionality itself: we have bodies and we are motile, for instance. These are not active, thematic experiences, but rather involve the type of openness against the world that allow for intentionality to emerge in the first place. Therefore, Husserl spoke of *genetic phenomenology*: the "becoming" of intentionality. We can relate this to discussions how bodily interactions with the world motivate and ground linguistic meaning, as suggested in Section 3.2 below.

Late in his life, Husserl's thinking turned towards the ways in which conscious individuals are rooted and grounded in the world (Husserl 1970a [1936]). Not only in the physical sense that we live on a planet called *Earth*, but rather in something that Husserl labeled the *life-world* (*Lebenswelt*). This is the experiential world that is "taken for granted" (Schutz and Luckmann 1973; Sonesson 1989), in all senses of the word. In this world, the sun goes up and down, there are historical narratives and traditions, different cultures and norms. Phenomenology directed towards these topics has been called *generative* (Steinbock 1995), in the sense that it concerns phenomena that span across "generations", such as history, culture, life and death.

In the life-world, we also find language(s). From this perspective, language is both a part of, and about not "the real world", as in logical semantics (Montague 1976), or the mind, as in most approaches in cognitive linguistics, but the shared life-world. Linguistic meaning is ultimately situated at this, so to speak, intermediary layer between the physical and the mental, both of which can be seen as abstractions, derived by "leaving out" some parts of the life-world. Thus, when Coşeriu (2000) speaks of the importance of extra-linguistic knowledge and Itkonen (2008) of the central role of normativity, these can be interpreted as bringing different important elements of the life-world into linguistic analysis. I discuss generative phenomenology in Section 3.3 where I develop the synthetic view of language as both motivated and conventional in more detail.

3.1 Static phenomenology

Sitting in a park on a sunny day, you are immersed in a novel. Absentmindedly, you take a sip of coffee and continue to read. Slowly, you begin to feel disturbed. Or rather, you notice that you have for quite some time been disturbed by a loud noise. Looking up from your book, you notice that there is a construction site on the other side of the park. Construction workers are drilling, hammering and there are machines making all kinds of unruly sounds.

This episode is filled with experiences of different phenomena, all with their own particular flavor. In everyday experience, we are engaged in different activities with phenomena such as these. Husserl describes our attitude towards them as "a natural attitude" (Husserl 1982 [1913]). We do not question that there are different things and different activities. They just are there, whether we like it or not. But if we want to understand the experiences that the natural attitude comprises, then we cannot take these for granted any longer. It would be a fallacy to assume that there just happens to be a world out there of which we are conscious. As we take a step back – not to deny the reality of these experienced phenomena, but to interrogate into the conditions of these experiences – we shift to *a phenomenological attitude* where we pay attention to the way in which these experiences appear, or how they are given (Husserl 1982 [1913]).

Husserl's fundamental insight was that the phenomenological attitude unveils a correlative structure between subject and object: an act of being directed towards something (Husserl 1970c [1900/1901], 1982 [1913]). Following his mentor Franz Brentano, this is what Husserl (and most phenomenologists after him) call intentionality. In the phenomenological attitude, we do not only note that there are these two poles in conscious experience, but also that they can vary independently. First, different types of objects are disclosed in different ways. Material objects have certain particular features in experience – they are given as spatially extended, as noted by Descartes. They are therefore numerable and finite. Other types of objects lack these features. No matter how many times it is used, the number *4* remains the same. It is independent of the enumerated objects: four books, four horses, four centuries, four ideas or four volts. A number is therefore (in experience) a different kind of object than, say, a canoe.

Not only the type of object can differ, but also the same intentional object can be disclosed in different ways, in different types of *intentional acts*. For instance, an elephant can be given in many different ways: it can be perceived by our senses, all with their different ways to *present* (*Gegenwärtigung*) an elephant or it can be *re-presented* (*Vergegenwärtigung*) as imagined or recollected from memory, i.e. given as not actually present. Moreover, there are different ways to *re*present (*Repräsentation*) an elephant: visually as a painting or a photograph or symbolically in the different modalities of language. As attention is turned to these different ways to intend an elephant, differences between kinds of intentional acts are elucidated. Each comes

with its own formal structure, its own conditions for bringing objects into awareness. Among the different types of intentional acts, perception is the most fundamental. In perception, intentional objects are disclosed at the fullest: it is the "intuitive mode of experience par excellence" (Gallagher and Zahavi 2008: p. 91). When I say *elephant* to denote elephants, then the intentional object is evoked in a much more schematic and abstract way than in perception. For this reason, Husserl systematically insists on the difference between these different modes of givenness, including (at least) *presentations, re-presentations* in imagination and memory and *representations* in different material forms such as pictures, gestures or words (Sonesson 2012).

We can also use the minute phenomenological analysis of intentionality to point out some of the structural differences between linguistic and non-linguistic experience. In doing so, we can avoid the pitfall of equating experiential motivations with linguistic meanings without losing track of their close connection. While meaning is present both in perception and language, the two differ in terms of givenness. Sonesson (1989) provides a general phenomenological criterion for differentiating signs such as words and pictures in general from experiences unmediated by signs. Signs introduce a differentiation between the directly perceived, the material *expression* (*signifiant*) of sounds or letters, and what is thematically focal, the *content* (*signifié*) or meaning. In other words, there is an order of dependence such that the expression is taken as something that stands for the content. The word *elephant* represents or stands for actual elephants and not the other way around. Due to this distinction, it is constitutive of the sign experience that the expression does not seamlessly fade into the content or vice versa. Perceptual experience differs: there is nothing standing for something else. The elephant is perceived as an elephant, i.e. we are presented with an elephant. In perception, there are no sharp boundaries between this and that. Of course, this is not to say that a physical entity as an elephant cannot under some circumstances be a sign for something (or that a written word cannot be perceived as dots on a paper rather than as a sign for something). The point is rather that there are formal differences between perceiving something as a sign and perceiving it in its own right. This difference between experience mediated by signs and unmediated experience can be explicated by two senses in which perception is continuous and never fully exhausted.

Firstly, a particular presentation of an object does not unveil an object in its totality, but with a particular profile of the object. Right now, I am sitting at a table. I see the flat surface, the topside, of the table. But the table also has an underside and it stands on legs, and so on. There are several at this moment unavailable, or *absent*, profiles of the table, which by shifting my perceptual awareness, and my position, can become present. Even if they are absent (i.e. not currently presented profiles of the table), they still partake in the perception of the table. It is for this reason that I perceive the table as a three-dimensional object and not as a two-dimensional surface. This principally endless continuity gives the perceptual object an inner "horizonal"

structure: it can always be disclosed more and more (Husserl 1982 [1913]: § 44, 1975 [1939]: § 8).

Secondly, the perceived table stands out from a background of other objects of which I am not focally aware. They are at the background, or in the "margins of consciousness" (Gurwitsch 1964 [1957]). However, with a mere tilt of the head, the previously thematic table recedes to the background in favor of the lamp standing on the table. Any perceptual experience is thus co-constituted by all possible perpetual presentations that are available to me (and to anybody else in a non-trivial sense). Perception is therefore characterized by a general, outer intentional horizon, an endlessness and continuity.

In one respect, linguistic categories and linguistic meaning lack these properties of perception. Utterances are composed of serially sequenced "discrete" elements such as sentences, phrases, words, etc. The semantic meaning of linguistic elements are, as discussed earlier, schematic and more or less abstract – compared to the richness of perception. At the same time, there are similarities between language and perceptual experience, in that words also have their "horizon" in the other expressions that are used in the utterance, those that are not used but could be (and thus stand in paradigmatic opposition), and the background of practices.[6]

With respect to *perspective* there is also a similarity and a difference. In language and in perception we always take a perspective on things. While there is a degree of freedom in linguistic construal (choice of alternative constructions and expressions etc.), the resources are (largely) conventional and socially shared. This means that linguistic resources come with their typical and generic perspective not specific to anyone in particular, while perceptual perspective is more intimately connected to an individual, embodied subject.

3.2 Genetic phenomenology

As the phenomenological program developed, Husserl became aware of the limitations in the static analysis of intentionality. Even if it allowed for descriptions of the relation between subject and object, it could not account for how this relationship emerged in the first place. What are the conditions for intentionality itself? To answer this, Husserl turned his attention to how the directedness of the mind was possible in the first place, *genetic phenomenology*. Thompson (2007) summarizes this as follows.

> Unlike static phenomenology, genetic phenomenology does not take the already disclosed intentional object as its point of

[6] I owe this remark about language as also structured within a "horizon" to Andreas Widoff.

> departure, nor is it content to stay at the level of analyzing formal and constitutive structures of experience. Instead, it investigates the genesis and development of those structures themselves. After all, we do not simply drop into the world and open our eyes and see. What we see is a function of how we see, and how we see is a function of previous experience. For genetic phenomenology, what we experience is not a fixed given but something that has come to be given – something *emergent* – out of previous experience (Thompson 2007: p. 29).

Intentionality itself has an origin or a genesis. Prior to any active and deliberate engagement, we are always-already affected by the very fact that our bodies are motile or that experiences follow upon one another in time. These factors are not a matter of turning oneself towards the type of directed meaning acts, as in the cases discussed above. Rather, such directedness presupposes a prior engagement with the world: what Husserl called *passive genesis*. This is not to imply that we are passive in the sense of static or indifferent, just waiting to be acted upon. We are passive in the sense of being subject to involuntary influence and affection. In this way, Husserl proposed that reason and reflection presuppose a "deeper and more fundamental openness to the world":

> It is an openness to being sensuously affected and solicited by the world through the medium of our living body, and responding by attraction and repulsion. Investigating these sensorimotor and affective depths of experience leads phenomenology to the notion of passive genesis. In passive genesis, the lived body constitutes itself and its surrounding environment through the involuntary formation of habits, motor patterns, associations, dispositions, motivations, emotions and memories. (Thompson 2007: p. 30)

By speaking of the living body as responding affectively, Thompson highlights the fact that our engagements are not neutral. This is a sense in which passive genesis is all but passive: it is rather based in an immediate pre-predicative affectivity that imbues experience. The French phenomenologist Maurice Merleau-Ponty (1963 [1946]) described this elegantly as things in the world "get a grip on us". Pre-intentionally, I do not intend the object and thereby constitute it in intentional acts. It is rather the other way around. Our experience is such that we are either drawn to something or repelled by it.

As a matter of fact, we already practiced a bit of genetic phenomenology in Chapter 1. I argued for the importance of distinguishing observed motion from lived motion. Our own motility is an indispensable condition for experience. The perceptual horizon discussed above can function *simply because* we can move our own

bodies. It is through our own movements that perceptual experience becomes endless. This should not be read in the sense that capacities to think require capacities to act, but that perception is effectuated by motility.

We can also relate this to the discussion of linguistic meaning as motivated from sensorimotor interactions with the world. As discussed above, Langacker draws a connection between the concreteness of visually shifting attention and the tendency to express static configurations with a Motion-verb. In one sense, this can be seen as belonging to genetic phenomenology: to follow a moving object, the eyes and the head move. This is a sense in which you are always already affected by the motility of the living body. However, since this is a condition for all perceptual experiences, I will argue that it is only one of several distinct motivations for the use of sentences expressing non-actual motion. Chapter 6 returns to genetic phenomenology in more detail as I engage in reinterpreting proposed explanations for non-actual motion in language.

3.3 Generative phenomenology

While Husserl himself never proposed a third stage of phenomenology distinct from static and genetic, he did use the word 'generative' with its double meaning: "the process of becoming and the process of occurring over generations" (Thompson 2007: p. 33). Construed as a distinct phase of phenomenology, the phenomenological analyses of intentionality and the living/moving body were supplemented by the notion of the *life-world* within generative phenomenology. Everything that can be experienced belongs to the life-world: human beings, natural environments, artifacts and tools, artworks, social media, etc. In short, all experienced phenomena are part of the life-world. The life-world has two constitutive features: (i) it is intersubjective in its nature and (ii) it is relative to human beings. With respect to the former, Husserl writes:

> In whatever way we may be conscious of the world as universal horizon, as coherent universe of existing objects, we, each 'I-the-man' and all of us together, belong to the world as living with one another in the world; and the world is our world, valid for our consciousness as existing precisely through this 'living together.' We, as living in wakeful world-consciousness, are constantly active on the basis of our passive having of the world [...] Obviously this is true not only for me, the individual ego; rather we, in living together, have the world pre-given in this together, belong, the world as world for all, pre-given with this ontic meaning. (Husserl 1970a [1936]: p. 108-109)

As can be seen from this quotation, the life-world is phenomenologically different from everything else: it is not an object to be constituted in intentional acts. Instead, the life-world functions as a "universal horizon" which means that it cannot be "mine" or "yours", but intersubjectively constituted and recreated across generations. With respect to (ii), the life-world is not the physical, objective world. Neither can it be explained by such terms. The relation is rather the reverse: to speak of a physical nature in itself is an abstraction attained by an objectifying attitude which itself is an attitude *within* the life-world.

To speak of a universal horizon should not be mistaken for a pancultural *de facto* world that is the same to all who have ever lived and will live. There are of course differences between the actual world of a Neanderthal and that of a contemporary European. In a life-world where there are airplanes, crossing the Atlantic Ocean is something you can do, but is not possible in a world without them or a similar means for transportation. In the most general terms, this means that the life-world is *pregiven* as a "ground" (*Boden*) and "horizon" (*Horizont*) for all experiences. Husserl often uses these terms to characterize the life-world. In using these terms, two worldly features are evoked: the world is separed from the sky and it is the earth we tread. Thompson (2007: p. 35-36) explains these two metaphors further:

> Anything that comes forth, manifests, or emerges does so in an open clearing or expanse, delimited by a horizon. The horizon of every possible horizon is the world […] The life-world as ground [is] the pregiven soil out of which everything is generated and nourished. This soil includes one's forebears and culture. We human beings constitute and reconstitute ourselves through cultural traditions, which we experience as our own development in a historical time that spans the generations.

From this quite general view of the life-world, what Steinbock (1995) considers transcendental concept (i.e. as a condition for knowledge and experience) of the life-world, it is of course possible to derive different more specific concepts. For instance, Husserl himself spoke about Europe as a life-world with a shared history and shared culture (Husserl 1970a [1936]), which arguably could then be opposed to other cultures. The sociologist Alfred Schutz developed a social reading of the life-world from whom we have the catchphrase of the life-world as "taken for granted" (Schutz and Luckmann 1973). Sonesson (2010) connects the life-world to James Gibson's ecological psychology (Gibson 1982). Per this reading, even the "natural" world that we experience is not the world of the natural science, but relative to subjects and perceived from a particular point of view (Sonesson 2010). One thing common to these different interpretations is that there are regularities (or "types" as Schutz call them) in the life-world. We take things to behave in ways that are stable over time. When they do not, it is rather the thing that is an exception than our expectancy that was flawed. When I refer to the life-world in the following, I will have in mind a

general notion of the experiential world that we live in that is both constituted by human experience and constitutes it in return.

Through the notion of the life-world, we can bring together some of the themes that have recurred in this chapter. One of these is the relation between linguistic and extra-linguistic knowledge (Coşeriu 1985; 2000). Since linguistic practice is always situated in the life-world, the relevant structures of the latter will be presupposed and constitute the "common ground" (Clark 1996). In this way, we can expect language to be situated in a life-world taken for granted rather than reflecting mental conceptualizations. This general attitude to language will recur frequently throughout the book and is something that I return to in more detail in Chapter 6. Moreover, the notion of the life-world helps in providing the concepts of Holistic Spatial Semantics presented in Section 2 with a straightforwardly phenomenological interpretation: semantic categories are thematic meanings, covert expressions result from the (inner) horizon of the interrelatedness of objects in a given situation, and the background of practices evokes a particular subset of the life-world.

Even with the phenomenological connection to HSS spelled out, there still remains the tension between the meaning and experiences of life-world situations, and the conventions of language. In the enigmatic and almost cryptic text *Ursprung der Geometrie* (1970b [1936]), Husserl attempted to deal with this tension – reminiscent of the discussion of language as both motivated and conventional, as both experientially grounded and as an independent sphere with its own principles.[7] Husserl begins by stating that "meaning itself must have an origin in accomplishment: first as a project and then in successful execution" (Husserl 1970b [1936]: p. 159). For there to be an executable project, there must be those carrying it out. But, Husserl notes, meaning as handed down through time is inconsistent with such a view. Meaning is not constantly rediscovered or changed with every new generation. On the contrary, many things remain constant throughout time. Following Coşeriu's (2000) point about signification, language does not change willy-nilly. Even if designations differ and semantic changes occur, a word is one and not many.

---

[7] Husserl's aims for engaging in this discussion are different from mine. For Husserl, the problem is that of vindicating science and philosophy from a perceived "crisis". According to Husserl, science at the time of writing *Origin* had lost the connection to its origin in the life-world. Husserl's own example is that of geometry as founded in the life-world practices of measuring and dividing land. However, geometry is still a functional discipline independent of this connection. His analysis is directed both at explicating how this oblivious state is possible while science seems to flourish and to present a solution to this crisis where language takes on the role of medium transmitting meaning without reference back to the origin. These ponderings over knowledge as a historical phenomenon is something that came to Husserl's attention quite late in life and is in many respects underdeveloped (cf. Steinbock 1995).

How can this "ideal objectivity", the same meaning, be presented over and over again through history, if meaning originates from the acts of subject(s)? Husserl answers that language makes repeatability and sharing of meaning possible. By virtue of being linguistically represented, the value of the experience itself is somehow diminished and overridden in favor of other features such as communicability, transmittability and iterability. In other words, one can grant any experiential account the benefit of the doubt: linguistic meaning might to a substantial degree be motivated from experience, but once the meaning has been established and made conventional these motivations play no functional or operative role in maintaining and upholding linguistic meaning. This is reminiscent of Itkonen's (2008a) argument for the central role of normativity. The motivating experience must somehow be ordered into language where it takes the form of something possible to share through "endless repetitions". The fully-fledged experience does not live on in language. It is not lost, but language grants the possibility to transmit meaning without the motivation being "active".

> There exists a kind of activity, a thinking in terms of things that have been taken up merely receptively, passively, which deals with significations only passively understood and taken over, without any of the self-evidence of original activity (Husserl 1970b [1936]: p. 161)

Even if Husserl readily accepts that linguistic meaning is motivated, he breaks path with the view that the conventionalized meaning is similar to its original motivation. On the contrary, by taking linguistic form, meaning principally breaks with its origin in such a way that one need not understand its motivation or the conditions that enabled the form in the first place. In other words, what happens when meaning becomes conventionalized in language (or some other system of signs, cf. Sonesson 2007) is that the ability to transmit meaning through space and time becomes strongly enhanced, at the expense of losing some of the connection back to its motivation. While building upon an experiential ground, the linguistic form itself attains over time what the French phenomenologist Paul Ricoeur (1992) called "suspension of attribution". As a testament to the independence of language from any specific *hit et nunc*, it reaches the status where the conventional forms have a life of their own: they need not be attributed to a concrete situation in the world, but live as independent entities, so to speak. It is here we can speak of the iterability and ideality of linguistic forms and hence of grammar and semantics as knowable through the

methods of "autonomous linguistics", as emphasized by Itkonen.[8] However, Ricoeur, just as Husserl, maintains that there is a link back to the "founding activity". This link will over time become buried under strata fashioned by history: language has built upon its experiential motivation to the degree that the latter has become *sedimented*. In evoking this geological metaphor, we are made aware of the immediate and tense connection between process and state, between motivation and convention.

Apart from pointing out the sedimentation of originary motivations, Husserl also emphasized the necessary re-structuring of experience in language, as expressed by Woelert (2011):

> [S]edimentation refers to a consolidating process of linguistic conceptualization, in the course of which the evident cognitive structures originally given in embodied sense-experience have certain 'persisting linguistic acquisitions' superimposed on them (Husserl 1970b, p. 362). In particular, through sedimentation, linguistic concepts become more and more an immediately available, unquestioned (and sometimes even unquestionable) element of the language user's conceptual repertoire. (Woelert 2011: p. 119)

To sum up, Husserlian phenomenology, in its static, genetic and generative forms, and in particular the concept of sedimentation, shows ways to reconcile some of the apparent contradictions discussed in this chapter. For example, it is possible that conventional expressions sediment not only what, but also "how" something is meant, opening the door to combine aspects of meaning that are both motivated and conventional.[9] In this way, I will argue that both the proponents of conventionality (Coşeriu, Itkonen) and those of pre-linguistic experience (Langacker, Talmy) are in some ways correct.

---

[8] Itkonen (2003) speaks about the intuition-driven approach to linguistics as "autonomous". Following Ricoeur's reasoning, this autonomy would then ultimately be relative the phenomenological ground on which it rests. Zlatev (2010) also characterizes Itkonen's approach as compatible with phenomenology.

[9] The same can be said of all markers of "the presence of man in language" (Benveniste, 1966), such as the use of deictic expressions, direct speech etc. (cf. Brandt 2013)

4. Methodological considerations

The discussions presented in the chapter on language and experience, their immediate connection and their important differences are largely in the service of attaining a sound conceptual and theoretical framework. The merits of the perspective presented in this chapter should therefore be measured against the success of the empirical studies it informs. With this theoretical point of view in mind, I end the chapter with some methodological considerations that point forward to the elicitation-based studies presented in Part II and Part III.

There has lately been a renewed interest in a principal discussion going back to the wake of psychology as a scientific discipline (Jack and Roepstorff 2003). This discussion concerns the difference between *first-* and *third-person methods*. On the latter view, we gather measureable data that can be correlated with a particular *explanandum*. For instance, we can get our data from corpora and analyze it according to some research question. The data that we measure and quantify can be compared with the research question we set out to investigate. The results can then either confirm or disconfirm the hypotheses posed. With a first-person method, we do not gather measurable data. Instead, our method is to rely on our own intuition and knowledge. As speakers of a particular language, we know what words mean or what is grammatical and what is not. These pre-scientific judgments can then be used as the linguistic data. First-person methods are often criticized as subjective or introspectionist, whereas third-person methods are objective, quantifiable and repeatable (cf. Dennett 2003) However, third-person methods can also be seen as hiding the researcher's indispensable contribution to the study in question. The questions posed, the design and the analysis of the data all emanate from thinking and feeling human beings rather than from disengaged observers. Portrayed in this way, these two kinds of methods are of course a bit rough around the edges. Any particular study is never fully one or the other, but involves a combination of first- and third-person methods (Zlatev 2008).

The studies of actual and non-actual motion in this book are based on gathered descriptions of visually represented situations from native speakers of Swedish, French and Thai. This method is often called *elicitation* – a common and well-established method in cross-linguistic research. Elicitations can be seen as a way to keep the domain (i.e. the "extension" in the parlance of analytical philosophy) intact across various languages. From an elicitation, we only get a picture of "how do you say x", but we do not get the full range of what the words, constructions and descriptions can

mean (the "intension").[10] This means that the data, results and conclusions will at least to some extent be dependent on the stimuli set for the elicitation. As long as this relative restriction is kept in mind and the elicitation tool is well-designed, this should not pose a problem in providing a general picture of how speakers of a particular language describe the domain in question. This picture is of course not complete and there will always be the need to fill in the blanks.

From the perspective of first- vs. third-person methods, how should elicitations be placed? At first glance, elicitation is a third-person method. We get many different people to describe something and then we compare their descriptions according to a particular analysis of these descriptions. However, this is not an objective third-person method. The analysis must fall back on his or her knowledge of the language under study and on a certain analytical framework. This is not an innocent and uncontestable choice, but something that informs research from the get-go. It would be wrong to see this cynically; it is rather an insight to care and take responsibility for. One particular way which can resolve the shortcomings of too strongly emphasizing only a first-person or only a third-person perspective, is through acknowledging a second-person perspective (Thompson 2002). Such a point of view involves many different facets. Firstly, empathy and understanding with the persons that participate in the study. How do they experience the task and how does it affect them? Secondly, intersubjective corroboration between researchers that through collaboration achieve better and more refined analysis. Thirdly, openly and honestly sharing the entire process from research question to conclusion with the audience. (It is up to the reader to decide if I have succeeded with the final aim.)

In this way, the elicitation method will involve components of both first- and third person methods, complemented by a second-person perspective. The results presented in subsequent chapters are therefore not only a presentation of the descriptions provided by the participants, but also complemented by native-speaker intuition of the researchers analyzing the material and their collaboration (see Chapter 4). We can relate this to the aforementioned linguist Coşeriu (1985), who pointed out that there is not one true perspective on language, since it involves activity (*energeia*), knowledge (*dynamis*) and product (*ergon*). These three perspectives are interdependent: the activity of speaking or writing creates an utterance or a text, which presupposes knowledge without which it would not be language. A linguistic

[10] The famous research on "basic color terms" summarized in Berlin and Kay (1969) has been strongly criticized for drawing too strong conclusions on the basis of a method that only takes the extension into account. Berlin and Kay wanted to refute the relativist claim of high degree of variation and even incommensurability between languages. However, their method was based only on the denotation of color terms to a scientifically defined notion of color. This left out how color terms are used in specific languages and what type of situations they can describe. See Lucy (1992), Saunders (1995) and Wierzbicka (2008) for a critical evaluation of Berlin and Kay's research.

investigation can focus on any of these perspectives (cf. Zlatev 2011). In the case of an elicitation, we have transcribed data produced by speakers with knowledge of their language. In approaching this material, the analysis will correspondingly involve elements of treating it as product and as knowledge.

These methodological considerations are by and large consonant with the phenomenological perspective opted for in this chapter and in this book as a whole. In this way, I propose a tight interplay between conceptual elucidations, theory and empirical research. Showing this in the domains of actual and non-actual motion can be seen as the main theme of the remaining journey.

Part II
Actual motion

Chapter 3
Motion semantics, linguistic typology and the experience of motion

Any viable account should illuminate why Talmy's typology is so close to being right.
Beavers, Levin and Wei Tham

Motion is a well-studied domain in contemporary semantics and linguistic typology. This profiled position is by and large due to the influential work of Leonard Talmy. In the 1970s and 1980s, he proposed a semantic analysis of the features involved in expressing motion (Talmy 1975, 1985). As the semantic framework was later applied to different languages, Talmy proposed that it could be used to form the basis of a general linguistic typology. According to this typology, languages fall into one of two types (Talmy 1991). We have illustrated this difference in Chapter 1 with the Spanish and Swedish sentences in (1) and (2), cf. Talmy (1985: p 69).[11]

(1)	La	botella	**entró**	a	la	cueva	(flotando).
	DET.DEF.F	bottle	**enter.PST**	to	DET.DEF.F	cave	(float-PTCP)

(2)	Flaska-n	flöt	**in**	i	grotta-n.
	bottle-DET.DEF	float.PST	in	in	cave-DET.DEF
	'The bottle floated into the cave.'				

In Spanish, the spatial transition from outside to inside the cave, called *Path* in motion semantics (Talmy 1985), is expressed in the verb root *(entrar*). Swedish uses a different way to express the same state-of-affairs. How the bottle moved, *Manner*, is expressed in the main verb root, which leaves Path to be lexicalized outside of the verb root in a verbal associate (adverb): *in*. By lexicalizing Path in the verb root, Spanish can omit the Manner of motion, or express it in an optional gerund, *flotando*

[11] Please note that the spelling and pronouication of the verb in example (1), Talmy's own, seems to be based on Spanish as spoken in North America. However, this does not affect the point he wants to make.

('floating'). This difference is considered as the basis for the two possible ways to "frame" a so-called motion event, either in the verb root or in an associate to the verb root, a so-called *satellite* (Talmy 1991). Given this difference in the realization of motion, Talmy claims that languages are expected to prefer one of the two strategies and that we can therefore speak of a binary semantic typology of motion. Today, his work has seen wide-ranging applications across various areas in linguistics.

> Work in this area has focused on a host of issues in the nature of lexical semantics and its relation to morphology and syntax, including possible verb and adposition semantics, argument realization, lexical semantic typology, and even linguistic relativity. (Beavers 2008: p. 283)

Due to its influence and straightforward character, Talmy's approach is the point of departure in Section 1. While the typology surely is "simple", i.e. a theory with a high degree of generalizability derived from a conceptual apparatus with few semantic categories, it is not without both empirical and conceptual problems. In fact, these issues are so comprehensive that the framework requires substantial revision. From cross-linguistic research beyond Indo-European languages, it has been argued that several languages fall outside of the binary typology, e.g. Thai (Zlatev and Yangklang 2004), Ewe (Essegbey and Ameka 2001) and Mandarin Chinese (Chen and Guo 2008). These studies have sparked a debate on whether all of these languages have some common traits that might be sufficiently uniform to make up a distinct third type in motion typology (Slobin 2004, 2006). A second difficulty concerns languages with the propensity to express spatial transitions without semantically expressing motion, e.g. Japanese (Kita 1999), Yucatec Maya (Bohnemeyer 2010) and Jaminjung (Shultze-Berndt 2006). These two challenges to motion typology highlight conceptual and analytical problems at the core of Talmy's typology. They are further discussed in Section 2. More specifically, I argue that the definition and delineation of motion are conceptually unclear and, in line with Holistic Spatial Semantics, that the analytical focus on the main verb and its immediate associates is unjustified.

Having surveyed motion typology and its problems, we see that the concept of motion requires further exploration and clarification. What is motion and what kind of motion is semantics and linguistic typology concerned with? To provide answers to these questions, I return in Section 3 to the distinction between inner and outer motion outlined in Chapter 1. From an experiential analysis, I argue that motion is both a broader *and* narrower concept than suggested in motion semantics. This leads up to the experiential taxonomy of motion proposed in Zlatev, Blomberg and David (2010). Expanding and adapting the discussion of Holistic Spatial Semantics presented in Chapter 2, I end the chapter in Section 4 with an alternative approach to motion semantics with implications for the analyses in later chapters.

1. Motion typology

The typology of Talmy (1991) is not only a classification of languages in a Linnaean sense, it also attempts to provide general criteria for positioning languages within the typology and for grounding it in a broader cognitive theory of conceptual organization. In this way, the framework is not only a linguistic-semantic analysis of motion, but also involves a conceptual analysis that attempts to root the typology in the cognitive categorization of motion. As discussed in Chapter 1, the point of departure for the typology is a distinction made by the French linguist Lucien Tesnière (1959).

> Tesnière (1959: 307-310) introduced in passing the semantic distinction between movement ('mouvement') and displacement ('déplacement'). Movement is 'inner' motion describing the kind of activity involved in motion (e.g. run, walk, jump, fly, swim). Displacement is 'outer' motion and is concerned with how somebody or something changes its location in space, notably with respect to a given point of reference. (Wälchli 2001: p. 298)

Motion-expressing verbs typically bundle motion together with semantic information about change-of-location or type of movement. In the terminology introduced in Chapter 2, they *conflate* the fact of motion with additional semantic categories. On the one hand, verbs that express motion also express the movement or the activity of the agent. They express what Tesnière (1959) called *movement*, or *inner motion*. According to the quotation given above, verbs of inner motion represent human or animate movement, but inner motion should, for linguistic and conceptual reasons, also include movements untypical or impossible for animate life, e.g. *oscillate* or *explode*. The common feature of such verbs is that they describe something which the moving entity itself undergoes. By virtue of being an activity in and of itself, this type of motion can be seen as inner.

On the other hand, motion is not only an inner activity. Motion-verbs also focus on the outcome of motion: the change-of-location in space. We see this in verbs like *enter* or *exit*, *arrive* or *depart* and *come* or *go*. In accentuating the outcome of motion, inner motion is downplayed. To exit is not concerned with how one moves; it is to translocate from the inside to the outside, irrespective of whether one stuttered, danced or ran. On these occasions, the Motion-verb expresses change in the spatial relation between a moving object in relation to a reference object or according to some other frame of spatial reference (see Chapter 1 and Section 3 of this chapter). The specific details of the activity are left unexpressed and the judgment of motion requires reference to that which the displacement occurs against. The motion is, in this sense, outer.

A similar reasoning informs Talmy's analysis of motion. Within his framework, the difference between inner and outer motion is phrased as a difference between the additional categories expressed by the verb. That is, which category is conflated, or co-expressed, together with Motion? Talmy proposes that four different semantic categories can do so: Manner (*roll*, *spin*), Cause (*throw*, *hit*) Figure (*rain*, *spit*) and Path (*enter*, *arrive*).[12] As mentioned above, this analysis was later used to formulate a binary typology of how these semantic categories map to different sentential constituents in the world's languages (Talmy 1991).

Particular details of the typology are quite technical and sometimes misunderstood – even in a course book on semantics such as that of Riemer (2010). Most importantly, the typology is not intended to cover all kinds of motion, but only a specific type: the kind of motion that leads to a change of location, what Talmy calls a *motion event* (Talmy 1985). In a motion event, "the location of the Figure changes in the time period under consideration" (Talmy 2000b: p. 25). Per this definition of motion event, it is clear that the concerns are outer motion. The Path information provides information about change of location. For this reason, it is the so-called *core schema* of a motion event (Talmy 1991, 2000b). Other kinds of motion, such as Manner-of-motion, are not part of the motion event, but instead exemplify what Talmy calls *co-events*.[13] Why does a Path-conflating verb like *exit* express the core schema of motion event and a Manner-conflating verb such as *roll* a co-event? The sentence in (3) has the Manner-verb *roll* together with an associate expressing Path, *down*. These comprise two conceptually separable forms of motion: one motion event and one co-event, as shown in (3'). The former handles the change-in-location; the latter expresses only that the Figure moved in some way or another.

(3) The rock rolled down the hill.
(3') [The rock MOVED down the hill] WITH-THE-MANNER-OF [the rock rolled].

(Talmy 2000b: p. 30)

Through this analysis we see that inner motion is irrelevant for the definition of motion events. The same state-of-affairs could be attained by a different Manner-of-

[12] Following the conventions of HSS (Zlatev 1997), I use a nomenclature where the initial letter (e.g. "Motion") is capitalized for semantic categories and a small letter (e.g. "motion") indicates the corresponding conceptual category. Small caps (e.g. BEGIN) are used to indicate values for the semantic categories (see Section 4).

[13] Co-events are not restricted to expressions of Manner, but also involve Motion conflated with Cause, i.e. Motion initiated by an external force, and Figure, i.e. Motion coinciding with the Figure itself (cf. Talmy 2000b: p. 27). When I speak of Manner in relation to Talmy's analysis, this semantic category should be read as exemplifying the broader conceptual notion of co-event and hence be analytically substitutable for e.g. a verb expressing Cause.

motion. Following the same principle as in (3), we see that the change to another Manner-verb in (4) does not affect the motion event itself (4').

(4) The rock bounced down the hill.
(4') [The rock MOVED down the hill] WITH-THE-MANNER-OF [the rock bounced].

This makes Talmy analyze motion events as comprised of the following four components:

- Figure: the moving entity (*the rock*)
- Ground: the reference entity (*the hill)*
- Path*:* location change (*down*)
- Motion (*move*)

The differentiation between co-event and a motion event comprises the core of Talmy's semantic analysis. As could be seen in (1) and (2) above, the semantic categories Path and Manner are mapped to different sentential constituents across languages. The typology is often illustrated with Germanic languages, on the one hand, and Romance languages (in general), on the other. As shown in (5), verb roots in Spanish can be seen as expressing Path and Motion without a "satellite" or a prepositional phrase complement (see below). To express these change-of-locations in Swedish, the Path-element is expressed in a particle or an adverb (6).

(5) Iago entra/ sale/ sube/ baja.
(6) Iago går in/ går ut/ går upp/ går ner.
'Iago enters/exits/ascends/descends.'

There are of course Manner-verbs in Spanish, but the "most characteristic expression" (Talmy 2000b: p. 27) of motion events is to conflate Motion with Path in the verb root, leaving Manner to be expressed in an optional constituent e.g. a gerund. In a Germanic language, the Motion-verb does not characteristically express Path, but Manner. This leaves the obligatory Path-information expressed "outside" of the verb root. At first glance, it might then seem as if Spanish conflates Path with Motion in the verb whereas Germanic languages express both categories: Manner in the verb and Path in a preposition. However, the typology is not particularly interested in the lexicalization of Path in a preposition such as in (7), a pattern found in Spanish as well, e.g. (8).

(7) Claudio springer **till** hus-et.
Claudio run-PRS to house-DET.DEF

(8) Claudio corre **a** la casa.
Claudio run.3SG.PRS **to** DET.DEF.F house
'The man runs to the house.'

Talmy is rather on the lookout for another feature: the expression of Path in "a constituent *other than a nominal complement* that is in a sister relation to the verb root" (Talmy 1991: p. 486; my emphasis). By virtue of being closely related to the verb root, this associate – *the satellite* in Talmy's parlance – can occur together with the verb without any additional associates, as in (6). In other words, a motion event in Romance languages is expressed in the verb root, but in Germanic languages it is expressed in a satellite together with a verb of Manner-of-motion. The former therefore "frames" the core schema of a motion event in the verb and the latter in a satellite: they are Verb- and Satellite-framed, respectively (or V- and S-framed for short). Let us pause for a moment at the notion of satellite. According to Talmy, the category encompasses quite a broad number of different form classes across languages.

> The satellite, which can be either a bound affix or a free word, is thus intended to encompass all of the following grammatical forms, which traditionally have been treated independently of each other: English verb particles, German separable and inseparable verb prefixes, Latin or Russian verb prefixes, Chinese verb complements, Lahu non-head 'versatile verbs', Caddo incorporated nouns, and Atsugewi polysynthetic affixes around the verb root. (Talmy 2000b: p. 102)

Through this inclusive view on satellites, it seems warranted to ask whether virtually any closed-class item can potentially be a satellite. Perhaps the way to understand satellites is not formally, but rather *functionally*. A satellite is not recognizable primarily as a recurrent form, but through the function it serves in expressing a motion event.

> A set of forms that can function as satellites in one language often overlaps partially, but not wholly, with a set of forms in another grammatical category in that language. (Talmy 2000b: p. 102)

There does not seem to be a theory-independent way to define when a form is to be considered a satellite and when not. Its exact meaning is intrinsically dependent on the framework in which it is formulated. Should particles and adverbs in Germanic languages such as Swedish and German be grouped together with verb-prefixes in Slavic languages such as Bulgarian and Russian? These languages all characteristically use resources outside of the verb root for Path, but the differences between them are

disregarded by treating them all as satellites. I will therefore refrain from using this notion when analyzing the Swedish material. In the particular case of Swedish, I follow Sjöström's (1990) and Zlatev's (1997) treatment of the Swedish verb associates as *adverbs*. How to analyze "satellites" in other allegedly S-framed languages is very much an open question.

Nevertheless, Talmy proposes that languages can be distinguished on the basis of which constituents Path is mapped to. We can illustrate the two framing patterns with semantic categories mapped to form classes as in (9) and (10). In Germanic languages, the verb conflates Manner and Motion with Path in a satellite, as in (9), whereas the typology describes Romance languages as shown in (10) where the main verb conflates Path with Motion. Since Path is the core schema of a motion event, this means that languages where Path is lexicalized in the verb root have no corresponding need for an additional obligatory constituent for Manner.

(9)	Verb	satellite
	Manner	Path
	Motion	
(10)	Verb	(gerund)
	Path	(Manner)
	Motion	(Motion)

The typology is not only intended to capture an illustrative difference between Romance and Germanic languages; rather Talmy (1991, 2000b) predicts all languages to predominantly express motion events as in either (9) or (10). Even if the components of motion events could logically be composed in any possible way, the lexicalization of Path is (a) obligatory for expressing a motion event and (b) exhibits clear constraints across languages. Manner is optional; Motion can be conflated with Figure (a pattern common in the now extinct Hokan language Atsugewi, see Talmy 1975), etc. In this variable landscape, the lexicalization of Path is consistently expressed in a satellite or in the verb root. This leads to two types of motion encoding: S-framed and V-framed. The cross-linguistic patterns of framing are illustrated in Figure 3-1 (adapted from Zlatev, Blomberg and David 2010).

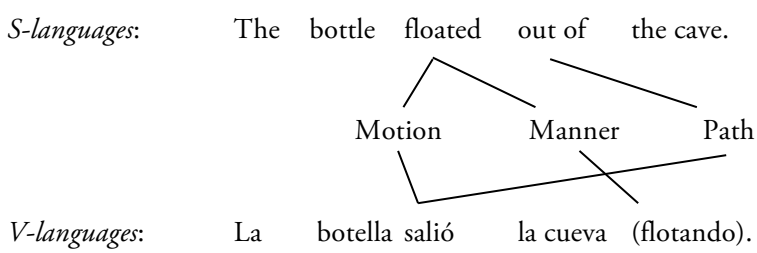


Figure 3-1. (Typical) conflation patterns in English and Spanish

- S-framed languages often have verbs that distinguish between fairly similar ways of movement, e.g. *walk*, *stroll*, *saunter*, *hike*, *amble*, etc. (Slobin 2003).
- S-framed languages are less constrained in the number of Landmarks that can be expressed per clause (Bohnemeyer, Enfield, Essegbey, Kita, Lüpke and Ameka 2007).
- V-framed languages use more static, scene-setting descriptions than S-languages (Slobin 1996).
- Since the verb frames the motion event in V-languages, Manner-verbs do not combine readily with expressions of state-transition in the same clause. When the main verb expresses Manner, the preposition is typically interpreted as expressing location rather than change in location (11). To then convey the sense of state-transition with *both* Manner- and Path-elements, V-languages express Path in the main verb and Manner in an optional sentential constituent such as a gerund in Spanish (12). This has been called the *boundary-crossing constraint of V-languages* (Slobin and Hoiting 1994).[14]

(11) La niña corrió dentro de-l jardín.
DET.DEF.F girl run.PST in/*into to-DET.DEF.M garden
'The girl ran in the garden.'

(12) La niña entró corriendo en el jardín.
DET.DEF.F girl enter.PST run.PTCP in DET.DEF.M garden
'The girl entered the garden running.'

The typology has since its formulation encountered objections and reports of contrary patterns. With respect to the V-framed pattern of Romance languages, Already Aske (1989) noted that the generalization of Romance languages as conflating Motion with Path seems to hold mainly when there is clear state-transition called "boundary-crossing" by Slobin and Hoiting (1994). In other contexts, however, the S-framed pattern of Manner conflated with Motion in the main verb root is not uncommon. The Spanish sentences in (13) and (14) are arguably classified as motion events in the

[14] Exactly what makes up a boundary is not always clear in the literature. In general, a boundary is two-dimensional rather than three-dimensional. Though it is often the case that the constraint is seen as moving into/out of containers, this need not be the case (cf. Bretones, Cristóbal and Ibarretxe-Antuñano 2001). To clarify what type of transition is involved, I will speak of *discrete and continuous forms of region-change* rather than boundary-crossing, of which (three-dimensional) region-change between inside and outside is a specific kind (see Section 4.3 and Chapter 4, Section 5.4).

Talmian analysis. Despite this, they both exhibit the S-framed pattern of Manner-verb together with a Path associate.[15]

(13) La botella **flotó** hacia la cueva.
'The bottle floated towards the cave.'
(14) La pelota **rodó** desde el tercer piso hasta el segundo.
'The ball rolled from the third floor to the second floor.'

(Aske 1989: p. 3)

Others have challenged the homogeneity of Romance languages as V-framed; for instance Iacobini and Masini (2006) argue that Italian quite regularly exhibits S-framed patterns, even in situations of boundary-crossing (I discuss and further qualify the notion of boundary-crossing under the concept of *Region-change* in Section 4.5). Today, the literature on intra-typological variation, especially within Romance languages is quite vast (cf. Berthele 2013).

Apart from intra-typological variation, recent research has shown that several languages do not conform to the predicted pattern of Path conflated either with Motion in the main verb root or expressed in an associate. As will be discussed in the following section, it has been suggested that languages with serial-verb constructions such as Thai conflate Motion with Path and Manner in independent verbs with equal syntactic status (Zlatev and Yangklang 2004). Kessakul (2001) argues that motion expression in Thai has "two faces": the Manner-verb is optional in expressions of "volitional" motion, but obligatory for caused motion events. In a volume summarizing research on space and motion in less investigated languages, Levinson and Wilkins (2006) report evidence of languages where the expression of change-of-location does not semantically entail Motion, e.g. Yucatec Maya (Bohnemeyer and Stolz 2006) and Jaminjung (Shultze-Berndt 2006). Contrary to Talmy's expectation, Motion and change-of-location are in these languages treated as two distinguishable parameters with some unexpected consequences for the expression of motion (See Section 2.2). I argue in the following section that these cross-linguistic variations are not anomalies to be accommodated at a later, more mature stage of Talmy's typology. On the contrary, they do not fit precisely because the conceptual framework has not clearly defined its operative concepts, including MOTION. I further argue that the expectation to find motion events expressed only in the verb root and/or satellite is insufficient since it takes only two elements – one of them not well-defined – of the entire clause into consideration. This makes linguistic analyses too focused on single forms – either verb or satellite – expressing either Path or Manner.

[15] Talmy could of course respond that Path in these Spanish examples is expressed in a preposition and not in a satellite.

2. Two problems for motion typology

The following section focuses on two main issues concerning Talmy's motion typology. Firstly, it has been argued that some languages express Manner and Path in verbs with equal grammatical status (Zlatev and Yangklang 2004). Secondly, contrary to Talmy's expectation, some languages seem to express change-of-location without expressing Motion, e.g. Japanese (Kita 1999) and Yucatec Maya (Bohnemeyer 2010). Both of these observations challenge motion typology by pointing not only to problems of an empirical nature, but also to fundamental conceptual issues and the general analytical approach to semantics within the Talmian framework.

2.1 "A third way to travel?"

In Talmy's model, typological belonging is based on whether Path is realized in the verb root of the main verb or not. Many languages have serial verb constructions (SVC) or verb-verb compounds, with ramifications for Talmy's typology. This type of constructions can be found in languages from a diverse set of families such as Niger-Congo, Hmong-Mien, Austronesian, Sino-Tibetan and Tai-Kadai. In the Thai sentence in (15), Motion is expressed in four separate verbs stringed together in an SVC. In a clause with more than one verb, Talmy (2000b, 2009) suggests that one is the main verb and the remaining verbs are either required or optional associates to the verb. Dependent on which, the prediction would be that the former case makes up an S-framed pattern and the latter a V-framed pattern.

(15)	chán	**doen**	**khâam**	thànoˇn	**khâw**	**pai**	naj	suaˇn.
	I	**walk**	**cross**	road	**enter**	**go**	in	park

'I walk across the road and into the park.'

(Zlatev and Yangklang 2004: p. 160)

In (15), four verbs of arguably three different types are used to express Motion in the same clause: the Manner-verbs *doen* ('walk'), the Path-verbs *khâam* ('cross') and *khâw* ('enter'), and the Deictic verb *pai* ('go'). These verbs form an SVC, but they can occur either independently or together in different combinations, but following the pattern of Manner > Path > Deixis (Zlatev and Yangklang 2004). This suggests that a determinate pattern of main verb + secondary verb is hard to discern. Since all verbs are independent and have equal grammatical status, there are no criteria for determining main verb status vs. optional or obligatory constituents. By extension, Thai behaves both as a V-language and as an S-language; since Path is expressed in verbs, it should be grouped as a V-language. At the same time, Thai shares with S-

languages a rich inventory of Manner-conflating verbs and, as seen in (15), can combine Manner-verbs with Region-change/boundary-crossing.

Based on Mandarin Chinese and Lahu, Talmy classifies verb-serializing languages as S-framed (Talmy 2000b, 2009). In other words, Talmy proposes that the verbs following the Manner-verb are in fact satellites to the verb. This shows the plasticity of the notion of satellite in even greater detail.[16]

In contrast to placing serial-verb languages in either the V- or S-framed type, Slobin and Hoiting (1994: p. 502) argue that "languages like Lahu [should] be reclassified as complex verb-framed types". In a subsequent article, Slobin (2004) elaborates on this reasoning. It is suggested that the S- vs. V-framing is unable to handle SVCs and that a distinct third framing type should be introduced: *equipollently-framed languages* (E-framing). In this type, motion event and co-event are expressed in forms with equal grammatical status. The question is the extent to which E-framed languages can be defined homogeneously and whether several different such strategies exist. While Slobin (2004) opts for the latter, this suggestion is not well-motivated and has not been met with general acceptance. How to classify verb-serializing languages and how to progress with motion typology is a question where no clear consensus has been reached. Chen and Guo (2008) and Xu (2013) present support for E-framing in Mandarin Chinese while Talmy (2009), with a specific focus on the same language, elaborates on a set of criteria for locating and limiting main verb status to a single verb, hence upholding the binary typology. Others have tried alternative approaches where the typology is loosened up. Slobin (2006) considers the gradient variation in Manner-salience as a typological cline while Ibbarexte-Antuñano (2009) makes a similar treatment of Path. On the basis of its problems, Beavers, Levin and Tham (2010) propose the radical conclusion that Talmy's typology is "an epiphenomenon". Along similar lines, Croft *et al.* (2010) suggest that we should speak of construction types rather than language types.

These debates are not only a matter of working out the adequate semantic and grammatical analysis, but to a large extent determined by conceptual and analytical matters. With respect to the semantic classification, the categories of motion event vs. co-event are so broad that various forms of motion are left without clearly belonging to either category. For example, there are verbs that express change of location without expressing a spatial end-point or a particular Manner. Rather, they express the "vector" of motion, e.g. *come*/*go* and *ascend*/*descend*. Other verbs express the "shape" of a trajectory, e.g. *zigzag* or *curve*. Additionally, some verbs seem to conflate both Manner and Path. For instance, *penetrate* expresses both a forceful movement and transition in space. Corresponding differences can be detected in the semantic

[16] With respect to Mandarin Chinese, Xu (2013: p. 53) points out that the satellites listed in Talmy (2000b) are *optional* and the same meaning can very well be expressed solely by the verb.

information expressed by satellites. Some participate in expressing change-of-location (e.g. *in(to)*/*out (of)*), others beginning or end (e.g. *to*/*from*), and yet others express only a vector of motion (e.g. *down*/*up*). The semantic classification of these associates as expressions of Path is not based on semantic information mainly, but primarily obtained from the expectancies of the typology itself. To then impose a binary classification on the expression of motion across languages runs the risk of trapping semantic analyses in a ready-made dichotomy with a focus on a particular subset of motion without an independent motivation or a clear definition.

Let us take a few steps back and reconsider. The motivation for the terminological binarity can be sought through its basis in a conceptual analysis of motion. Talmy (1985, 2000b) suggests that Path and Manner verbs correspond to a conceptual differentiation similar to that between outer and inner motion. His preferred terms are *translational motion* and *self-contained motion*, respectively. The motion of the former kind occurs when "an object's basic location shifts from one point to another in space" (Talmy 2000b: p. 35). The semantic category of Path corresponds to the concept of translational motion, which suggests that the location of an object changes. Manner or co-event information corresponds to the latter type, self-contained motion, where "an object keeps its basic, or 'average,' location" (ibid: p. 35).

As a technical and operative definition for analyzing linguistic data and detecting cross-linguistic commonalities and differences, the distinction between translational and self-contained motion require further semantic, conceptual and experiential elaboration. Consider for instance the sentences in (16) and (17). They express motion situations somewhere in-between the two definitions of motion given by Talmy. To run in the garden is to remain within, but on the other hand, it is not analogous or similar to keeping one's basic location either. The motion in (17) involves a shift in basic location from one point to another, but is it translational in the sense of shifting location "from one place to another" (cf. the quote from Talmy 2000b above)? The distinction between self-contained and translational motion cannot satisfactorily delineate the two different forms of motion situations, experientially, conceptually or semantically.

(16) Puck runs in the garden.
(17) Othello sails South.

In sum, the Talmian typology of motion is shaken by the unclear status of serial-verb languages, but this problem also brings up conceptual and definitional issues in the analytic framework where key semantic notions such as Path and Motion, grammatical constituents such as satellite, and conceptual definitions such as translational motion are inadequately defined.

2.2 Change-of-location semantics

Languages where motion and displacement are semantically separable are a second challenge to Talmy's motion typology. In these languages, the experiential aspect of motion – as opposed to stasis – is demoted in favor of expressing change in spatial relations. Kita (1999) compared the English verbs *enter* and *exit* with their Japanese counterpart *hairu* and *deru*. The examples in (18) and (19) suggest that both the English and Japanese verbs can express the situation of entering a Landmark.

(18) John entered the room.

(19) Jon-ga heya-ni **hait-ta.**
John-NOM room-LOC **enter-PST**
'John entered the room.'

(Kita 1999: p. 309)

Despite the apparent extensional or referential overlap, Kita argues that the Japanese sentence differs from the English one by not explicitly encoding Motion. What in English can be seen as a verb conflating Motion with Path lacks the component of continuity in Japanese. For this reason, one could use *hairu* to designate situations where there is change of state but no motion.

> Motion is inferred in the pragmatic enrichment of the interpretation. What [(19)] encodes is that John was not in the room at one point, and John was in the room at a later point in time. (Kita 1999: p. 309).

The default interpretation of a Figure becoming located inside a Landmark is through the movement of the former. However, this interpretation is defeasible since the same expression is compatible with the movement of the Landmark. The sentence in (20) can be used both when a smaller square moves into a larger circle *and* when the reverse motion occurs, i.e. when the larger circle encapsulates the smaller square (see Figure 3-2). That is, the sentence in (20) does not differentiate between the two translations (20a) and (20b).

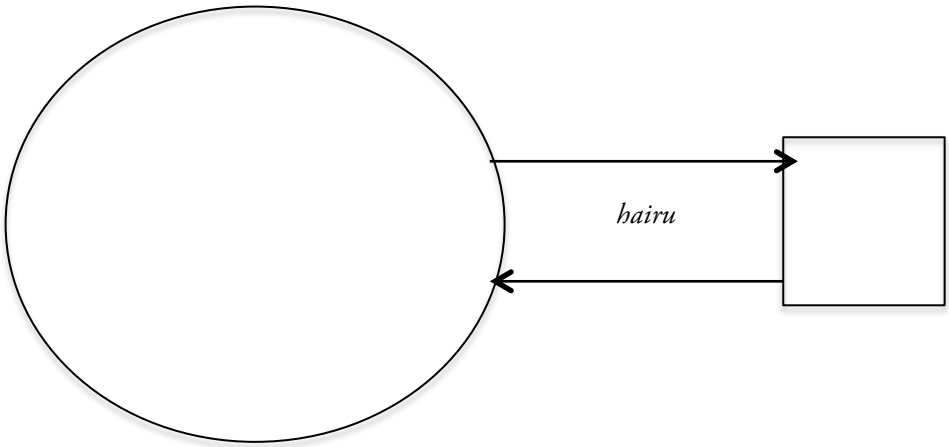


Figure 3-2. Representation of situation where a small square moves into a large circle or vice versa. (Adapted from Kita 1999).

(20) Shikaku-ga en-ni **hait-ta.**
square-NOM circle-LOC **enter-PST**
a.'Because the square moved to the left), the square came to be within the circle.'
b.'Because the circle moved to the right), the square came to be within the circle.'
(Kita 1999: p. 311)

Not only can the typical route of the Figure-Landmark relation be reversed, but *hairu* can also be used for change where no motion *qua* change-of-location is involved (21).

(21) Taro-ga totemo okina en-o kai-ta node
Taro-NOM very big circle-ACC draw-PST because

shikaku-ga en-ni **hait-ta**.
square-NOM circle-LOC **enter-PST**
'Because Taro drew a very large circle, the square was in the circle.'
(Kita 1999: p. 311)

In addition to the defeasibility of a moving figure, Kita (1999) claims that a progressive reading of *hairu* is incompatible with a transition in terms of entering or exiting. Thus, according to Kita, the verb codes the fact that a change of state has occurred, but not how it was brought about. From the perspective of everyday happenings and our knowledge of the world, it is of course the case that the expected scenario is that a person becomes located in a room through his or her motion and not through teleportation, by the room moving or through some other completely otherworldly process. In the terminology of Coşeriu (2000) discussed in Chapter 2,

we could say that the signification of *hairu* does not differentiate between the two designations of (i) Motion leading to change of location and (ii) change of location without Motion.

Another type of verbs without Motion is found in Maya as spoken in Yucatán and parts of Chiapas, Belize and Guatemala (Yucatec-Lacandon) (henceforth, YM). Verbs for expressing change in location exhibit in YM punctual aspect and can occur only with specification of one Landmark bounding the spatial transition, either in the beginning (*from*), the middle (*through*) or the end (*to*) (Bohnemeyer 2010: p. 117). In other words, change of location bounded by several Landmarks must be broken down into several clauses where each clause specifies change of state rather than continuous motion from location to location. In (22), a scene where a ball rolls from a tree, passes a dip and goes on to a hill requires three distinct clauses where each specifies a single spatial transition.[17]

(22) **H-luk´** y=iknal le=che´=o´
leave at DET=wood

káa=h-táal u=ba´+páaach-t-ik le=áaktúun=o´,
come back DET=hole

káa=h-k´uch he´l-el y=iknal le=búut'un=o´.
arrive rest= INC at DET=hill
'[The ball] left at the tree, [and then] came going around (lit. surrounding) the dip, [and then] it arrived to rest at the hill.'

(Bohnemeyer 2010: p. 127)

What is effectively shown in (22) is the function of verbs expressing change of location in YM. They define the location of a Figure with respect to just one Landmark: either at a source or at a goal state. Since only one landmark can be specified for each clause, the verbs do not provide a continuous reading of spatial transition. In other words, the verbs only code for the transition from one state to another, which is why Bohnemeyer *et al.* (2007) call them "inactive verbs". The verbs express only Path (in the sense of specifying beginning, middle or end) but not Motion (see Section 3.4). Hence, in contrast to Talmy's prediction, the spatial transition is expressed without Motion. When Motion is expressed in YM, the verb is "active". Its co-occurrence with a Landmark, however, cannot coincide with the Figure changing its location with respect to the Landmark. Instead, the only available

[17] The glossing of YM is simplified vis-à-vis the detailed and complex coding in Bohnemeyer (2010).

interpretation is that the activity of motion occurs at the site of the Landmark, cf. (23).[18]

(23) Le ch'íich'-o' túun **xíiknal** y-óok'ol le che'-o'.
DEF bird PROG **fly** top DEF tree
'The bird is flying [i.e. circling] above the tree.'
(Bohnemeyer and Stoltz 2006: p. 582)

In sum, some peculiar properties of motion encoding in Japanese and YM are problematic to the underlying assumption of spatial and temporal continuity in expressing change-of-location. One way to phrase this is that these languages make a clear semantic separation between inner and outer motion.

Is it possible to accommodate change-of-location and Motion in YM and Japanese with another view on motion semantics? Following the framework of Holistic Spatial Semantics introduced in Chapter 2, it can be expected that languages differ in *how* semantic resources are selected and combined for expressing spatial meaning. Due to its emphasis not only on individual form classes, but also on the sentence as a whole, an alternative interpretation of YM and Japanese is possible. In Japanese, enter- and exit-verbs are the verbs exhibiting least Motion encoding. These verbs differentiate between states at two different *Regions* at the endpoint of Path.

Enter-verbs: Change of location → Region: INSIDE
Exit-verbs: Change of location → Region: OUTSIDE

As verbs expressing outer, relational motion, they are, as Bohnemeyer rightly notes, less active. Arguably the same thing could be said about Path-verbs in general, but what is particular about YM and Japanese is that the semantic connection to Motion is defeasible. The verbs leave the category of Motion, for lack of a better word, to pragmatic inference. This does not entail that the verbs do not express Path. In accordance with the basic assumptions of Holistic Spatial Semantics (see Chapter 2), they express Path (change of location) without Motion (cf. Zlatev 2007). In the technical parlance of HSS, Path is *overtly* (i.e. semantically) expressed but is Motion *covertly* expressed (i.e. pragmatically inferred). Many languages tend to express change-of-location with both Motion and Path, but languages such as YM and Japanese appear to have verbs with a semantically diminished bond between the two categories. This strongly indicates that Path and Motion are two distinct categories in the expression of change-of-location. The presupposition that Path and Motion go

[18] Levinson and Wilkins (2006) suggest that Tzeltal, another Mayan language, and Yélî Dnye can be analyzed similarly to YM.

hand in hand is inherited from the definition of motion events as always involving both Path *and* Motion. If Motion is conceptually separated from Path, then it is possible to express spatial transition without Motion. As I will return to in Section 4, Path can be defined *schematically* (Zlatev 2007), i.e. as a category that specifies change-of-location with respect to the values beginning (BEG), middle (MID), end (END), or else as specifying a location (PLACE). Defined in such a way, the relevant verbs of Japanese and YM can be considered as verbs with (schematic) Path but without Motion.

2.3 Summary

Hitherto, the approach of this chapter has been mostly critical. My aim has not been criticism for its own sake, but instead to pinpoint some theoretical and conceptual revisions required for motion semantics. To the extent that this overthrows the analytical and conceptual framework from Talmy's work, it would at the same time be impossible without departing from his groundbreaking work. Several of the empirical problems in the typology concern conceptual and theoretical cornerstones of Talmy's framework itself. This involves at least the four following issues:

- The semantic notions of Manner, Path and most importantly Motion should be elucidated and, as I will suggest, further refined.
- The focus on the main verb and its associates disregards the ways in which additional form classes, as well as clauses and sentences in their entirety, contribute to the expression of motion.
- The conditions for conceptually specifying when motion involves change of location and when it does not do so require elaboration.
- To assume the binary oppositions Path vs. Manner, motion event vs. co-event and verb vs. satellite fails to capture the complex ways in which languages express the experiential domain of motion and effectively forces one into the discriminatory thinking of either-or.

Based on the phenomenological-experiential perspective presented in Chapters 1 and 2, I urge for motion to be pursued as an experiential and pluralistic concept. With the taxonomy of *motion situations* described in the following section as the point of departure, I argue that it is possible to compare which resources are used to express the different kinds of motion situations suggested by the taxonomy. The analysis thus deviates from the Aristotelian inclination to consider language as a reflection of pre-given categories. To adapt the catchphrase of the American philosopher Richard Rorty ("the mirror of nature"), language is neither such a mirror nor a "mirror of thought". Following the argumentation in Chapter 2, semantics and linguistic typology require careful description of the investigated domain. It is here that the

phenomenological doctrine of "a return to the things themselves" has validity even for linguistics.

An analysis of experience alone is of course not sufficient for a theory of semantics and linguistic typology. In order to have a semantic framework against which the experience of motion can be calibrated, I return in Section 4 to *Holistic Spatial Semantics (HSS)*. Introduced in Chapter 2 as a non-compositionalist and contextually sensitive theory of linguistic meaning, HSS defines a number of semantic categories that participate in expressing spatial meaning. This chapter ends with a proposal of the required semantic categories for motion semantics.

3. Motion in experience

The discussions of motion have shown that theoretical argumentation, linguistic evidence and experience suggest that motion is of two general kinds, what I have called inner and outer. What is not clear is how this differentiation should be spelled out in a way that (a) remains consistent with the experience of (observed) motion and (b) opens for systematic cross-linguistic comparisons. The aim of this section is to present such an account of motion.

In a joint publication, Jordan Zlatev, Caroline David and I proposed an experientially based approach to motion (Zlatev, Blomberg and David 2010). To a large extent, this work was born out of the need to overcome the conceptual problems in Talmy's typology and thus pave the way for future research in semantic typology of motion. Instead of attempting a semantic or conceptual analysis of motion, we opted for an experiential, language-independent analysis of how motion is perceived by an observer, which can be seen as an example of a static phenomenological analysis (see Chapter 1). The experiential analysis of motion led to a taxonomy of eight possible *motion situations* – a more neutral term preferred over Talmy's motion events – defined by three parameters described and discussed below.

A clearer definition of motion is fundamental for the analysis in the following chapters. In Chapters 4 and 5, I use and rely on the taxonomy mentioned above for classifying and differentiating different kinds of motion situations in a systematic way and for calibrating the type of linguistic resources used in expressing these different situations. In this section, I present the overall analysis of motion from an observer's perspective and also expand on some issues left to clarify.

With that said, what is motion from a phenomenological perspective? At its broadest, we defined a motion situation as "the experience of continuous change in the relative position of an object (the figure) against a background" (Zlatev *et al.* 2010: p: 393). This definition suggests that an experience of motion involves some kind of object against some kind of spatial background in relation to which the object changes its location. However, the object cannot change location in just any way; the

change must be perceived as continuous in space and time. Based on such a maximally broad definition of motion, three independent but interacting binary parameters make the most relevant distinctions in the domain of motion: *translocation*, *boundedness* and *cause*.

The first of these is the most central. To a large extent, translocation specifies wherein the difference lies between inner and outer motion. It can thereby overcome the conceptual problems with Talmy's (2000b) differentiation between translational and self-contained motion (Zlatev *et al*. 2010: p. 393). Translocative motion can be defined as "the continuous change of an object's average position *according to a spatial frame of reference*" (ibid: p. 393. Emphasis added). Accordingly, in non-translocative motion, the moving object does not change position according to a (given) spatial frame of reference. In this definition of translocation, the notion of spatial frames of reference figures importantly. This notion has been used to refer to the different ways in which space is structured in language (Levinson 1996, 2003), and could be extended, as I will go on to suggest, even to perception. The statement that the experience of translocative motion is defined in terms of "change in relative position according to a frame of reference" entails that this notion is also subject to an experiential understanding. I propose a phenomenological analysis of frames of reference in Section 3.1 and relate it to translocation in Section 3.2.

The second of the three parameters concerns whether a motion situation is experienced as spatially delimited or not. This is captured by differentiating between bounded and unbounded motion, a parameter discussed in more detail in 3.3.

> The *boundedness* of a process undergone by X implies that it will inevitably (not just possibly or probably) lead to *X undergoing a state-transition* […] In *unbounded motion*, nothing of the sort is implied, and in principle – though not practically – the motion can go on indefinitely. (Zlatev *et al*. 2010: p. 395)

The third and final feature of a motion situation is whether it is perceived as externally caused or not. The difference is based on an everyday life-world understanding of causality and not on our present-day scientific understanding (see Chapter 2, Section 3). For this reason, falling rain would not be considered as caused motion. I discuss this final parameter briefly and only in relation to the other two parameters of translocation and boundedness.

3.1 Spatial frames of reference

Say that Hamlet is standing in front of the castle. This does not tell us whether Hamlet is to the left of the castle (from, say, Ophelia's perspective), just as he might or might not be to the East of it. These are different ways to conceive of space, or

rather it presupposes three different ways for structuring spatial relations. The three spatial expressions: *next to*, *to the left of* and *to the East of*, involve different spatial *Frames of Reference* (henceforth FoR). It has been argued that such a notion of organizing principles offers a stable invariant view of space necessary to ascertain spatial relations. In the absence of such a principle neither motion nor space would appear as organized.

> How for example, do we account for the illusions of motion, as when the moon skims across the clouds, except by invoking a notion of a *constant perceptual window against which motion is to be judged*? (Levinson, 1996: p. 126. Emphasis added).

Levinson's choice of words is striking: a frame of reference is "a constant perceptual window". To judge the relation between objects – even more clearly when motion is involved – requires them to be related to one another through a stable perspective for assembling space. If not, it would not be possible to judge whether a moving object is moving this or that way, away from a landmark or not. Our experience of space would be, as for Whorf (1956), "a kaleidoscopic flux of impressions". With respect to visual perception, the notion of FoR is intimately connected with Gestalt Psychology. In this tradition, FoR invoked

> a unit or organization of units that collectively serve to identify a coordinate system with respect to which certain properties of objects, including the phenomenal self, are gauged. (Rock, 1992: p. 404, quoted in Levinson, 1996)

Following this formulation, FoR can schematically be described as a coordinate system comprised of axes and vectors.[19] There is not just one way in which this system can be construed, but rather three different ways seem possible.

The first type is dependent on the relation between objects. For motion to occur against such a perceptual window, it presupposes a spatial anchoring, either through a relation to an external landmark or the figure's relation to itself over time. The motion in question is thus judged against a perceptual object where both can have different intrinsic features as a front and a back. This, what Levinson (1996) calls the *intrinsic frame of reference*, is just one of three possible types of FoR. An observer occupies a position in space. This can serve as the basis for another kind of FoR. From this point of view, motion is assessed as away or towards me, to the left or to the right of me – a type of FoR which depends on the position of the observer. It is a

[19] Of course, our experience of space does not involve a coordinate system and this characterization is therefore best considered as a way to describe and model the structure of spatial experience.

relative frame of reference (Levinson 1996). A third type of FoR is comprised of an invariant view on space, independent of the position of a particular observer. The typical examples are the cardinal directions, but should arguably also include geocentric directions such as up and down – this is the *absolute frame of reference*.

The experience of motion significantly changes in accordance with the type of FoR that motion is gauged against. As you run for shelter from the falling rain, it feels as if the rain comes towards you and hits you in the face, but the same rain seen through the window is seen as falling to the ground.[20]

It has been proposed that languages structure space according to these three possible linguistic Frames of Reference. Levinson (1996) points out that the three FoRs are *logically incommensurable* with one another, i.e. to deem a spatial relation in terms of left or right does not give any clue as to the relation in terms of North or South, or in terms of 'behind' and 'in front of'. Given that any of the three sentences in (24)-(26) expresses a true statement, there is no way to determine whether the other two are true or false. In other words, there is no intertranslatability between statements utilizing different FoRs.

(24) Don Pedro runs to the house. (FoR: intrinsic)
(25) Don Pedro runs to the left. (FoR: relative)
(26) Don Pedro runs East. (FoR: absolute)

This logical impossibility seems to entail a propositional nature to the notion of FoR. But is the tripartite division a generalization from linguistic constructions and conventions (as suggested by Levinson) or can this division rather be experientially comprehended? As mentioned above, Gestalt psychology reads the notion differently: as an experiential (and phenomenologically inspired) notion. In the following, I propose a phenomenological interpretation of the three different types of FoRs. From this perspective, they come to be three *possible objectifications of space (*cf. Woelert 2011).[21] With this I suggest that they convey three different ways in which space is, in the phenomenological parlance discussed in Chapter 2, *constituted*. That is, there are three different ways in which space is founded by and available to consciousness. To read FoR as structures of spatial experience is, I will argue in Section 3.2, indispensable for defining and differentiating motion at this level. Since the terms "relative", "intrinsic" and "absolute" were introduced by Levinson (1996, 2003) as explicitly *linguistic* spatial frames, and here I will argued that these have a pre-

[20] A possible parallel can here be drawn to some commonly known aspects of Einstein's theory of general relativity: motion differs crucially dependent on how the reference frame and is therefore relative to how it is conceived.

[21] It should be noted that to interpret FoR as a phenomenological and experiential concept runs in quite the opposite direction from the proposal of Levinson (1996).

linguistic experiential basis, I will use the terms *viewpoint-centered*, *object-centered* and *geocentric*, respectively. This follows the terminology of Zlatev (2007) and Zlatev, Blomberg & David (2010), but emphasizes the experiential nature of the frames to a greater degree.

The viewpoint-centered (relative) Frame of Reference: Interpreted experientially, the relative FoR involves deictic anchoring in the subject's immediate conception of space. The (trans)location of the figure is thus deemed in relation to a subject and does not involve a landmark, or some other fixed external frame. It is easy to see this FoR as directly linked to the bodily orientation of a perceiver; it is based in the vantage point of an observer and the kind of spatial information available to the present perceptual field. This observer is spatial in the sense of having a living body always oriented in a particular direction. In this way, we have a direct, immediate and subject-relative perspective on space which itself depends on our body and its orientation. As discussed in Chapters 1 and 2, this amounts to "zero-point of orientation" (Zahavi 2003): a presupposed perspective which itself functions as an anchor for spatial relations. It is this immediacy that provides the phenomenological basis for deictic locutions such as *here* vs. *there* and *go* vs. *come*.

The object-centered (intrinsic) Frame of Reference: In this FoR, the figure is related to a landmark, as in (the experience corresponding to) (27). As represented in (28), the landmark need not be a secondary object, but can be the moving object itself at a previous point in time.

(27) The horse raced towards the barn.
(28) The horse raced forward.

We can relate this to another way of constituting space. Spatial experience includes objects with different properties in themselves. These properties can be functional (e.g. a hollow object can accommodate other objects) as well as morphologic (e.g. an object can have a front- and a backside). We perceive these properties as intrinsic to the objects themselves, but of course open to cross-cultural variation (Levinson 2003: p. 78). To have a front and a back is part of being a house, for instance. In this way, when two spatial entities are related to one another, they are related through the particular features that they have and the axes they project onto each other. Thus, the variable and different kinds of spatial features that objects have grounds this type of FoR.

The geocentric (absolute) Frame of Reference: In contrast to the previous kind, the absolute/geocentric FoR is based on geo-cardinal positions as reference points either in the horizontal or the vertical plane, as represented by the sentences in (29) and (30).

(29) The ship is sailing West.
(30) The balloon is going up.

With the geocentric FoR, the world in its most physical and firmest sense becomes the matrix for calibrating motion. The cardinal directions and verticality are common examples of axes fixed by features of the world, rather than specific objects or observers. In some cultures/languages such as Tzeltal (Levinson 2003) and Jahai (Burenhult 2008), the absolutization is generated from the topography of geographically prominent landforms such as slopes, rivers or mountains.

A phenomenological understanding of this FoR requires a bit more elaboration. The basic suggestion is that the geocentric frame is defined against the life-world as a whole. As discussed in Chapter 2, the life-world is a *ground* (German*: Boden*), in several different senses, as eminently summarized in Steinbock (1995). First, the world stands as ground in the most immediate spatial sense. It is the earth we tread, and it is therefore ever present beneath our feet. As terrestrial beings, we are bound to the earth. Experience is in this sense *grounded* in the world.[22]

The geocentruc FoR departs from the world itself as the measure of spatial relations. In cosmic space, there is no up or down just because there is no world to measure such movements against. Continuing this train of thought, the emergence of cardinal directions takes the world in its totality or some prominent landform in the world as the spatial "absolute". In this way, even the absolute FoR is, in a sense, relative to an observer for whom the Earth constitutes the ground. That is, even the absolute FoR has the life-world as its metric.

In sum, the three basic kinds of spatial FoRs can be analyzed in phenomenological terms as anchoring space in one side of a triad composed of ego-object-world. The following section details how this experiential understanding of FoR is required to differentiate between translocative and non-translocative motion.

3.2 Translocative motion

In what ways are spatial FoRs required for judging the difference between motion as translocative or not? To repeat, the definition of translocative motion given by Zlatev

[22] In a thought experiment, Husserl takes this quite far. Even if human beings got on a gigantic spaceship and travelled for generations, the Earth would still have the function of an indispensable referent for experience. In this way, Husserl wants to suggest that the life-world as *Boden* is not a fundament only through the immediate physical presence of Earthly ground, but it would still be "there" in the sense of a reference point. We need not agree with this determinative role of the life-world to reckon its constitutive function as long as we are in fact bound to its ground.

et al. (2010) is: "continuous change of an object's average position according to a spatial frame of reference". FoRs provide different ways to structure spatial experience, and it is only against any of these structures that a change in average position can be measured. In other words, translocative motion is necessarily gauged against an FoR. This is represented by the sentences in (31)-(33), exemplifying the three different FoRs: object-centered (31), viewpoint-centered (32) and geocentric (33). These can be contrasted with the situations represented in (34)-(36), where *motion* is not a case of location-change according to the specified (object-centered) FoR.

(31) Dogberry walks from/through/to the house.
(32) Prospero comes/goes this/that way.
(33) Hippolyta rushes South/West.

(34) Macbeth runs in the woods.
(35) Petruchio turns around over there.
(36) The three witches dance in the East.

Because all spatial conceptions presuppose at least one of the three types of FoR, non-translocative motion is also measured against this background. The difference resides in the role of structured space. The average change in position is change according to one of three types of FoR. In non-translocative motion, any objectification of space functions as the site of the motion activity. The figure does not change its average position according to an FoR (necessary if only to be able to verify this non-change). In other words, in order to define whether an experience of motion is translocative or not, an FoR is needed to affirm whether there is change in average position or not.

With the help of these definitions, it is possible to accommodate the motion situations falling outside of Talmy's classification in the terms of self-contained and translational motion, cf. (16) and (17), repeated below as (37) and (38).

(37) Puck runs in the garden.
(38) Othello sails South.

In (37), the landmark, *the garden*, is specified as a location. This means that the motion of running does not lead to a change in average position. The figure remains within the garden. Thus, (37) represents a non-translocative motion. This is not to say that the identical situation cannot be re-conceptualized in translocative terms, as in (39). The situation represented in (38) involves no landmark and hence no definitive beginning or end. However, it specifies a *vector* of motion in a cardinal direction. At every moment, the figure has therefore been translocating a bit further

to the South. In other words, the lack of a landmark does not entail any change in average position.

(39) Puck runs to the end of the garden and back.

An important remark is that the differentiation between translocative and non-translocative is insensitive to whether a landmark is expressed or if the motion is spatially delimited. To handle this difference, Zlatev *et al.* (2010) invoke the notion of boundedness.

3.3 Boundedness

The difference between translocative and non-translocative motion is based upon one or another kind of FoR. However, this fails to do justice to the difference between the motion situation expressed by (40) and (41). Even if both can be established as translocative, they differ in the sense that the former involves a definitive end – the figure got to an endpoint – while the latter only specifies that the motion has a vector, or a *direction*.

(40) Emilia sails to Cyprus.
(41) Emilia sails toward Cyprus.

One way to think about this difference would be in terms of telicity (goal-directedness): either a motion situation has an inherent goal or not. However, this fails to capture cases with spatial delimitation in terms of a starting-point with a projection towards the motion situation which will unfold. Another alternative would be to locate the difference in terms of temporal flow. Either a situation goes on or it is completed. This, however, is rather a temporal difference, and hence, would suggest that an ongoing translocation as in (42) lacks boundaries whereas a completed non-translocative motion as in (43) has them. Instead, boundedness should be seen as a matter of spatial delimitation, independent of temporal features and telicity.

(42) Claudius is walking to the theatre.
(43) Gertrude was running.

If we take these remarks into consideration, we can see that translocation and boundedness are two independent parameters of motion that can be combined in any possible way.

When combined with the parameter of translocation, the notion of boundedness attains a specific reading. A bounded translocation requires change in

position together with a beginning, middle and/or end. This is not the case for an unbounded translocation, which can in principle – though not in practice – go on indefinitely (or it might have gone on forever). The sentences in (44)-(46) all express translocative unbounded motion situations, framed by the corresponding type of FoR.

(44) Go to the right. (viewpoint-centered FoR)
(45) Go West. (geocentric FoR)
(46) Go towards the setting sun. (object-centered FoR)

Here, an interesting overlap between the two parameters can be noted. An unbounded translocation corresponding to an identical state-of-affairs can, as shown in the preceding examples, be defined according to all three FoRs. Bounded translocations differ by always being defined according to the object-centered FoR (Zlatev *et al*. 2010: p. 394). That is, the translocation is determined on the basis of another object against which the change in position is gauged.

Non-translocative motion can likewise be bounded or not. Clear examples of the former are posture changes, as in (47) and (48). These are all non-translocative because there is no change in average position according to the referenced FoR and their boundedness emerges from the natural endpoint of the motion itself. As we get to unbounded, non-translocative motion, we reach the lower threshold of what is thematically perceived as motion. As it is linguistically represented, the type arguably involves different dynamic configurations of a figure, cf. (49) and (50).

(47) Hamlet collapses.
(48) Claudius sits down.

(49) Francis Flute waves his hand.
(50) The mushroom cloud expanded across the sky.

3.4 A taxonomy of motion situation

The two parameters of boundedness and translocation are independent of one another. In addition to these two parameters, we should also differentiate between motion caused by an external factor, as expressed in (51) and motion that is not the result of an external cause, as in (52). It should be remembered that the relevant kind of causation is that of a naïve, life-world physics, rather than that of our present-day scientific understanding.

(51) Nick Bottom pushes the wagon up the hill.
(52) The wagon moves down the hill.

The binary values for all three parameters taken together imply a taxonomy of eight possible types of motion situations. This is shown in Table 3-1 (adapted from Zlatev *et al*. 2010) with corresponding examples.

Table 3-1. Illustration of the expression of eight motion situation types in English; F = Figure, LM = Landmark, A = Agent

Translocative	Bounded	- Caused	+ Caused
+	+	F goes from LM (begin) F goes through LM (mid) F goes to LM (end)	A takes F from LM (begin) A throws F over LM (mid) A puts F into LM (end)
	-	F goes away (viewpoint-c) F goes up (geo-c) F goes forward (object-c)	A takes F away (viewpoint-c) A pushes F upward (geo-c) A pushes F forward (object-c)
-	+	F jumps F blinks	A smashes F A tears F
	-	F waves F walks (on a treadmill)	A waves F A bounces F (indefinitely)

Motion is multifaceted in experience and language. The taxonomy represented above is mostly geared towards sorting out which motion situations are translocative and which are not. In this way, there is still the need to bring in a number of relevant features of motion which the present taxonomy does not account for. One of these concerns motion situations as being of different "shapes". The sentences in (53) and (54) represent motion situations that can be seen as bounded and non-translocative. However, in order to differentiate what is specific about these situations, as opposed to the situations represented in (47) and (48), it might be beneficial to spell out how shapes of motion interact with the parameters of taxonomy. In Chapters 7 and 8, the concept of shape of motion will recur.

(53) Rosalind runs in circles.
(54) Sycorax zigzags.

A second concern is that the analysis of Zlatev *et al*. (2010) does not take the temporal profile of motion situations into account. In this analysis, both (55) and (56) are considered bounded, translocative motion situations and thereby disregard the difference between temporally protracted motion situations from those that are not prolonged in time, as in the difference between *achievements* and *accomplishments* introduced by Vendler (1957) where the former expresses the durative but bounded progression and the latter the punctual transition from one state to another.

(55) King Lear climbed up the mountain.
(56) King Lear reached the top.

With these reservations, I propose that the taxonomy allows for the calibration of motion along dimensions relevant for pertinent issues in motion semantics and typology. In this regard, the relevant dimensions have been clearly defined "independent of any linguistic stock" as Whorf (1956) put it. In sum, the following three features characterize the taxonomy of motion situations.

- Clear criteria for distinguishing between motion situations at an experiential level according to the three parameters of boundedness, translocation and causation.
- Distinctions that rely on clear definitions previously absent or not explicitly spelled out in motion semantics. This allows lucid definitions of semantic terms such as Path.
- Rather than semantic or conceptual analysis (in the tradition of analytical philosophy), the analysis departs from the perception of motion from an observer's perspective in the life-world.

Considering this, I use the taxonomy to classify and differentiate between motion situations. The classified situations are represented in the stimuli used to elicit motion descriptions in Swedish, French and Thai (see Chapters 4 and 5). With the help of a clear classification of motion situations, it is possible to calibrate which linguistic resources the three languages use to demarcate between these situations. Prior to that, in the following section, the semantic categories hypothesized by HSS to be necessary and sufficient for a semantics of space and motion are delineated.

4. The semantics of motion situations

The criticism of Talmian motion event typology in Section 2 involved not only the lack of a clear conception of motion, but also an analytically unclear terminology where core notions such as Path and Manner and grammatical elements such as satellite lack satisfactory definitions. Operating within a framework without clear terminological definitions runs the obvious risk of impeding, or even preventing, replication and cross-studies comparisons. In other words, not only the experience of motion must be clearly defined, but also the linguistic and semantic elements expected to participate in expressing these experiences require clear definitions.

Based on both original semantic and cross-linguistic research (Zlatev 1997, 2003) as well as on synthesizing the field of spatial semantics (Zlatev 2007), the theory of Holistic Spatial Semantics proposes seven universal spatial semantic categories. These categories are proposed across a large number of theories in spatial semantics and could therefore be expected to be prime candidates for the necessary

categories to express spatial meaning. With the purpose of addressing motion and not space in general, I have added one category, Manner, to the original seven. Every category has furthermore been specified to the task of investigating motion semantics. Since they are categories of language, they are schematic and less specified than what is given in experience. I therefore intend these categories to reflect *semantic* distinctions required to express motion.

4.1 Figure and Landmark

In its most basic form, a spatial utterance can be seen as the answer to a "where-question". As such, a spatial utterance profiles an "entity whose (trans)location is of relevance" (Zlatev 2007: p. 326); an entity that can be static (57) or dynamic (58), a person or an object (59) and even an entire event (60).

(57) Tony stands by his desk.
(58) Logan runs to the mansion.
(59) The Kryptonite is in the box.
(60) Max is playing the piano.

To capture this, different researchers have used different terms, e.g. *Figure* (Talmy 1975) *trajector* (Langacker 1987) and *referent* (Miller and Johnson-Laird 1976). This entity is often related to a second entity, a "reference entity to which the location or the trajectory of motion is specified" (Zlatev 2007: p. 326), e.g. *his desk* in (57). This is called *Ground* (Talmy 1975), *landmark* (Langacker 1987) and *relatum* (Miller and Johnson-Laird 1976).

I call these two entities *Figure* and *Landmark* (abbreviated LM in the following). Mixing the terminology of Talmy and Langacker is not for the purpose of synthesizing their respective frameworks, but to establish a consistent and straightforward terminology. The pairing "Figure and Ground" evokes Gestalt psychology where the terms were used to cover general processes of conscious awareness rather than categories of spatial semantics, where often a single Figure is related to more than one Landmark in a single sentence. For this reason, I find the pairing unfit for capturing the relevant aspect for motion semantics. Similarly, the terms referent and trajector are both relational and suggest a necessary connection to a reference entity. In contrast, a Figure conveys the sense of an entity with a degree of

independence. In contrast to Ground, the term Landmark signals more clearly that the reference entity is a physical object.[23]

4.2 Frame of Reference

Frame of Reference was discussed above as both a concept in semantic typology and given a more general phenomenological interpretation. My proposal for the relation between experiential and semantic FoRs is in line with that concerning the other categories: the semantic categories are based on prelinguistic experiential structures and processes, but are more schematic and to a large degree language-specific (cf. Chapter 2).

Most theories in spatial semantics acknowledge that the (trans)location of a figure is made against at least one FoR, using different terms such as 'perspective system' (Levelt 1996) and 'frames' (Jackendoff 1996). Common across different analyses is that spatial descriptions are anchored in a given perspective on space, a perspective that involves "one or more reference points, and possibly also a coordinate system of 'axes' and 'angles'" (Zlatev 2007: p. 327). There has been less agreement on formulating a cross-linguistically valid generalization, but perhaps the most widespread is that of Levinson (1996, 2003), who claimed that "there are exactly three frames grammaticalized or lexicalized in language" (Levinson 1996: p. 138). Whereas this tripartite distinction pertains to the static projection in the horizontal plane, Zlatev (2007) generalized this to include (a) the vertical plane, (b) objects without "intrinsic" sides and (c) dynamic projection and introduced the terms OBJECT-CENTERED, VIEWPOINT-CENTERED and GEOCENTRIC FoR:

a. OBJECT-CENTERED: Always anchored at a Landmark (which could be the Figure in a previous moment of time).
b. VIEWPOINT-CENTERED*:* Spatial reference is given in relation to the perspective of a real or imaginary viewpoint.
c. GEOCENTRIC: Positions and directions are fixed in absolute geo-cardinal bearings as 'North' or 'up' and does not rely on a viewpoint or object.

The three FoRs are exemplified in (61)-(63) below. While it is sometimes assumed that (62) is less primary in languages (cf. Miller and Johnson-Laird 1976), typological research in spatial semantics has found languages such as Guugu Yimithirr, together

[23] The trajector/landmark differentiation is in Langacker's analysis neither limited to nor always projections from space to other domains,; cf. Langacker (1987: p. 231). In line with Regier (1996) and Zlatev (1997), I reserve the term for a spatial reading.

with Tzeltal and certain dialects of Tamil, to anchor spatial utterances in geocentric cardinal bearings (cf. Levinson 1996, 2003; Pederson, Danzig, Wilkins, Levinson, Kita and Senft 1998). Defining spatial FoR as proposed here (following Zlatev 2007), it is likely that they are used by all languages, though for different expressions and to varying degrees.

(61) Peter Parker goes to the store.	FoR: OBJECT-CENTERED
(62) Steve Rogers goes North.	FoR: GEOCENTRIC
(63) Bruce Wayne goes to the left.	FoR: VIEWPOINT-CENTERED

4.3 Region

A Figure is not related to a Landmark plain and simple. To use the parlance of phenomenology, a specific "profile" or "aspect" of the latter is typically intended. In other words, the Figure is related to a particular aspect of the LM: "the specification of a configuration, defined with respect to the landmark, where the trajector (or an aspect of) its path is located" (Zlatev 1997: p. 74). This profiling can be illustrated as determining the "place" rather than the "thing" of the spatial relation (cf. Jackendoff, 1990). The LM is the "thing" which the Figure is judged against. Region – the "place" – intermediates the relation by specifying in what way the Figure relates to the LM. In (64), the Figure, Susan Storm, is related to the LM, the field, in a specific way so that the she occupies a certain place of the LM: its surface.

(64) Susan Storm stands on the field.

Regions cut up space somewhat differently across languages. The values are often defined according to perceptual or geometric properties of the LM, such as inside/outside, in-front/behind, etc. Since regions qualify the Figure-LM relations, it is not unexpected to find Regions based on functional properties rather than geometric ones. It would however be a mistake to impose a rigid distinction between geometrically determined and functionally motivated properties. Arguably, functional features are inherent even in geometrical region specifications. The type of Figure and the type of LM both have certain functional motivated expectations on the spatial relation itself. A table, for instance, is expected to be in a house rather than on it. Likewise, objects are typically placed on top of a desk rather than stuck to its underside. In this regard, the oft-cited example of the functional differentiation in Korean between motion resulting in LOOSE FIT or TIGHT FIT (Choi and Bowerman 1991) might rather be an example where the functional aspect is more highlighted than the geometrical features of the LM.

4.4 Motion

In HSS, motion is a binary category specifying whether there is perceived motion or not, assuming an experiential definition of motion such as "the experience of continuous change in a figure's position against a background" (Zlatev *et al*. 2010: p. 393). A situation is construed as either static or dynamic, typically represented by a copula or dispositional verb (65) or a Motion-verb, adverbs and adpositional phrase jointly expressing either translocative (66) or non-translocative motion (67).

(65) Harvey Dent is/sits in the courthouse.
(66) Edward Nigma walks to the store.
(67) Selina Kyle walks in her apartment.

4.5 Path

The notion of Path is among the most fundamental ones for motion semantics. As discussed in Section 1, Path is regarded as the "core schema" of a motion event (Talmy 2000b). Likewise, Jackendoff (1983) connects Path to Motion as the feature expressing displacement. These suggestions tie Path intimately to Motion and change-of-location (cf. Section 2). Following Zlatev (2007), this reading of Path can be called *rich*. On such an interpretation, Path "refers to the trajectory of actual or imagined motion of the 'trajector' with respect to the 'landmark'" (ibid: p. 329). On this account, Path covers not only (experienced) motion but also perceptual continuity in a spatial arrangement, e.g. (68) and (69).

(68) I looked across the valley **from** one side **to** the other.
(69) The bridge **crosses** the river.

A rich interpretation of Path proposes an intimate connection to spatial continuity. If there is indeed actual motion, Path is quite literally "the path of motion". It is the continuous stretch in space occupied by a Figure in time. But in making Path so intimately connected to Motion, this reading obscures the difference between actual motion and non-actual motion (cf. Chapters 1 and 6) and makes Motion an element in all forms of change, as in (70) where there is a change in temperature.

(70) The water went **from** hot **to** cold.

For the purposes of motion semantics, rich Path therefore fails to capture what is specific about the linguistic expression of translocative motion. We can differentiate the rich interpretation from a minimal, or *schematic*, notion of Path. This alternative interpretation bases the notion on the cross-linguistic generalization that languages

systematically distinguish between the beginning, middle and end of a translocative motion situation. This means that Path specifies *only* the beginning, middle and/or end of translocative motion. In other words, schematic Path is independent of Motion and does not presuppose spatial continuity. A zero-value for Path, PLACE, can be included to capture generalizations across languages with locative case systems, with this value corresponding to locative (including non-translocative dynamic) situations, as represented in (60) and (64). The difference between rich and schematic Path is represented in Figure 3-3. A rich reading considers Path and Motion as continuous in space (represented by the arrow) and the intersecting points in space as derived from this process. A schematic reading takes the intersected Landmarks as the point of departure and the continuity of Motion as separate information (represented by the dotted arrow).

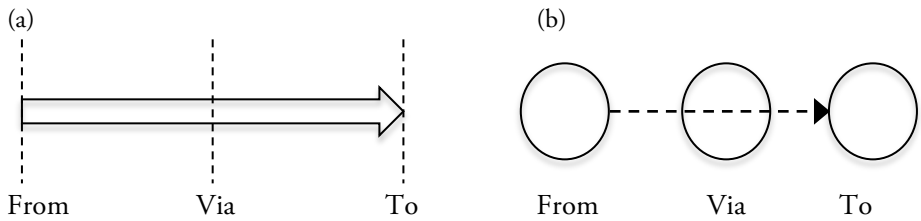


Figure 3-3. Representation of (a) rich Path and (b) schematic Path

In many languages, schematic Path interacts with Region to form expressions of Region-change, i.e. change in location from inside to outside. The enter- and exit-verbs of Japanese and YM discussed in Section 2 arguably express both Path+Region. As rich Path is defined, however, it also requires the presence of Motion. The Japanese and YM verbs are thus better reclassified as expressing Region-change rather than rich Path.

The values of Path are illustrated below in (71)-(74) with the value for Region consistently set to INTERIOR.

(71) Macbeth went **out of** the house.	Path:BEGIN
(72) Macbeth went **through** the house.	Path:VIA
(73) Macbeth went **into** the house.	Path:END
(74) Macbeth is **in** the house.	Path:PLACE

In relation to translocative motion, it is relevant to notice how Region and Path interact. When Path is expressed, the value for Region often changes as well. In expressing translocative motion, a particular value for region is often overtly or covertly expressed. Thus, bounded translocation also involves moving from INSIDE to OUTSIDE, from FAR to NEAR. I will speak about region-change of both continuous

and discrete kinds. In the first case, the Figure is moving and changing the value for region continuously against a Landmark. In the latter case, an immediate transition from one region of a Landmark to another occurs. If not otherwise noted, I use region-change to refer to transitions between INSIDE and OUTSIDE.

4.6 Direction

As discussed in Section 3, Motion situations can be translocative without expressing Path. This is linguistically reflected in examples (75)-(77) where translocative motion is expressed without an explicit LM. To account for this semantically, Zlatev (2003) introduced Direction to the categories of HSS. Within this framework, Direction, in contrast to Path, which always presuppose the OBJECT-CENTERED FoR, can be specified according to all three FoRs.

(75) Go away!	FoR: VIEWPOINT-CENTERED
(76) Go forward!	FoR: OBJECT-CENTERED
(77) Go West!	FoR: GEOCENTRIC

Direction does not entail that translocation is bounded by a Landmark. Instead, it characterizes motion as unbounded motion according to one of three types of FoR. Even if a motion situation cannot go on indefinitely in practice, it can still have the semantic properties of endlessness in principle.

4.7 Manner

Motion involves a particular way of moving, *Manner*. As familiar, languages differ strongly in the way and degree to which they express Manner. To remind, languages such as Spanish are said to be prone to the so-called boundary-crossing constraint, according to which Manner-verbs do not co-occur with expressions of Region-change (cf. Slobin and Hoiting 1994) and languages like Yucatec Maya and Tzeltal cannot use Manner-verbs to render translocative readings (cf. Levinson and Wilkins 2006 and Bohnemeyer 2010).

Despite these constraints on how to combine Manner for different types of motion situations, languages have the resources to express how the Figure moves. This makes Manner a needed semantic category for analyzing the expression of motion. To systematically define and differentiate between different forms of Manner has been proverbially difficult. Even if there have been attempts to construe typologies of Manner, such as those of Slobin (2006) and Akita (2013), the heterogeneous character of Manner has proved elusive. Where categories such as Path and Direction can be systematically and differentially defined, Manner is more

pluralistic and can therefore be expected to exhibit larger forms of cross-linguistic variation. One main contributing factor is that some Manner-information can be related to Path and Direction, i.e. participating in expressing translocation, whereas other forms of Manner-information do not, e.g. *run* vs. *oscillate* (cf. Roja and Valenzuela 2004). I discuss this difference in more detail in Chapter 4. A tentative list of relevant Manner-types should include at least the following seven parameters:

- Manner related to translocation vs. Manner not related to translocation.
- Manner of animate vs. inanimate Figures.
- Gait of movement: dependent on the type of Figure, e.g. *walk* vs. *run*, *trot* vs. *gallop*.
- Whole-body movement, e.g. *jump*, *roll*.
- Body-part movement, e.g. *wave* (the hand), *twist* (the body).
- Medium-specific movement, e.g. *swim*, *glide*.
- Temperament of movement, e.g. *hurry*/*rush*, *saunter*/*stroll*.

4.8 Summary

The categories presented in this section and summarized in Table 3-2 are proposed to capture the linguistic representation of non-caused motion across languages. The two most notable features for the present purposes are (i) The semantic separation between Path and Motion, allowing for cross-linguistic generalizations of change-of-location without Motion and (ii) a differentiation between Path and Direction, corresponding to the distinction between bounded and unbounded translocation.

Table 3-2. The eight semantic categories of HSS and definitions

Category	Definition
Figure	*The object whose motion is of relevance.*
Landmark	*The reference entity against which the motion is measured (in the OBJECT-CENTERED FoR).*
Frame of Reference	*A system of reference points and axes, of three general kinds: VIEWPOINT-CENTERED (VC), OBJECT-CENTERED (OC), GEOCENTRIC (GC)*
Region	*The specification of the relevant parts of a Landmark's configuration.*
Motion	*The presence or absence of (perceived) motion.*
Path	*A specification of bounded translocation with respect to beginning, middle and/or end, or place (non-translocation)*
Direction	*A vector of motion defined according to any of the three types of FoRs.*
Manner	*The particular way of moving (possibly) involved in expressing Motion.*

In sum, the semantic and typological study of motion has been strongly influenced by the framework established by Talmy (1985, 1991). I have argued that empirical and conceptual shortcomings are problematic for this framework. In its place, I suggested that the phenomenologically inspired analysis of observed motion of Zlatev, Blomberg and David (2010) provides a better basis for semantic and cross-linguistic investigations. Applying the theory of Holistic Spatial Semantics discussed in Chapter 2 to motion semantics, I presented eight semantic categories for studying the expression of motion situations across languages. These categories are proposed to be necessary and jointly sufficient to account for the semantics of actual (and as we will see in Part III, also non-actual) motion in any language. In the remainder of Part II, this framework is applied to the analysis of actual motion in Swedish, French and Thai and in Part III to non-actual motion semantics in the same three languages.

Chapter 4
The expression of actual motion in Swedish, French and Thai

As described in the previous chapter, motion typology has been mainly concerned with the expression of Path and Manner in motion events – a subclass of (translocative) motion situations. These two categories are expected to be realized either in the main verb root or in an associate to the verb root, a so-called satellite. The exhaustiveness of this typology has been challenged by languages that allow for several motion-expressing verbs to co-occur in serial-verb constructions with no verb clearly serving as the main verb. As these verbs express Manner, Path and Direction, there is no basis for grounding a semantic typology only on the basis of whether Path is expressed in the verb/head or not. Thai has been described as a language with such verb-serializing properties (Zlatev and Yangklang 2004). By challenging the universality of two types, Thai, together with other languages of verb-serializing strategies, may be seen as representing a "third type" of motion encoding, which Slobin (2004) calls *equipollently-framed languages*. These three so-called framing patterns are exemplified in (1)-(3) where the three languages differ in (i) the distribution and conflation of Motion with other semantic categories across the sentence and (ii) the information that is (explicitly) expressed. As can be seen from the glossing and semantic coding, Swedish expresses *Manner* in the verb, **Path** in an adverb/particle and a preposition; French expresses only **Path** and Thai expresses *Manner*, **Path** and Direction (towards the viewer) in three separate verbs.

(1) En kvinna *går* **ut ur** en grotta.
'A woman walks out of a cave.'

(2) Une femme **sort** d'une grotte.
'A woman exits from a cave.'

(3) Phûyi˘ng *doen* **oòk** ma chaàk nai thâm.
'A woman comes out from a cave walking.'
(lit. 'A woman walks exits comes from inside a cave.')

In order to explore the semantic theory and experiential analyses of motion described in previous chapters, this and the following chapter present a systematic analysis of the way native speakers of Swedish, French and Thai describe different kinds of motion situations. In the Talmian typology, all Indo-European languages with the

exception of Romance languages are considered satellite-framed. Romance languages, on the other hand are supposed to be verb-framed (Talmy 2000). This means that Swedish should belong to the satellite-framed type and French to the verb-framed type. Thai on the other hand is the best-known representative of the so-called equipollently-framed type (Slobin 2004).

Linguistic descriptions were gathered with the help of the elicitation tool *Trajectoire* developed in the project with the same name (Ishibashi, Kopecka and Vuillermet 2006). The tool consists of short video-clips representing motion situations that can be classified according to the experiential taxonomy of motion described in the previous chapter. Of the different types of motion situations recognized by the taxonomy, *Trajectoire* focuses mainly on bounded translocations. The tool is described in more detail in Section 1, together with a classification of the stimuli. Descriptions in Thai and Swedish were elicited for the purpose of the present study, whereas Dr. Benjamin Fagard, a member of the *Trajectoire* project, generously provided the French data. Participants and the procedure are described in Sections 2 and 3.

The main aim of this chapter is to discuss motion semantics and typology from a perspective on motion and spatial semantics not limited to the two form classes (main) verb and satellite and the two semantic categories Path and Manner. To accomplish this aim, I rely on the framework of Holistic Spatial Semantics described in Chapters 2 and 3 (Zlatev 1997, 2003, 2007). This framework opposes the assumption that spatial information is mainly a matter of "localizing" semantic categories to single form classes. It claims that patterns of conflation and distribution enable spatial information to be spread across an entire clause, and sometimes an entire utterance. One of my main goals in this chapter is to show that this view on semantics is not only theoretically sound but also empirically viable.

In this and the following chapter, I present and discuss the results of the study with two specific aims in mind. The first is to describe the motion encoding of the three languages according to the framework of Holistic Spatial Semantics: what are the resources for expressing the categories of spatial semantics and what are the patterns of distribution and conflation? The second is to determine how the speakers of the three languages tend to use these resources: which are common to all three and how do they differ?

1. The Trajectoire elicitation tool

Elicitation-based studies of motion have proven a very successful method for cross-linguistic research. In the 1990s, Dan Slobin and his associates used the picture story-book *Frog, where are you* (Mayer 1969) to gather narratives across a large number of languages. The narratives included many descriptions of motion situations (Slobin

1996). This established a research paradigm for eliciting data across languages (as summarized by Strömqvist and Verhoeven (2004)). For the last 10 years or so, there has been a tendency to move away from still pictures in the elicitation of motion in favor of video clips. This change is largely due to the limitations of pictures in representing motion. Video clips can either be animated (e.g. Bohnemeyer, Eisenbeiss and Narahimsan 2006) or recorded videos, mostly restricted to human motion (e.g. Ishibashi, Kopecka and Vuillermet 2006).

The extent to which the nature of the stimuli affects the elicited descriptions of motion situations is something that remains to be investigated. Still, it is likely to be considerable, since studies of linguistic relativity relying on categorizations of different kinds of video-clips have provided different results (Zlatev, Blomberg and David 2010).

For the present study, the represented motion situations needed to be clearly defined. This could not be attained by using *Frog, Where are you?* where some pictures represent more than one motion situation. A picture material specifically designed for eliciting motion could of course remedy this problem, but then we are faced with the problem of still pictures as less representative of motion than video clips. When I had the fortune to come across the elicitation tool *Trajectoire* (thanks to one of its creators, Dr. Benjamin Fagard) the choice was simple.

Trajectoire comprises 76 video clips of human motion, all between eight and fourteen seconds long. The tool has been applied in the field with previous elicitations of several European languages (Fortis, Grinevald, Kopecka and Vittrant 2011). The clips include real-life footage set in different natural environments including a cave, a green area, a beach and a park environment. Sample pictures of the different settings are shown in Figure 4-1. In these clips, human agents (two boys, two men and three women) carry out different forms of motion of either a translocative or a non-translocative kind, or in two cases remain immobile. The agent is often a single person, but some clips involve two or more persons. The number of agents does not affect the type of motion situation, that is no scene contains agents carrying out different motion situations from each other.

With respect to *Translocation* and *Boundedness*, the clips are distributed as detailed in Table 4-2. As its name suggests, the aim of the *Trajectoire* project was to investigate the expressions of different kinds of translocative motion. This is reflected in a stimulus set heavily tilted towards representing translocative bounded motion situations.[24] With respect to the other parameters, the material is evenly distributed. This distribution naturally affects the focus of the present study to bounded translocation with other types of motion situations as comparisons and contrasts.

[24] For a full description of all clips and their respective parameters, see Appendix I.

Figure 4-1. The four environments of *Trajectoire*: beach, cave, park, and green area

Despite this uneven distribution of the clips, *Trajectoire* has the following three advantages. First, scenes of bounded translocation systematically vary according to its three different sub-types, circumscribing the motion situation with respect to (i) starting-point, (ii) middle and (iii) end-point, involving both inanimate and animate reference objects. Secondly, boundary-crossing scenes are not limited to the prototypical boundaries of entrances, but also involve shorelines and groves. Third and finally, to at least partially prevent the participant's experience of the task from becoming tedious, which might lead to stereotypical or repetitive descriptions, the motion situations take place in different environments, with different agents and different types of motion situations.

Table 4-1. The five parameters for classification of the clips with example scenarios for each type of scene

	Parameter	Value	Example
1	**Translocative motion**	*Yes*	*Figure MOVE + CHANGE LOCATION*
		No	*Figure MOVE - CHANGE LOCATION*
2	**Bounded motion**	*Beginning*	*Fig MOVE FROM LM*
		Middle	*Fig MOVE VIA LM*
		End	*Fig MOVE TO LM*
		Place	*Figure AT LM*
3	**State-transition**	*Out-of LM*	*Fig MOVE OUT-OF LM*
		Into LM	*Fig MOVE IN-TO LM*
		Unmarked	*Fig MOVE NO OUT-OF/IN-TO LM*
4	**Direction**	*Left-right/right-left*	*Fig MOVE LEFT-RIGHT/RIGHT-LEFT*
		Towards/away from viewer	*Fig MOVE + COME/GO*
		Up/Down	*Fig MOVE + UP/DOWN*
5	**Manner**	*Unmarked*	*Fig MOVE-BY-WALK*
		Marked	*Fig MOVE-BY-RUN /JUMP*

Table 4-2. The distribution of the clips according to the taxonomy of motion

	Translocative	Non-translocative	Static	Total
Bounded	51	11	n/a	63
Unbounded	7	3	n/a	11
Total	58	14	2	74

2. Participants and procedure

17 (11 female, mean age 22.9) native speakers of Swedish, all students at Lund University and 14 (10 female, mean age 29.1) native speakers of Thai, mainly visiting students at Lund University, participated in exchange for a cinema voucher. Benjamin Fagard of the *Trajectoire* project provided transcribed data from 17 (10 female, no data on mean age) native speakers of French. Eight of these were native French, five speakers of Quebec French and four of Belgian French. Although the French-speaking group was comprised of three different regional varieties of the language, intra-varietal differences were found to be relatively minor (Fagard private

communication) and thus considered not to affect the main topic for the present study, i.e. the expression of motion situations.

Trajectoire has three predefined viewing orders with stimuli randomized differently. Roughly one third of the participants viewed each order. The elicitations were conducted in a small quiet room at the Centre for Languages and Literature, Lund University. Audio and video recordings were made with a DV camera.

After signing forms of informed consent, participants were asked to take a seat in front of a laptop with a 15.4" screen. The instructions were orally given to all participants in their native tongue, freely translated to English as follows. "You will see a series of short videos in which one or more persons do something. After each video, please describe what happened". The test began with a practice session comprised of two trials (the same for all participants), after which the participants were free to ask questions. Some participants expressed uncertainty about how elaborate the descriptions should be. The researcher reminded participants to focus their description on "what happens" in the clip and preferably omit precise descriptions involving details about the persons and environments shown.[25]

Each clip was preceded by a three second long intermission in the form of a black screen. This black screen was displayed on the monitor when participants described the clip that they had just seen. No time limit for the duration of descriptions was set. Were participants to stray too far off topic, they were reminded of the task. For the Swedish and Thai groups, a structured post-test interview was conducted where participants were asked the questions:

(1) How did you experience your participation?
(2) Was something unclear to you?
(3) Can you figure out the purpose of the study?

One participant reported discomfort while several found the task somewhat tedious. None detected the purpose of the study. A common answer to the final question for the Swedish participants was that they suspected that it concerned how describing numerous similar events affected given and new information.

[25] There are slight differences between the elicitation procedures, since the French data was not gathered at the same time and within the same research project as the other two languages. Here, I describe the procedure for eliciting descriptions in Swedish and Thai.

3. Analysis and coding

The coding system has to accommodate the distribution of motion information at the levels of individual words, clauses and entire descriptions, which was achieved by coding the data for form, meaning and the mapping between the two, which was realized by processing the elicited data in five steps.

Step 1: Transcription and transliteration

Recordings were transcribed using the software *ELAN* (Sloetjes and Wittenburg 2008) with links to the video file, as shown in Figure 4-2 with separate tiers for utterance, the part of utterance containing motion information, gloss and translation.[26] Transcriptions were exhaustive, except for noises, interruptions and comments (e.g. 'I am tired', 'this is boring') and were done in the standard orthography of the language.

For Thai, this involved an additional step of automatic transliteration into Latin orthography. The transliteration was carried out with software based on The Royal Institute of Thailand's system for transliterating Thai words to the Latin alphabet (see Kanchanawan, 2006 for details). Unfortunately, this transliteration system and its software implementation do not mark lexical tone or differentiate between short and long vowels. This led to numerous instances of "false homonymy". For example, the distinct Thai lexemes *kháw* ('3rd person singular pronoun), *khâw* ('enter') and *khǎw* ('mountain') were all transliterated as "khao". The conflation of different lexemes was corrected by manually checking all descriptions and disambiguating on the basis of context, see Step 4 below.

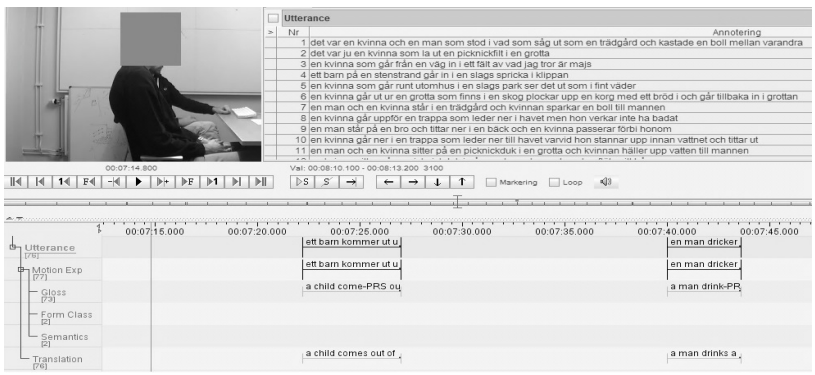


Figure 4-2. Snapshot of the transcribed Swedish data in ELAN

[26] The two tiers "Form class" and "Semantics" shown in Figure 4-2 were not used.

Step 2: Glossing

The transcribed data was exported to Excel where descriptions were segmented into clauses. All word-forms were provided with a lexeme, English gloss and morpho-syntactic code according to a simple version of "the Leipzig Rules".[27] The morpho-syntactic coding was simplified in two respects. First, English translations were used instead of grammatical/semantic categories for closed-class items. Secondly, morpheme boundaries were marked only to ease comprehension or when two or more morphemes of the same word expressed different spatial categories.

Step 3: Automatic coding

All lexemes that could express spatial meaning were manually coded for the categories and values of Holistic Spatial Semantics described in Chapter 3. The values for each category are detailed in Table 4-3. In order to handle lexemes that are ambiguous between different values or different categories, such lexemes were marked for all possible values separated by "%". For instance, *dyka* ('dive') expresses both a vertical motion, i.e. Direction, or the type of movement when swimming under water, i.e. Manner. To accommodate both senses in the automatic coding, the column for Direction was marked both with "0" (no value for the category in question), and "Down" (i.e. "0%Down"). Similarly, the Manner-column was marked "0%Body". These ambiguities were manually resolved for each specific utterance in Step 4.

Together with the morpho-syntactic coding, English glosses and lexemes, this resulted in a "lexicon" of all words that occurred in the data, shown in Figure 4-3 with separate columns for lexeme, English gloss, form class and all semantic categories together with "Emgt" (emergent), described in more detail below. The grammatical and semantic information for each lexeme was then automatically linked to the utterance and the clause in which the corresponding lexeme occurred, providing a grammatically and semantically tagged corpus.

[27] "The Leipzig Rules" provide standardized rules and abbreviated category labels for interlinear glossing. See http://www.eva.mpg.de/lingua/resources/glossing-rules.php for more details.

Table 4-3. The categories and values of Holistic Spatial Semantics used in the coding

Category	Values	
Frame of Reference	GEOCENTRIC (GC)	
	VIEWPOINT-CENTERED (VC)	
	OBJECT-CENTERED (OC)	
Region	INTERIOR	EXTERIOR
	ABOVE	UNDER
	IN FRONT	BEYOND
	SURROUND	BESIDE
	RIGHT SIDE	LEFT SIDE
	AT	
Path	BEGINNING	MIDDLE
	END	PLACE
Direction	UP (GC)	TOWARD VIEWPOINT (VC)
	DOWN (GC)	AWAY VIEWPOINT (VC)
		LEFT (VC)
	TOWARD LM (OC)	RIGHT (VC)
	AWAY (OC)	
	FOLLOW (OC)	
	FORWARD (OC)	
Manner	ACTIVITY	BODY
	FORCE	SHAPE
	VELOCITY	
Motion	YES/NO	
Figure	YES/NO	
Landmark	YES/NO	

Lexeme	Gloss	Form Class	FoR	Path	Dir	Reg	Mot	Fig	LM	Emgt	Man
jogga	jog	v	0	0	0	0	1	0	0	0	body
kamera	camera +the	n_det	0	0	0	0	0	0	1	0	0
kamma	comb	v	0	0	0	0	0	0	0	0	0
kanske	maybe	adv	0	0	0	0	0	0	0	0	0
kant	edge+th e	n_det	0	0	0	0	0	0	0	0	0
karg	barren	adj.comp	0	0	0	0	0	0	0	0	0
kasta	throw	v	0	0	0	0	1	0	0	0	body

Figure 4-3. A sample of the coded data, here for Swedish

Step 4: Manual clean-up

Re-inserted in their linguistic contexts, all lexemes were manually checked for possible errors in the coding. Most mistakes were due to the automatic transliteration of Thai described above. Additional mistakes were mostly due to overgeneralization. For instance, the Swedish preposition/adverb *av* ('of'/'off') was automatically coded for Path:BEGIN, including overgeneralizations in the case of genitive uses as *sidan av en grotta* ('the side of a cave') which were then re-coded in the manual analysis. These error-types in the coding, between 50 and 100 for each language, were logged separately. The corpus was then searched for all descriptions in which these lexemes occurred and when required, the semantic code was removed from the lexeme.

There were also occasions when the semantic categories could not easily be mapped onto an individual lexeme. To handle this, two strategies were used: the first concerns covertly expressed semantic categories (see Chapter 2, Section 2). In specific linguistic contexts, words can express non-typical meanings. A characteristic example is *försvinna* ('disappear'), which can be used to convey the meaning of translocative motion continuing beyond the observer's perceptual field, as in (4). In this specific linguistic and situational context, not only the overt meaning of disappearance is expressed, but also the covert meaning of Motion. To code for this, the coding category "Emergent" was used.

(4) En man **försvinn-er** in i ett buskage.
DET.INDF man **disappear-PRS** in in DET.INDF shrubbery
'A man disappears into a shrubbery.'

A second, less common strategy involved fusing recurrent word combinations into *lexicalized phrases* (cf. Pawley and Syder 1983) An example is *höger om* ('on the right side of') which provides the specification of Region from a Viewpoint-centered FoR and is thus coded for both FoR and Region. In contrast, *höger* would only express the Viewpoint-centered FoR. The criterion for introducing such new items was systematic co-occurrence of parts that when combined introduce a facet of spatial meaning not directly deducible from the parts.

Step 5: Using the corpus

With all errors corrected, the data corpus contained a list of all lexemes with semantic codes linked to the description with information about clause number, word number and the classification of the video clip. The elicited descriptions were coded for the following:

- Lexeme
- Gloss
- Form class
- Semantic Categories (values for each category are specified in Table 4-3 above):
    - Frame of Reference
    - Path
    - Region
    - Direction
    - Motion
    - Figure
    - Landmark
    - Emergent
    - Manner

With this coding, it was possible to detect how the languages differ with respect to the mappings between form and meaning. The three types of form-meaning mappings proposed by HSS – *complementarity*, *conflation* and *distribution* – were, in terms of the coding format, formulated as the following rules:

i. If a word-form has a value for only one semantic category, then the mapping is one of *complementarity* (compositionality).
ii. When a word-form has a value for more than one semantic category, then these categories are *conflated* in one form.
iii. A semantic category expressed in more than one form can be *distributed* across several forms.

In HSS, the clausal level is the most relevant level for detecting patterns of complementarity, conflation and distribution. In the lexical corpus, words were coded horizontally and descriptions could be read vertically. Arranged in this way, it was difficult to perform clausal analysis. For this reason, the data was also organized on a clausal basis. The data arranged in the two formats of clauses and individual words complemented one another. The format used depended on the character of the research question: When investigating individual words in terms of e.g. type-token frequency and conflation patterns, the lexical corpus was preferred. For answering questions about general pattern of expressing motion and distribution of semantic categories, the clause-based arrangement was favored.

4. Research questions

The research questions can be divided in two connected parts: one qualitative and one quantitative. Based on Holistic Spatial Semantics (HSS), motion information is expected to include not only Path and Manner across verb roots and their associates, but also semantic categories such as Frame of Reference, Direction and Region are relevant in expressing motion situations, and can be hypothesized to be expressed in form classes such as adverbs, particles, prepositions, verbs and nouns. The list of form classes is of course dependent on the languages investigated, but these five were expected to form the nucleus for Swedish, French and Thai. The semantic categories are assumed to be universal and should therefore be present in all three languages. The main research questions were the following:

- Do the three languages express all semantic categories of HSS?
- What form classes are involved in the mapping?
- How are the semantic categories conflated and distributed in the three languages?
- How do the patterns differ across the three languages? Does Thai manifest a "third type" that is systematically different from Swedish (S-language) and French (V-language)?

5. Results

Here, I analyze and describe the overt expression of the semantic categories in terms of complementarity, conflation and distribution. Covert expression is mainly discussed in Section 7. I describe how the speakers of the three languages expressed the categories of HSS and how these correlate with the type of motion situation. In this chapter, the data is treated qualitatively rather than quantitatively. Complemented by native-speaker intuition, this analysis provides insights into the semantic space of (translocative, self-caused) motion in the three languages, which will be complemented by a quantitative treatment of the data in the subsequent chapter.[28] With the exception of FoR, all five semantic categories involved in expressing motion are discussed in detail below. The omission of FoR is not due to irrelevance; on the contrary, its importance for spatial semantics is such that it

[28] The native-speaker intuitions are those of the researchers who conducted the studies with the Swedish, French and Thai groups: the author, Dr. Benjamin Fagard and Soraya Osathanonda, respectively.

surfaces in relation to all other categories. The category is therefore best approached through the other categories.

5.1 Region

The values of the category Region have been found to be cross-linguistically variable. Still, for the purposes of motion semantics, it is possible that the important contrastive values INSIDE/OUTSIDE, IN FRONT/BEHIND and UNDER/ABOVE are universal. These values are in any case highly relevant for all three languages. In (5)-(7), the contrast between moving into and out of a container-type Landmark is exemplified. As can be seen, the three languages rely on overlapping and different resources for expressing the change in Region. The French speakers used verbs and prepositions, Swedish speakers used adverbs and prepositions and Thai speakers used verbs and prepositions.[29]

(5) Un garçon **entre/sort** **dans/de** la caverne.
DET.INDF.M boy **enter.3sg.prs/exit3sg.prs** **in/from** DET.DEF.F cave
'A boy enters/exits the cave.'

(6) En kvinna går **in/ut** **i/ur** en grotta.
DET.INDF woman walk-PRS **in/out** **in/out-of** DET.INDF cave
'A woman walks into/out-of a cave.'

(7) Phûchai doen **khâw/oòk** **0/chaàk** thâm.
boy walk **enter/exit** from cave
'A boy walks into/out of a cave'

In general, locative Region-specifications tend to be provided by prepositions in all three language groups. As exemplified in (6), different values for Region in Swedish can be provided by adverbs often conflated with Path (or Direction) and, as we shall see in Section 5.4 participate in patterns of distributing the expression of Path and Region across several form classes. Similarly, Thai and French have verbs that conflate Region with Path and Motion. These will be discussed in respective sections below.

In Thai, there seems to be a dedicated form class for the expression of Region: *Region-nouns* (Zlatev 2003). These words share properties of both nouns and adpositions, but their status is somewhat ambiguous in Thai and typologically related

[29] As suggested in Chapter 3, what are considered as satellites in a Talmian analysis of Swedish are, following Sjöström (1990) and Zlatev (1997) treated as *adverbs*.

languages. They are analyzed as prepositions by Noss (1964) and relational nouns by Indrambarya (1995). There are reasons to analyze them as an independent form class. Syntactically, they are the head of the noun phrase they appear in; semantically, they express only Region and should therefore be considered different from spatial prepositions in Thai, which rather express Path (see *Path* below). In the data, Region-nouns are prolific in the different values expressed for Region, including ABOVE, BEHIND, BESIDE, IN FRONT, INTERIOR, LEFT SIDE, OPPOSITE, EXTERIOR and UNDER.[30]

A particularly striking feature of Region-nouns is to combine with the nouns *daân* or *khaâng* both expressing 'side', shown in (8) and (9), to express compound expressions profiling a specific value of the category Region, as shown in (10) and (11), in combination with the Region-nouns *lang* ('back') and *nâ* ('face').[31] Even if there are some differences in the meaning of *daân* and *khaâng*, their spatial meaning overlaps.

(8) Phûchai nâng yù **khaâng** sà nám.
man sit PROG **side** pond water
'A man is sitting by the side of a pond.'
(Tr_Th_14_005_Filler_M_feed_ducks)

(9) Phûyiˇng doen oòk ma chaàk **daân** nuèng khoˇng thànoˇn.
woman walk exit come from **side** one of road
'A woman walks coming from the side of the road.'
(Tr_Th_1_048_Path_F_ walk_across _path_sideLR)

(10) Phûyiˇng doen ma **khaâng+nâ** tônmaí yaì.
woman walk come side+front tree big
'A woman walks coming in front of a big tree.'
(Tr_Th_13_051_Path_F_cross_field_front)

(11) Phûyiˇng kamlang wîng phaàn **daân+lang** khoˇng tônmaí.
woman PART.ASPECT run pass **side+back** of tree
'A woman passes behind a tree running.'
(Tr_Th_1_043_Path_F_run_behind_tree_sideRL)

[30] The Zapotec languages have features similar to region-nouns. In these languages, body part nouns can be used for providing spatial specifications (cf. Jensen de Lopez 2002).

[31] All examples from the data are given followed by a code in the following format: "Study_Language_Participant ID_Clip Number_Clip Description".

5.2 Manner

All three languages utilize verbs for expressing Manner, but to different extents. Dependent on the type of motion situation and the distribution of semantic information across the clause, French is less inclined to use Manner (see Sections 5.3 and 5.4 below and more details in Chapter 5). Swedish on the other hand typically realizes Manner in the main verb for all types of motion situations. Thus, Manner-verbs can be used to describe translocative motion, an in (12) and (13) where adverbs and prepositions specify that the motion leads to a change in location (Path:END and Path:MID, respectively). They can also be used together with a preposition expressing location (Path:PLACE), hence expressing non-translocative motion (14).

(12) En man **gå-r** **in** **i** ett buskage.
DET.INDF man walk-PRS in in DET.INDF shrubbery
'A man walks into a shrubbery.'
(Tr_Sw_2_056_Path_M_walk_into_bush_back)

(13) En man **hoppar** **över** en trädstam.
DET.INDF man **jump-PRS** **over** DET.INDF log
'A man jumps over a log.'
(Tr_Sw_5_072_Path_M_jump_over_tronc_back)

(14) En kvinna **gå-r** **i** en park.
DET.INDF woman go-PRS in DET.INDF park
'A woman walks around in a park.'
(Tr_Sw_2_051_Path_F_cross_field_front)

The decision to code *gå* ('walk', 'go') as a Manner-verb is based on the nature of the stimuli as primarily involving the walking-type of Manner, which in Swedish is by default expressed with *gå*. Any other verb for a walking-type Manner adds some additional information not expressed by *gå*. For instance, *strosa* is to walk-for-leisure; *promenera* is a pleasurable walk. However, this verb in Swedish is semantically general and does not only express a walking-type Manner, but also has a deictic component.

Two additional ways for expressing Manner can be detected. First, Manner can occur in the participle form together with the Viewpoint-centered Direction verb *komma* ('come'). This is shown in (15). The reverse, i.e. Manner in the main verb and Direction or Path in the participle form, is not possible (see Section 5.5). A second possibility is shown in (16) where two Manner-verbs are combined to profile two different parts of a complex motion situation.

(15) En kille **komm-er** **gå-ende** längs en stig.
DET.INDF guy **come-PRS** **walk-PRS.PTCP** along DET.INDF path
'A guy comes walking along a path.'

(Tr_Sw_4_067_Path_C_walk_down_path_front)

(16) En man **springer** **och** **hoppar** över en stam.
DET.INDF man **run-PRS** **CONJ** **jump-PRS** over DET.INDF log
'A man runs and jumps over a log.'

(Tr_Sw_6_072_Path_M_jump_over_tronc_back)

The French speakers expressed Manner either in the main verb (17) or as verb-participle (18). The former sentence specifies the typical non-translocative use of Manner-verbs; the latter when used with a main verb specifying Path.

(17) Un garçon **marche** **sur** de-s rocher-s.
DET.INDF.M boy **walk.3SG.PRS** **on** IND.PL rock-PL
'A boy walks on the rocks.'

(Tr_Fr_17_076_Path_C_Walk_Down_Rock_Front)

(18) Un garçon **traverse** la plage en **cour-ant.**
DET.INDF.M boy **cross3SG.PRS** DET.DEF.F beach **run-PRS.PTCP**
'A boy crosses the beach running.'

(Tr_Fr_14_042_Path_C_run_behind_stone_sideLR)

In (17), the motion situation is non-translocative and when it is translocative (18), Manner can be expressed in a verb-particle, in accordance with the so-called "boundary crossing constraint" (see Chapter 3). While there are strong tendencies to avoid Manner-verbs with Path-information in the same clause (see Chapter 5) in French, a main Manner-verb can be used together with prepositions expressing Path, as in (19). This preference to avoid Manner-verbs for bounded translocations is loosened for unbounded translocation (20). In fact, some French speakers used a main verb to express Manner with a Direction-verb in the gerundive (participle) form, as in (21). This appears to be more common when the motion is vertically inclined, which is in line with the observation that Spanish speakers do not obey the boundary-crossing constraint for vertical motion (Naigles *et al.* 1998) and something that we will return to. As I will discuss further in Section 5.5, this adds further support for the separation between the semantic categories Path and Direction.

(19) Celle qui **marche** **de** l'arbre
DET.DEM.F COMP.REL **walk.3SG.PRS** **from** DET.DEF.M.tree

au sous-bois.
to.DET.DEF.M undergrowth
'The one who walks from the tree to the undergrowth.'
(Tr_Fr_3_051_Path_F_Cross_Field_Front)

(20) Un homme **marche** **vers** une femme.
DET.INDF.M man **walk.3SGPRS** **towards** DET.INDF.F woman
'A man walks towards a woman.'
(Tr_Fr_14_036_Path_M_walk_toward_F_back)

(21) Un monsieur qui **court** dans un sentier
DET.INDF.M sir COMP.REL run.PRS in DET.INDF.M path

en **montant** une côté.
ASCEND.PTCP DET.INDF.F slope
'A man that runs up a slope on a path.'
(Tr_Fr_1_037_Path_M_run_up_from_river_back)

Manner-verbs in Thai can be freely used in the description of both translocative and non-translocative situations. In the former case, Manner-verbs can form serial-verb constructions (SVCs) with Path- and/or Direction-verbs, as in (22), or with a preposition expressing Path, as in (23). As seen in the former, when a Manner-verb occurs in an SVC, it does so as the first verb in the sequence. The sentence in (24) shows two Manner-verbs used in the same clause to convey a motion situation consisting of two distinct activities. In (25), *doen* ('walk') is used with the Region-noun *bon* ('on top'*)* and thus occurs in a clause expressing non-translocative motion.

(22) Phûyi˘ng khon nuèng **doen** **phaàn** tônmaí.
woman CLF NUM **walk** **pass** tree
'A woman walks past a tree.'
(Tr_Th_4_040_Path_F_walk_front_tree_sideRL)

(23) Dèk+phûchai **kradoòt** nám **chaàk** nâpha˘a.
boy **jump** water **from** cliff
'A boy jumps (into) the water from a cliff.'
(Tr_Th_7_064_Path_C_jump_from_cliff_into_water_sideLR)

(24) Phûchai **wîng** **kradoòt** khaâm khon-maí.
man **run** **jump** cross tree-log
'A man runs and jumps over a log.'

(Tr_Th_11_072_Path_Jump_Over_Tronc_Back)

(25) Phûyiˇng **doen** yù **bon** sânaˇm yà.
woman **walk** PROG **on.top** yard grass
'A woman is walking on a lawn.'

(Tr_Th_2_051_Path_F_cross_field_front)

In sum, while all three languages have Manner-verbs, they are used differently in bounded translocative situations. The French speakers often used gerunds/participles for expressing Manner and when the main verb expresses Manner and Path is expressed by a preposition (see below), then the interpretation is not necessarily translocative. I would therefore like to return to the distinction between translocative and non-translocative motion discussed in Chapter 3. There are Manner-verbs that can participate in expressing translocation and those that cannot. This is not to say that verbs are either one or the other. Many are ambiguous and their meanings depend on the surrounding elements. Manner-verbs related to translocation are called *path-related Manner-verbs* by Rojo and Valenzuela (2004). In the following sections, I will refer to such verbs as *potentially translocative verbs* rather than (only) as Manner-verbs. Such verbs that can express translocation when combined with elements of Path and Direction are for example *springa* ('run') in Swedish or *marcher* ('walk') in French, as shown in (19).

In contrast to verbs that can be either translocative or not depending on context (whose signification is ambiguous in this respect), we can propose that there are those that always express translocation (at least in the context of actual motion), such as Swedish *korsa* ('cross'), French *entrer* ('enter') and Thai *khâw* ('enter') (see Sections 5.3 and 5.4). Just as we can expect to encounter such inherently translocative verbs, we can also expect verbs prone to the opposite reading: inherently non-translocative verbs. Possible candidates are verbs that express movement of parts of the body or verbs that express ways to alter or manipulate an object. For instance Swedish *böja* ('bend') and *breda* ('spread') refer to non-translocative activities, as shown in (26) and (27). When such verbs are combined with elements that would express translocation with a potentially translocative verb, the interpretation cannot be one of change-of-location. In fact, the preposition *in* and the adverb *ut* are given different

interpretations in these sentences than when they occur together with a potentially translocative verb.[32]

(26) Gustav Vasa drog in mage-n.
Gustav Vasa pull.PST in knee-DET.DEF
'Gustav Vasa pulled in his belly.'

(27) Magnus Ladulås bredde ut filt-en.
Magnus Ladulås spread.PST out blanket-DET.DEF
'Magnus Ladulås spread the blanket.'

Thus, whether a verb can be combined with other elements to form an expression of translocation is the litmus test of whether the verb is potentially translocative or not. Conversely, the reading of a non-translocative verb cannot be altered to a translocative one and vice versa for a translocative verb. This topic will recur as we continue to charter the territory of Motion.

5.3 Path

This and the subsequent section are closely related. In this section, I discuss *Schematic Path*, which is defined as the specification of a translocative situation with respect to one or more of the following: BEGINNING, MIDDLE, END. The next section is concerned with the combination of Path and Region-information in expressions of state-transition from inside to outside and vice versa.

To express bounded translocation, Swedish uses prepositions together with a potentially translocative verb, as shown in (28).

(28) En man **går/springer/vandrar från/förbi/till** ett träd.
'A man walks/runs/hikes from/past/to a tree.'

[32] According to Construction Grammar, the meaning of whole sentences results from the combination of individual word-meanings and the meaning of the construction. In the example *He blew the napkin off the table* (Goldberg 1995), the verb does not express Motion, but the sentence is interpreted as one where the napkin changes location. Thus, the construction as such forces the verb *sneeze* into an interpretation that is not part of the verbal semantics. It is not my contention to deny this point. What I insist on is that Motion-verbs also seem to reflect the differentiation between inner and outer motion (Chapter 1 and 3). Languages treat this opposition differently and make the demarcation with different resources, of which construction types is one kind and the distribution of labor between verbs and other form classes is another another.

In addition to this, two Path-verbs are encountered in the Swedish data. These are *korsa* ('cross') and *passera* ('pass'), both expressing Path:MID. Since these verbs can describe bounded translocations without a complement, such as a prepositional phrase, they should be classified as Path-verbs, as illustrated in (29) and (30).

(29) En man **korsa-r** en stig.
DET.INDF man **cross-PRS** DET.INDF trail
'A man crosses a trail.'
(Tr_Sw_3_049_Path_M_walk_across _path_sideRL)

(30) En man **passera-r** ett träd.
DET.INDF man **pass-PRS** DET.INDF tree
'A man passes a tree.'
(Tr_Sw_12_040_Path_F_walk_front_tree_sideRL)

Despite their similarity, the two verbs differ slightly. The first thing to note is that *passera* ('pass') can be combined with a preposition, also expressing Path:MID (31), but this is not the case for *korsa* ('cross'). Semantically, the latter profiles the intermediate of translocating from one side to the other, but the former emphasizes moving next to a landmark. Thus, while they both express Path:MID, they could be seen as differing in the value for Region. A similar case can be made for the Thai verbs *phaàn* ('pass') and *khaâm* ('cross').[33]

(31) En man **passera-r/** ***korsa-r** **förbi** ett träd.
DET.INDF man **pass-PRS** **cross-PRS** **by** DET.INDF tree
'A man passes/crosses by a tree.'

French conflates Motion with all of the three values for Path in the verb. The sentences below all conflate Path with Motion in the verb: (32) expresses Path:BEGIN, (33) expresses Path:MID and (34) shows an expression of Path:END. In these examples, Path is expressed only in the verb.[34]

[33] Following linguistic convention, "*" indicates a grammatically incorrect sentence and "?" a deviant or semantically odd sentence.

[34] Many verbs that introduce a bounded translocation in French are not mainly Motion-verbs, e.g. *quitter* ('leave') and *laisser* ('to let', 'leave'). Swedish has similar verbs, e.g. *börja* ('begin'), *fortsätta* ('continue') and *försvinna* ('disappear').

(32) Une fille qui était proche d'un
DET.INDF.F girl COMP.REL be.3SG.PST close to.DET.INDF

arbre qui **part** à la course.
tree COMP.REL **leave.3SG.PRS** at a run
'A girl who close to a tree leaves running.'
(Tr_Fr_9_033_Path_F_run_awayfrom_tree_front)

(33) Trois femme-s **travers-ent** un pont.
Three woman-PL **cross-3PL.PRS** DET.INDF.M bridge
'Three women cross a bridge.'
(Tr_Fr_14_045_Path_3_ walk_across _bridge_back)

(34) Cette même femme **arriv-ant** devant l' arbre.
DET.DEM.F same woman **arrive-PTCP** in.front.of DET.DEF.F tree
'The same woman is arriving in front of the tree.'
(Tr_Fr_5_040_Path_F_walk_front_tree_sideRL)

Not all Path-verbs in French occur without a preposition for Path, as shown in (35). In this sentence, both the verb and the preposition express Path:BEGIN which means that it is distributed across both forms. This pattern of distribution can be expressed as in (36).

(35) La femme qui **part** **de** l'arbre.
DET.INDF.F woman COMP.REL **leave-PRS** **from** DET.DEF.F tree
'The woman who leaves from the tree.'
(Tr_Fr_6_032_Path_F_Walk_AwayFrom_Tree_Front)

(36) V Prep
Path:BEGIN Path:BEGIN
Motion

In the previous section, I noted that Manner-verbs in French are less compatible with translocation than in Swedish. Since the same prepositions can occur together with both Manner- and Path-verbs, this would suggest that spatial prepositions together with a Manner-verb are interpreted locatively rather than translocatively. One way to read this is that these prepositions in French are underdetermined and thus require a translocative verb to participate in expressing translocation. However, this does not seem to be a convincing solution. For instance the preposition *devant* ('in front of') has a locative meaning but in the context of (37), factors such as the size of the basket and the general situation suggest that the basket is something that is passed. This can be phrased as the preposition covertly expressing Path:MID.

(37) Il **marche** **devant** le panier.
3SG.M **walk.3SG.PRS** **in.front.of** DET.DEF.F basket
'He walks past the basket.'
(Tr_Fr_4_060_Path_M_walk_out_cave_pass_walk_into_cave_side)

Furthermore, while Manner-information may be avoided in contexts of translocation this is not the case for Direction-verbs. These can be combined with prepositions to express bounded translocations. In (38), the Viewpoint-centered verb *venir* ('come') is used together with the preposition *de* ('from') to express a bounded beginning whereas (39) expresses a bounded endpoint with the preposition *à* ('to') with the Geocentric verb *remonter* ('go up again').

(38) Elle **vient** **d'**un endroit.
3SG.F.PRN **come.3SG.PRS** **from** DET.INDF.M place
'She comes from a place.'
(Tr_Fr_7_033_Path_F_run_awayfrom_tree_front)

(39) Une femme **remonte** le-s marches **à** côté
DET.INDF.F woman **go.up.again.3SGPRS** DET-PL stair. PL **to** side

d' une grotte.
of DET.INDF.F cave
'A woman goes back up the stairs to the side of a cave.'
(Tr_Fr_14_071_Path_F_walk_up_stairs_back)

Finally, there are examples of potentially translocative Manner-verbs that are used to yield translocative interpretations: with one Landmark in (40) and with two Landmarks in (41). This opens up the question on how to interpret the spatial meaning of some prepositions in French, for instance *à* and *de*. In (41), *à* specifies Path:END, but this is not to say that the preposition always expresses a translocative meaning. In (42), it specifies a location (Path:PLACE). It is possible that the preference to not express translocation as Manner-V+Path-Prep is relaxed when the motion occurs along the vertical axis, as with the verb *sauté* ('jump'). In other words, it would be wrong to conclude that spatial prepositions are static by default and that their value for Path is dependent on the verb they occur together with. We will return to the relation and interaction between prepositions and verbs in the following section.

(40) Le petit garçon **saute** **du** rocher.
DET.DEF.M small boy **jump.3SG.PRS** **from.DET.DEF.M** rock
'The small boy jumps from (a) rock.'
(Fr_17_075_Path_C_jump_from_rock_to_rock_side)

(41) Un garçon qui **saute** **d**'une
DET.INDF boy COMP.REL **jump.3SG.PRS** **from** DET.INDF.F

pierre **à** l'autre.
stone **to** DET.DEF.F another
'A boy who jumps from the stone to another (one).'
(Tr_Fr_11_075_Path_C_jump_from_rock_to_rock_side)

(42) Une femme qui **marche** dehors dans un
DET.INDF.F woman COMP.REL **walk.3SG.PRS** outside in DET.INDF.M

parc **à** l'ombre.
park **at** DET.DEF.M shade
'A woman who walks outside in a park in the shade.'
(Tr_Fr_7_051_Path_F_cross_field_front)

In sum, Path is expressed by the verb in French but several Path-verbs are compatible with, and some even require a preposition. Also, Path can be expressed only by a preposition together with potentially translocative Manner- and Direction-verbs.

In many cases, the Thai speakers expressed bounded translocation in a similar way as the Swedish group: with the combination Manner-verbs and Path-prepositions, such as the prepositions *chaàk* ('from') and *yang* ('to'), shown in (43) and (44).

(43) Dèkchai **kradoòt** **chaàk** kônhi˘n.
boy **jump** **from** stone
'A boy jumps from a stone.'
(Tr_Th_4_034_Path_C_jump_from_stone_run_front)

(44) Phûyi˘ng **long** **pai** **yàng** rim sà.
woman **descend** **go** **to** edge pond
'A woman goes down to the edge of a pond.'
(Tr_Th_4_073_Path_F_Walk_Down_To_Lake_Back)

But in other cases, the Thai participants used Path-verbs similarly to the French speakers. The verbs *phaàn* ('pass'), *khaâm* ('cross') and *tàt* ('cut-through') specify Path:MID. They typically combine with potentially translocative Manner-verbs, as shown in (45)-(47), but can also occur as the only verb in the clause. In the data,

there are no verbs for Path:END and Path:BEGIN that do not express Region-change as well.[35]

(45) Phûyi˘ng **doen** **phaàn** tônmaí yài.
woman **walk** **pass** tree big
'A woman walks past a big tree.'
(Tr_Th_6_040_Path_F_walk_front_tree_sideRL)

(46) Phûchai **doen** **khaâm** sâna˘m yà.
man **walk** **cross** yard grass
'A man walks crossing a yard of grass.'
(Tr_Th_12_052_Path_F_cross_field_back)

(47) Phûchai **doen** **tàt** sâna˘m yà.
man **walk** **cut-through** yard grass
'A man walks cutting through a yard of grass.'
(Tr_Th_6_039_Path_M_walk_behind_tree_sideLR)

To summarize, all three languages encode Path in prepositions and verbs. Whereas French has verbs for all three values of Path, Swedish and Thai have verbs only for Path:MID. As we address Region-change, however, these generalizations will require some adjustment.

5.4 Region-change (Path+Region)

We now turn to expressions where Path and Region are conflated and distributed across the clause, what I called *Region-change* in Chapter 3. In this section, I exclusively target expressions of Region-change where the Figure translocates *and* changes value of Region between INTERIOR and EXTERIOR. This focus is due to the following factors: (a) in such expressions, the semantic categories of Path and Region are overtly marked in the three languages and (b) Path and Region interact in interesting patterns of conflation and distribution across the clause.

In Swedish, the change between INTERIOR and EXTERIOR is expressed with a potentially translocative Manner-verb combined with an adverb and a preposition (48).

[35] However, there is at least one Thai verb that did not occur in the data, *teung* ('reach'), which expresses Path:END.

(48) Ett barn **gå-r** **in** **i** en spricka.
DET.INDF child **go-PRS** **in** **in** DET.INDF crack
'A child walks into a crack.'
(Tr_Sw_2_058_Path_C_walk_into_cave_sideRL)

Since the state-transition is finalized, the Figure has become located inside the Landmark. In other words, Path:END is conflated with Region:INTERIOR in the adverb *in* ('in'). This means that both the sense of state-transition and the localization inside a container is encoded in the adverb. While the adverb can occur with a potentially translocative Motion-verb, it may also join with the preposition *i* ('in') expressing location inside Landmark, i.e. Region:INTERIOR. Since this value for Region is expressed *both* in preposition and adverb, we are encountering our first pattern of distribution for Swedish. This pattern of conflation and distribution is described in (49).

(49)

V	*in*	*i*
Motion	Region:INTERIOR	Region:INTERIOR
Manner	Path:END	

As we turn to the opposite direction, i.e. Motion from the inside of a Landmark to the outside, Swedish attests a seemingly similar pattern of distribution. In (50), an adverb and a preposition specify the change from inside to outside.

(50) En kvinna **gå-r** **ut** **ur** en grotta.
DET.INDF woman **go-PRS** **out** **of** DET.INDF cave
'A woman walks out of a cave.'
(Tr_Sw_12_023_Path_F_walk_outof_cave_front)

The adverb *ut* is semantically and grammatically similar to *in* but specifies the opposite direction. However, in contrast to *i*, the preposition *ur* is not locative; it does not locate the Figure outside the Landmark, but expresses the transition from inside to outside. Indicative in this regard is that the preposition together with a potentially translocative verb expresses state-transition, as in (51). This may be compared with the locative preposition *utanför* ('outside') in (52), where the Landmark is specified as the location for the activity of walking. Thus, where *ur* conflates Region:INTERIOR with Path:BEGIN, *utanför* expresses only Region:EXTERIOR.

(51) En kvinna **går** **ur** en grotta.
DET.INDF woman **go-PRS** **of** DET.INDF cave
'A woman walks out of a cave.'
(Tr_Sw_19_029_Path_F_walk_outof_cave_up_stairs_back)

(52) En kvinna **går** **utanför** en grotta.
DET.INDF woman **go-PRS** **out** DET.INDF cave
'A woman walks outside a cave.'

(Unattested)

Is this to say that the adverb *ut* and the preposition *ur* express the same spatial meaning? No, while they largely overlap, they profile different aspects of the transition. The profiled meaning of the preposition is on *the beginning of no longer being inside*. We can compare the adverb, on the other hand, with the enter/exit-verbs in Japanese and Yucatec Maya discussed in Chapter 3. To remind, the analyses of these verbs by Kita (1999) and Bohnemeyer (2010), respectively, were that they do not express motion but rather *the state-transition from inside to outside*. With this in mind, we can illustrate the difference between *ut* and *ur* with the schematic representations in Figure 4-1. Where *ut* in (a) primarily profiles the change to outside (marked by the thick line LM), *ur* (b) is more concerned with the Figure's transition to no longer being inside (marked by the thick arrow).

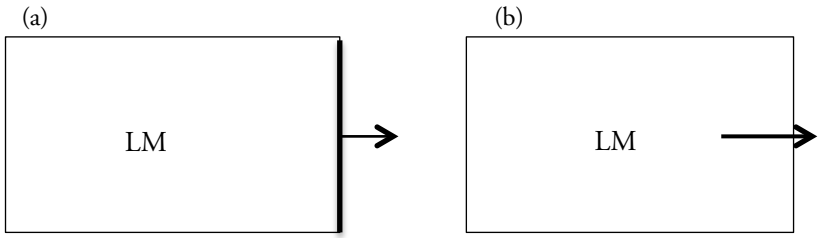


Figure 4-4. Schematic visualizations of the difference between *ut* (a) and *ur* (b)

One way to capture how the two contribute to express Region-change, but with different profiles, would be to say that they together express Path- and Region-information twice, but with complementary values (53).

(53) Motion-V	*ut*	*ur*
Motion	Path:END	Path:BEGIN
Manner	Region:EXTERIOR	Region:INTERIOR

Let us turn to French where Region-change is expressed by verbs conflating Motion with both Path and Region. These express the situation of translocating from inside to outside, as in (54), and vice versa, as in (55).

(54) Une femme **sort** **de** la caverne.
DET.INDF.F woman **exit.3SG.PRS** **from** DET.DEF.F cave
'A woman exits from the cave.'

(Tr_Fr_17_029_Path_F_walk_outof_cave_up_stairs_back)

(55) Une femme **entre** **dans** la grotte.
DET.INDF.F woman **enter.3SG.PRS** **in(to)** DET.DEF.F cave
'A woman enters into the cave.'
(Tr_Fr_15_053_Path_F_walk_into_cave_back)

The verbs in (54) and (55) require the prepositions *de* ('from', 'of') and *dans* ('in'), respectively. As we have already seen, the relation between Motion-verbs and prepositions in French is complicated. Some Path-verbs require no prepositions (e.g. *part* ('leave') and *arriver* ('arrive')) and on other occasions Path is distributed across the verb and the preposition, as in (54) and (55). Without the preposition, (54) would have the interpretation of a caused motion where the woman brings in a toy-like cave and (55) would be ungrammatical. However, when the preposition *dans* is combined with a Manner-verb (56), then it does not overtly participate in expressing Region-change but rather locates the activity of running in the water. To express Region-change and Manner, two different clauses would normally be required. Example (57) shows how French descriptions are affected by the boundary-crossing constraint (Slobin and Hoiting 1994): two clauses are needed to express both Manner and (discrete) Region-change.

(56) Un garçon **court** **dans** l'eau.
DET.INDF.M boy **run.3SG.PRS** **in** DET.DEF.F water
'A boy runs in the water.'
(Tr_Fr_14_059_Path_C_run_into_sea_sideRL)

(57) Là elle **marche**
there 3SG.F.PRN **walk.3SG.PRS**

elle **sort** **de** la grotte.
3SG.F.PRN **exit.3SG.PRS** **from** DET.DEF.F cave
'There she walks, she exits a cave.'
(Tr_Fr_2_023_Path_F_walk_outof_cave_front)

A possible analysis runs as follows. The preposition *dans* with a Manner-verb expresses Path:PLACE; with *entrer* Path:END is expressed (and, in both cases, Region:INTERIOR). In other words, the spatial meaning of the preposition is directly inherited from the verb. The same interpretation can be made for the combination of *sortir* and *de*. However, as was shown in example (19), repeated below (58), both *de* ('from') and *à* ('to') can occur with a Manner-verb and still express translocation.

(58) Celle qui **marche** **de** l'arbre
DET.DEM.F COMP.REL **walk.3SG.PRS** **from** DET.DEF.F tree

au sous-bois.
to.DET.DEF undergrowth
'The one who walks from the tree to the undergrowth.'

(Tr_Fr_3_051_Path_F_Cross_Field_Front)

From this sentence, there seem to be two interpretations of the prepositions in question. We would either be forced to see *marcher* as expressing translocation and the prepositions inheriting their translocative Path-value from the verb. Alternatively, it would be the prepositions that express a translocative value for Path, at least together with a Manner-verb such as *marcher*, and as noted in the previous section, when the verb expresses vertical motion (see (40)).[36] In other words, the Path:BEG and Path:END values are derived from the prepositions and not from the verb. With Region-change, the prepositions become incapable of expressing translocation independently, and rather "congrue" with the verb. We can summarize how preposition and verbs interact in expressing Path as in (59)-(62).

(59) *sortir*
Motion
Path:BEGIN
Region:EXTERIOR

de
Path:BEGIN

(60) (Potentially translocative) V
Motion
Manner

de/à
Path:BEGIN/Path:END

(61) *entrer*
Motion
Path:END
Region:INTERIOR

dans
Path:END
Region:INTERIOR

(62) Manner-V
Motion
Manner

dans
Path:PLACE
Region:INTERIOR

[36] It is also possible that the combination of *à* and *de* in example (58) more strongly suggests a translocative reading. Thanks to Benjamin Fagard for pointing this out.

Thai expresses discrete Region-change with verbs. These can occur as independent verbs, as in (63), together with a preposition, as in (64) or in an SVC, as shown in example (65).

(63) Phûyi˘ng **khâw** râi khaophót.
woman **enter** field corn
'A woman enters a cornfield.'
(Tr_Th_10_038_Path_F_walk_outof_field_sideRL)

(64) Phûyi˘ng **oòk** **chaàk** thâm.
woman **exit** **from** cave
'A women walks out of a cave.'
(Tr_Th_9_025_Path_F_walk_outof_cave_back)

(65) phûyi˘ng kamlang **doen** **khâw** **pai** nai thâm.
woman PROG **walk** **enter** **go** inside cave
'A woman walks into a cave.'
(Tr_Th_1_053_ Path_F_walk_into_cave_back)

There is a notable difference between *khâw* and *oòk*. Where the former can occur as the only Path-element in a clause, the latter requires the preposition *chaàk*. In this way, Path:BEGIN is distributed across both verb and preposition. Following the established notation, we can describe the distribution and conflation patterns as in (66) and (67).

(66) *khâw*
Motion
Path:END
Region:INTERIOR

(67) *oòk* *chaàk*
Motion Path:BEGIN
Path:BEGIN
Region:EXTERIOR

Apart from expressing Region-change, the two Path+Region-verbs *khâw* and *oòk* can express more abstract meanings, possibly due to grammaticalization. They can occur in translocative situations without Region-change between inside and outside, as shown in (68) and (69). In these constructions, the motion situation described is a bounded translocation without Region-change. The contribution of *khâw* can be understood as reaching the end-point of motion. In this sense, the process of walking away, expressed by *doen* and *pai* is modified into the achievement of also reaching the goal. Even more noteworthy is that *oòk* can occur in the expression of non-

translocative situations. Adding to the distribution pattern of Path, the verb then occurs without the Path-preposition *chaàk*. The non-translocative bounded motion in (70) involves *oòk*. Here, it can be interpreted as expressing the completion of the activity, as aspectual markers (Koenig and Muansuwan 2000). An additionally contributing factor could be that the motion is caused; Kessakul (2001) proposes that Thai Path-verbs function differently when caused motion is expressed. Notably, the position of the verb in question differs from expressions of Region-change, as shown in (70).

(68) Phûyi˘ng **doen** **khâw** **pai** ha˘a **tônmaí.**
woman **walk** **enter** **go** to **tree**
'A woman goes to a tree.'
(Tr_Th_2_061_Path_F_walk_toward_tree_back)

(69) Phûchai kamlang **doen** **khâw** **pai** nai mu˘ean pen
man PROG **walk** **enter** **go** inside like be

thangdoen.
path
'A man walks onto something like a path.'
(Tr_Th_1_026_Path_M_walk_into_woods_back)

(70) Phûchai kamlang **thòt** sueasawettoe **oòk.**
woman PROG **take.off** sweater **off**
'A woman is taking off a sweater.'
(Tr_Th_3_008_Filler_M_takeoff_jumper)

Even though they do not express motion per se, the Swedish Path-adverbs *in* ('in') and *ut* ('out') exhibit a somewhat similar tendency. When combined with a non-translocative Motion-verb, the adverbs take on a perfective meaning of the process reaching temporal and spatial completion. The adverb *ut* was described earlier as conflating Path with Region. When occurring together with a non-translocative verb such as *breda* ('spread'), as in (71) below, the adverb contributes to the boundedness and completion of the situation. In more general terms, the Thai verbs and the Swedish adverbs can be considered as markers of boundedness (cf. Heine and Kuteva 2002 for such paths of grammaticalizations).[37]

[37] Since these Path-verbs might be grammaticalizing, it is possible to hypothesize that Thai is moving towards a pattern where the Path-element could become the grammatical associate to the Manner-verb. Talmy (2000b, 2009) describes a similar change for Mandarin Chinese.

(71) En kvinna **bred-er** **ut** en matta.
DET.INDF woman **spread-PRS** **out** DET.INDF mat
'A woman spreads out a blanket.'

We have covered a lot of ground in this section, mainly focusing on different complex forms of distribution patterns of Region-change. When only Path is expressed, we found prepositions in all languages and also verbs for the Thai and French speakers. A novel analysis of the interplay between prepositions and verbs in French involving overt and covert distribution was proposed. When motion involves transitions between inside and outside, Path often conflates with Motion and Region in patterns of distribution across several form classes. We can relate these generalizations to the Talmian typology of motion events. The typology assumes Path to be the "core schema" of motion events (Talmy 2000b). The S-framed pattern of Swedish is found for situations involving Region-change, but complemented by a prepositional phrase. This leads to the distribution of Region- and Path-information across adverb and preposition. For French, two main observations can be made. Firstly, to express Region-change, French speakers use verbs that require a Path-compatible preposition, thus proposing that Path and Region is distributed across the two. Secondly, the same prepositions could occur with certain potentially translocative Manner-verbs and still express translocative motion. We can relate this to the observation of Aske (1989) and others that Path-verbs are needed in V-languages when there is Region-change but not in general. To this, we should also add that vertically inclined motion seems less affected by Region-change. A tentative explanation concerns the perceptual saliency of vertical motion. I discuss this further in Chapter 5 where these attested patterns are qualified against their distribution in the data. In Thai, the expression of Path can be coded in a preposition only, distributed over verb and preposition (*oòk chaàk*) or in serial-verb construction with Manner- and Direction-verbs.

5.5 Direction

Direction is the category for expressing unbounded translocation and can be defined in terms of the FoR expressed (Zlatev 2003, 2007; Zlatev *et al.* 2010). I will present Direction according to all three FoRs: VIEWPOINT-CENTERED (VC), GEOCENTRIC (GC) and OBJECT-CENTERED (OC). Direction in the Swedish group exhibited a distribution of labor, so to speak, across a number of form classes. As can be seen, adverbs such as *upp* ('up') express FoR: GC, as in example (72), prepositions in general express FoR:OC, e.g. *mot* ('towards'), as in (73), and deictic verbs like *komma* ('come') express FoR:VC (74).

(72) En pojke hoppa-r **upp** på en sten.
DET.INDF boy jump-PRS **up** on DET.INDF stone
'A boy jumps up on a stone.'
(Tr_Sw_5_062_Path_C_run_toward_stone_jump_on_stone_sideRL)

(73) Fem person-er som gå-r **mot** vattnet.
five person-PL COMP go-PRS **towards** water.DEF
'Five persons that walk down toward the water.'
(Tr_Sw_11_066_Path_5_walk_toward_lake_across_road_back)

(74) En pojke **komm-er** från vattnet.
DET.INDF boy **come-PRS** from water.DEF
'A boy comes from the water.'
(Tr_Sw_4_031_Path_M_run_outof_sea_sideRL)

The Swedish verbs *gå* ('go') and *komma* ('come') may be seen as contrasting movement away and toward the deictic center (or more generally, a viewpoint). As described above, *gå* also expresses Manner, making it less clearly deictic than *komma*.[38] In (75), the present participle of *gå* is used together with its deictic opposite as the main verb. The reverse, however, is not acceptable, as shown in (76). This implies that *komma* conveys the primary meaning of viewpoint-directed motion and *gå* contributes the Manner. It is also possible to use *gå* as main verb with other form classes expressing Direction towards VIEWPOINT, as shown in (77).[39]

(75) En kvinna **komm-er** **gå-ende** på en stig.
DET.INDF woman **come-PRS** **walk-PRS.PTCP** on DET.INDF path
'A woman comes walking on a path.'
(Tr_Sw_15_023_Path_F_walk_outof_cave_front)

(76) * En kvinna **gå-r** **komma-ndes.**
DET.INDF woman **go-PRS** **come-PRS.PTCP**
'A woman walks coming.'

[38] In addition to the verbs in question, Swedish also has two directional deictic adverbs: *hit* and *dit* (roughly 'in this direction' and 'in that direction', respectively) which clearly make the deictic differentiation. The present data set did not provide any samples of these adverbs.

[39] The verb *komma* is not deictic only in the sense of motion directed towards a viewer, but can also mean 'appear' or 'pop up'. This could be interpreted in terms of becoming present – a kind of "extended deixis". Indications of a retained deictic contrast between *gå* and *komma* are present in non-spatial uses. For instance, 'pass away' in Swedish is *gå bort* (lit. 'go away'). This euphemism for death, the eradication of being present, could be seen as motivated in (extended) deictic terms.

(77) En kvinna **gå-r** **mot** **mig**.
DET.INDF woman **go-PRS** **towards** **1SG.OBJ.PRN**
'A woman walks towards me.'

(Tr_Sw_3_051_Path_F_cross_field_front)

The Swedish adverbs *upp* ('up') and *ner* ('down') specify Direction:GC of ascending and descending motion, respectively. When combined with a potentially translocative verb, they express unbounded translocation. Analogous to the contrast between the dynamic adverbs *in*/*ut* and the locative prepositions *i*/*ute*, *upp* and *ner* can be contrasted with the locative prepositions *uppe* ('up') and *nere* ('down'), respectively. The difference is illustrated in (78) and (79). In the former sentence, Direction is expressed: the Figure has a GEOCENTRIC vector of motion. In the latter, the preposition specifies a location.

(78) Mann-en **gå-r** **uppför** en trappa.
man-DET.DEF **walk-PRS** **up.for** DET.INDF stairs
'The man walks up the stairs.'

(Tr_Sw_2_074_Path_F_walk_up_from_lake_front)

(79) Mannen **gå-r** **uppe** på tak-et.
man-DET.DEF **walk-PRS** **up** on roof-DET.DEF
'The man walks on the roof.'

(Unattested)

The adverbs for vertical Direction can participate in covertly expressing Path. When *upp*/*ner* is combined with the locative preposition *på* ('on'), the joint meaning is also one of Path:END. In (80), *upp på* ('up on') specifies not only Direction:GC and a location, but covertly expresses the translocation to a rock.

(80) Ett barn **hoppa-r** **upp** **på** en sten.
DET.INDF child **jump-PRS** **up** **on** DET.INDF rock
'A child jumps up onto a rock.'

(Tr_Sw_2_062_Path_C_run_toward_stone_jump_on_stone_sideRL)

For certain scenes of Region-change, the GEOCENTRIC Direction-adverbs seem to be preferred over Path-adverbs in Swedish. In (81), the Figure translocates to inside the water, but the typical Path-adverb *in* is changed for the geocentric adverb *ner*. In fact,

using the Path-adverb is in this context if not wrong then at least semantically odd.[40] A possibly contributing factor is life-world knowledge of beaches as often inclining near the shoreline. To compare, Thai can also use the GEOCENTRIC verb *khuên* ('ascend') in a similar way, as in (82) (Direction in Thai is discussed in more detail below).

(81) En ung pojke sprang **ner** **i** hav-et.
DET.INDF young boy run.PST **down** **in** sea-DET
'A young boy ran down into the sea.'
(Tr_Sw_2_031_Path_M_run_outof_sea_sideRL)

(82) Dèk+phûchai **khuên** **chaàk** nám.
boy **ascend** **from** water
'A boy goes up from the water.'
(Tr_Th_8_031_Path_M_run_outof_sea_sideRL)

Direction in French was expressed in nouns, prepositions and verbs. A clear division between prepositions and nouns could be detected. The former, *vers* ('towards'), expresses Direction:OC, as in (83) while the latter, *la droite* ('right') and *la gauche* ('left') expresses Direction:VC, as in (84).

(83) Un monsieur qui se **dirige** **vers**
DET.INDF.M sir COMP.REL PRON.REFL **head.3SG.PRS** **toward**

la dame.
DET.DEF.F lady
'A man heads towards a woman.'
(Tr_Fr_1_036_Path_M_walk_toward_F_back)

(84) La femme **travers-e** **de** **gauche** **à** **droite**
DET.DEF.F woman **cross-PRS** **from** **left** **to** **right**

l' image.
DET.DEF.F image
'A woman crosses the screen from left to right.'
(Tr_Fr_11_044_Path_F_run_front_tree-sideLR)

[40] What is clearly correct, however, is to say *springa ut i havet* 'run out in the sea'. That is, despite moving to the INSIDE of a container/medium, the adverb used for Region-change in the opposite direction can be used. This could be interpreted as land being conceived as inside and the sea as the outside, a reversal of what is source and goal.

Verbs also commonly express Direction in French. Below are examples of Direction:VC and OC as in (85) and (86), respectively.

(85) Là une dame **vient.**
there DET.INDF.F lady **come.3SG.PRS**
'A lady comes.'
(Tr_Fr_4_047_Path_F_ walk_across _bridge_front_man_sideLR)

(86) Une dame qui **descend** le-s marche-s.
DET.INDF.F lady COMP.REL **go.down.3SG.PRS** DET.DEF.M.PL steps-PL
'A woman goes down the steps.'
(Tr_Fr_1_022_Path_F_walk_down_into_cave_front)

As pointed out in Chapter 3, an important reason to propose Direction as an additional category derives from the difference between bounded and unbounded translocation. The constraint on combining Manner-verbs with Path-information in French and other Romance languages does not carry over to situations of unbounded translocation. The preposition *vers* ('towards') together with a Manner-verb yields an understanding in terms of unbounded translocation and cannot be interpreted non-translocatively (87).

(87) Un homme **marche** **vers** une femme.
DET.INDF.M man **walk.3SG.PRS** **towards** DET.INDF.F woman
'A man walks towards a woman.'
(Tr_Fr_14_036_Path_M_walk_toward_F_back)

Direction-verbs like *revenir* ('come-back') can, in contrast to Manner-verbs, be used unambiguously to express Region-change with the preposition *dans*, as shown in (88). Thus, the ability to readily combine Direction prepositions with Manner-verbs on the one hand, and Direction-verbs with Region-change on the other, provides support for distinguishing the category Direction from both Manner and Path.

(88) Une femme **re-vient** **dans** sa grotte.
DET.INDF.F woman **back-come.3SG.PRS** **into** DET.POSS.3SG.F cave
'A woman comes back into her cave.'
(Tr_Fr_8_022_Path_F_walk_down_into_cave_front)

In Thai, verbs are the primary form class for lexicalizing Direction. GEOCENTRIC motion contrasts upwards and downwards motion, as shown in (89) and (90).

(89) Phûyi˘ng doen **khuên** chaàk sà nám.
woman walk **ascend** from pond water
'A woman walks up from a pond.'
(Tr_Th_8_074_Path_F_walk_up_from_lake_front)

(90) Phûyi˘ng doen **long** bandai.
woman walk **descend** stairs
'A woman walks down the stairs.'
(Tr_Th_4_022_Path_F_walk_down_into_cave_front)

Thai contrasts Direction away and towards VIEWPOINT with the verbs *pai* ('go') and *ma* ('come'). These can occur alone, together with Manner-verbs, Path-verbs or with both, as can be seen in (91)-(94).

(91) Khon so˘ng khon **ma** choe kan.
person two human **come** meet each.other
Direction
'Two people come (to) meet each other.'
(Tr_Th_9_036_Path_M_walk_toward_F_back)

(92) Phûchai **doen** **pai** ha˘a phûyi˘ng.
man **walk** **go** to woman
Manner **Direction**
'A man goes towards a woman.'
(Tr_Th_1_036_path_M_walk_toward_F_back)

(93) Mi dèk+phûchai **oòk** **ma** chaàk khoòthi˘n.
COP boy **exit** **come** from rock
Path **Direction**
'A boy comes out of a rock.'
(Tr_Th_14_030_Path_C_walk_outof_cave_toward_C_sideLR)

(94) Phûyi˘ng **doen** **thálú** **oòk** **ma** chaàk paà.
woman **walk** **go.through** **exit** **come** from forest
Manner **Manner+Path** **Path** **Direction**
'A woman comes out of a forest walking.'
(Tr_Th_4 027_Path_F_walk_outof_woods_sideRL)

Thai can also have Direction-verbs of all types combined in an SVC. In (95), three Direction-verbs that are respectively GC: *long* ('descend'), VC: *pai* ('go') and OC: *tam* ('follow') combine to form an SVC.

(95) Mi phûyi˘ng khon nuèng doen **long** **pai** **tam** thangdoen.
COP woman CLF NUM walk **descend** **go** **follow** path
'A woman goes down and follows a path.'
(Tr_Th_1_073_Path_F_walk_down_to_lake_back)

All of these Direction-verbs can occur as the only verb in the clause and can thus be considered as having the status of main verbs, alongside Manner- and Path-verbs. Verbs for Direction:OC and GC cannot occur with Path-verbs in a clause with only one Landmark. Thus, when they occur in the same clause, they take different Landmarks, as in (96). In other words, GEOCENTRIC/OBJECT-CENTERED Direction-verbs and Path-verbs take the same slot in an SVC.

(96) Phûyi˘ng **doen** **khuên** bandai **oòk** **ma** chaák thâm.
woman walk ascend stair exit come from cave
'A woman walks down the stair out of the cave.'
(Tr_Th_3_070_Path_F_walk_up_stairs_front)

We can summarize the main cross-linguistic findings concerning Direction as follows: French exhibits no constraints for combining the category Direction with Manner (verbs), and additionally in some cases allows for (covertly) expressing Region-change. In Swedish, different values for Direction display a division of labor between different form classes where prepositions, verbs and adverbs typically take the value of Direction:OC, VC and GC, respectively. In contrast, verbs are used in Thai for all values.

5.6 Motion

Talmy (1985) was one of the first to emphasize that the category Motion is typically conflated with other categories in different Motion-verbs and languages. Because of this, ending this presentation with Motion also summarizes the other categories of motion semantics. In the languages under study, Motion was conflated with three categories: Manner, Path and Direction. Most verbs conflate Motion with one of these but some with two. There are verbs conflating Path with Region, e.g. *khâw* ('enter') in Thai and *sortir* ('exit') in French. Some verbs conflate Path and Manner, e.g. the French verb *pénétrer* ('penetrate') and the Thai verb *phloò* ('pop-out'). On the basis of the Swedish pattern for translocative motion, shown in (97) and (98), two general conclusions can be drawn.

(97)	*går*	*från /*	*över/*	*till/*	*mot*
	V	prep	prep	prep	prep
	Motion	Path:BEGIN	MIDDLE	END	Direction:OC
	Manner				

(98)	*går*	*in/*	*ut/*	*upp/ner*
	Motion	Path:END	Path:BEGIN	Direction:GC
	Manner	Region:INTERIOR	Region:EXTERIOR	

Firstly, it is reasonable to differentiate between Manner-verbs that are *potentially translocative* (e.g. *gå* ('go), *springa* ('run'), *hoppa* ('jump')) and those that are *inherently non-translocative* (e.g. *vrida* ('twist'), *breda* ('spread')). In the context of prepositions and adverbs specifying Path or Direction, potentially translocative verbs are given a translocative reading. When combined with a locative complement, the motion is understood non-translocatively. Sjöström (1990) makes a similar remark: [41]

> Sentences containing such [potentially translocative] verbs can easily be specified as expressing 'translocations' by means of a 'translocative' preposition. (p. 139).
>
> Verbs which more specifically describe particular details of movement do not become 'adlocative' in the usual way when combined with an 'adlocative' preposition. (Ibid: p. 170)

Secondly, Swedish has a set of adverbs that, when combined with a potentially translocative verb, express Region-change, e.g. *ut* ('out') and *in* ('in'). When used together with a non-translocative verb, they express the completion of the situation and can thus be considered as generally marking the temporal bounding of the situation, that is, as perfective markers.

The pattern of expressing bounded translocation with potentially translocative verbs together with prepositions differentiating between locative and translocative motion is not common for French (see Chapter 5). Motion conflated with Manner and Path is typically placed in separate clauses, as in (99) and (100).

(99) Un garçon **court** **dans** l' eau.
DET.INDF.M boy **run.3SG.PRS** **in** DET.DEF.F water
'A boy runs in the water.'
(Tr_Fr_14_059_Path_C_run_into_sea_sideRL)

[41] Where I have spoken of *trans*location, Sjöström makes a tripartite distinction between delocation, translocation and adlocation. In the terminology used herein, these three correspond to the three values of (schematic) Path and thus include change-of-location without Motion, e.g. *försvinna* ('disappear'). Since Sjöström (1990) discusses spatial change in general, the distinction between Path and Motion is less relevant for his purposes.

(100) Là elle **marche**
here 3SG.F.PRN **walk.3SG.PRS**

elle **sort** **de** la grotte.
3SG.PRN **exit.3SG.PRS** **from** DET.DEF.F cave
'There she walks, she exits a cave.'
(Tr_Fr_2_023_Path_F_walk_outof_cave_front)

The separation between Path and Manner in different clauses has consequences for the ability to integrate them into a complex composite situation description. The first clause in (101) specifies motion and change of region. The clause boundary marks that the motion situation of the second clause is a second distinct – albeit spatially and temporally contiguous – event of going up (to) the pebbles. Thus, the preposition *sur* ('on') should be understood as marking location rather than as expressing continuous translocation.

(101) Un enfant **sort** d'une grotte et
DET.INDF.M child **exit.3SG.PRS** fromDET.INDF.F cave CONJ

grimpe **sur** les galet-s.
climb.up.3SG.PRS **on** DET.DEF.M.PL pebble-PL
'A child exits a cave and (once outside he) goes up on the pebbles.'
(Tr_Fr_5_028_Path_C_walk_outof_cave_to_sea_sideLR)

The constraint on combining Manner with translocation mainly concerns *bounded* translocation. For unbounded translocation, Manner-verbs can combine with prepositions expressing Direction, cf. (87) above, repeated below as (102).

(102) Un homme **marche** **vers** une femme.
DET.INDF.M man **walk.3SG.PRS** **towards** DET.INDF.F woman
'A man walks towards a woman.'

From this, it seems warranted to conclude that there is a pattern in French where (a) Manner and a BEG/MID/END value for Path are expressed in separate clauses and (b) prepositions do not differentiate between translocative and locative readings but inherit their value for Path directly from the verb. However, as was shown in (19) repeated as (103), it is possible to express translocation with Manner-V+Path-Prep. In this way, there are reasons to agree with the criticism of Aske (1989), according to which the V-framed pattern of Romance languages is mainly required when expressing Region-change, whereas other kinds of translocative motion can use the pattern in (103). Remaining to be investigated are further differentiations between the linguistic (i.e. which Manner-verbs and Path-prepositions can together participate

in expressing translocation) and extra-linguistic contexts (i.e. which forms of motion situations that are more common to such a pattern) that allow for this pattern in French.

(103) Celle qui **marche** **de** l'arbre **au**
DET.DEM.F COMP.REL **walk.3SG.PRS** **from.** **DET.DEF.F** tree **to.DET**

au sous-bois.
to.DET.DEF.M.PL undergrowth
'The one who walks from the tree to the undergrowth.'
(Tr_Fr_3_051_Path_F_Cross_Field_Front)

Thai speakers use serial-verb constructions where Motion conflates with Manner, Path or Direction. These can occur in the combinations shown in (104), which elaborates the structure proposed by Zlatev and Yangklang (2004: p. 168), by distinguishing Path-V from Direction-V. When Direction is specified according to the GEOCENTRIC or OBJECT-CENTERED FoR, then a Path-verb cannot be used as well.

(104) Manner-V + Manner+Path-V + {Path-V / Dir-V(OC/GC)} Dir-V (VC)

When used together with a non-translocative verb, the verb for Region-change *oòk* ('exit') expresses the finalization of the activity and thus serves as a marker of perfective aspect, as in (68). The position of the verb in the SVC varies depending on whether translocation or finalization is expressed; in the latter, the verb takes the position of following the object rather than preceding it. By virtue of the propensity to use serial-verb constructions, Thai speakers displayed a more complementary (compositional) approach to motion encoding. Every Motion-verb in a SVC contributes to express the different types of motion according to the three schematic patterns shown in Table 4-4.

Table 4-4. The type of Motion-verb and corresponding motion situation in Thai

Example	Type of Motion-verb	Motion situation
Doen	Manner-V	Non-translocative
Doen ma	Manner-V + Direction-V	Unbounded translocation
Doen oòk pai	Manner-V+ Path-V+ Direction-V (VC)	Bounded translocation

6. Discussion: Conflation and Distribution patterns

The analysis of the elicited motion descriptions in Swedish, French and Thai from the perspective of Holistic Spatial Semantics proved fruitful in a number of ways. As hypothesized, all semantic categories are present in the three languages. Disregarding patterns of distribution or conflation for the time being, the form classes used for respective category are summarized below in Table 4-5.

Table 4-5. The form classes used to express the six semantic categories (leaving out Landmark and Figure)

Category	Value	Thai	French	Swedish
FoR	GC	V	V	Prep, Adv
	OC	Reg-N, Prep	V, Prep, N	V, Prep, Adv
	VC	V, Reg-N	V, N	V, Adv, Prep
Region		V, Reg-N	V, Prep	Prep, Adv
Path	BEG	V, Prep	V (V+ Prep)	Prep, Adv
	MID	V	V	V, Prep
	END	V, Prep	V (V+Prep)	Prep, Adv
	PLACE	Reg-N, Prep	Prep	Prep
Direction	GC	V	V	Adv
	OC	Reg-N, Prep, V	Prep, N, V	Prep, V
	VC	V, Reg-N	V, N	V, Adv
Manner		V, Adv	V, Adv	V, Adv
Motion		V	V	V, Adv

From this table illustrating the resources used by the three language groups, we see that most of the categories across languages are expressed with prepositions and verbs. The notable differences are that the Swedish participants used adverbs to express all six categories and Thai speakers used Region-nouns. The general picture sketched in Table 4-5 thus suggests a considerable overlap between grammatical resources for expressing the semantic categories in the three languages. This provides an overview of the form classes that can potentially express each semantic category. From this, we do not know how they establish form-meaning mappings in terms of conflation and distribution across the clause. In other words, how are these resources used to represent different kinds of motion situations? Below, I will first discuss this in terms of the *overt* conflation and distribution patterns, i.e. the systematic contrasts within one or more form classes in a spatial utterance. In order to then provide a more comprehensive view and capture some of the more important differences between the three languages, I also discuss the *covert* patterns where extra-linguistic knowledge partakes in determining meaning.

6.1 Conflation patterns

As seen in Table 4-6 and Table 4-7, verbs in French and Thai occupy a largely overlapping space. Where they differ in conflation patterns, Thai speakers conflate Path with Matter and prepositions in the French group conflate Region with Path. As shown in Table 4-8, Swedish differs from this general picture, mainly due to the lack of Motion-verbs conflating with Path and Region. Instead, these categories conflate in adverbs and prepositions.

Table 4-6. Conflation patterns for Thai

	Region	Path	Direction	Manner	Motion
Region		V	-	-	V
Path	V		-	V	V
Direction	-	-		-	V
Manner	-	V	-		V
Motion	V	V	V	V	

Table 4-7. Conflation patterns for French

	Region	Path	Direction	Manner	Motion
Region		V	-	-	V
Path	V		-	-	V
Direction	-	-		-	V
Manner	-	-	-		V
Motion	V	V	V	V	

Table 4-8. Conflation patterns for Swedish

	Region	Path	Direction	Manner	Motion
Region		Adv, Prep	-	-	Adv
Path	Adv, Prep		-	-	V(MID), Adv
Direction	-	-		-	V, Adv
Manner	-	-	-		V, Adv
Motion	-	V(Path:MID), Adv	V, Adv	V, Adv	

We can read these diagrams as representing the types of available conflation patterns. This can be used to formulate expectations about which patterns are possible across languages; these are expectations that of course are open for empirical modifications. Motion can be expected to conflate with all other categories, while categories such as Region and Manner are less expected to conflate. The way in which they have been defined, the conflation of Direction and Path should be impossible.

6.2 Overt distribution patterns

We now have the patterns of individual form classes charted, but these and the categories that they conflate are not the only or the main element for semantic analysis. Just as several categories can be fused into a single word, the opposite, distribution, is also true. We have seen several examples of this in the three language groups. Some of these patterns are obligatory and others are optional ways to express motion. Let us begin with the *overt* patterns of distribution. Swedish distributes Region:INTERIOR over adverb and preposition in expressions of Region-change, as in (105). For motion in the opposite direction, the same form classes are used (106), but the adverb and prepositions take complementary values for *both* Region and Path. Both French and Thai have distribution of Path and Region in expressions of Region-change over verb and preposition, as shown in (107)-(109).

(105) *in* — *i*
adv — prep
Region:INTERIOR — Region:INTERIOR
path:END

(106) *ut* — *ur*
adv — prep
Region:EXTERIOR — Region:INTERIOR
Path:BEGIN — Path:END

Swedish

(107) *entre* — *dans*
V — prep
Motion — Path:END
Path:END — Region:INTERIOR
Region:INTERIOR

(108) *sortir* — *de*
V — prep
Motion — Path:BEGIN
Path:BEGIN — Region:EXTERIOR
Region:EXTERIOR

French

(109) *oòk* — *chaàk*
V — prep
Motion — Path:BEGIN
Path:BEGIN
Region:EXTERIOR

Thai

Three additional patterns of overt distribution were detected, and shown in (110)-(112). Of these, I would like to bring attention to the final one. As can be seen, Thai speakers can and regularly do distribute Motion across three or even more verbs where each verb in the serial verb-construction can express Manner, Path and Direction, respectively.

(110)	*Passera*	*förbi*		(Swedish)
	V	Prep		
	Path:MID	Path:MID		
	Motion			
(111)	*entrer*	*courant*		(French)
	V	gerund		
	Path	Manner		
	Motion	Motion		
(112)	*doen*	*oòk*	*pai*	(Thai)
	V	V	V	
	Manner	Path	Direction	
	Motion	Motion	Motion	

6.3 Covert patterns of distribution

A brief glance at the overt patterns of distribution and conflation seems to suggest that Thai and French have the same resources and quite similar ways to use them. Firstly, verbs conflate Motion with Path, Region and Manner. Secondly, Region-change can be distributed across verb and preposition. Is this to say that Thai and French should be grouped together in terms of attested form-meaning mappings and distribution/conflation patterns? While the differences between the two languages are clear in use – as we will see in the next chapter – it is also possible to construe the semantic differences with the help of how they *covertly* express spatial meaning. One important difference concerns prepositions. The French prepositions *de* ('from') and *à* ('to'/'at'), together with certain verbs, can express Path:BEGIN and Path:END, respectively. Otherwise, the boundedness of a translocation is expressed by a Path-verb. The prepositions for expressing Path:END in Thai are bound up with Region-change. Therefore, a bounded translocative motion without boundary-crossing would thus leave Path:END covertly expressed through the combination of a Manner- and Direction-verb, as in (113). Since Path is overtly expressed either in the verb or in the preposition, this covert pattern is not found for French.

(113)	Khon	laˇi	khon	**doen**	**pai**	thî	thálesàp.
	person	QUANT	CLF	**walk**	**go**	at	lake
				Manner	**Direction:VC**		

'Several people walk away to the lake.'

Thus, while Thai and French may be seen as having similar resources, they use these to produce quite different covert patterns for the expression of Path. Indicative in this regard is how the French preposition *dans* can participate in expressing Region-change even when it is not combined with a Region-changing verb. We described the preposition as overtly expressing the same value as the verb. Due to covert expression, it is possible to explain how *dans* ('in') can both take a locative and translocative value for Path, i.e. corresponding both to English *in* and *into*, as in (114) and (115). If we look closer at the situations in which *dans* takes these different values for Path, what is it that differentiates them?

(114)	Un	garçon	**court**	**dans**	l'	eau.
	DET.INDF.M	boy	**run.3SG.PRS**	**in**	DET.DEF.F	water
				Path:PLACE		

'A boy runs in the water.'

(Tr_Fr_14_059_Path_C_run_into_sea_sideRL)

(115)	Il	**saute**	**dans**	l'	eau	**d'**	une	pierre.
	3SG.M	**jump.PRS**	**into**	DET.DEF.F	water	from	DET.INDF.F	rock
				Path:END		**Path:BEGIN**		

'He jumps into the water from a large rock.'

(Tr_Fr_4_064_Path_C_jump_from_cliff_into_water_sideLR)

A possible interpretation is that the difference is due both to the linguistic context and to the situation described. In (115), *dans* ('in') occurs in a sentence where Path:BEGIN is expressed by *de* ('from'). This means that the motion situation has a bounded beginning and thereby strongly suggests that the prepositional phrase *dans l' eau* ('into the water') specifies the endpoint rather than location. Secondly, from the extra-linguistic life-world, we know that when jumping from a cliff with the sea below we do not end up on the surface of the water. This forces *dans* into expressing not only the site of jumping, i.e. Path:PLACE, but the Region-change into the water, i.e. Path:END.

An additional covert pattern is that verbs that express change of state can express Motion and Path. These are verbs that express spatial meaning through their *Aktionsarten* or lexical aspect. We find such verbs in the Swedish and French data. In (116), the verb *quitter* ('leave') is not only a verb for Motion, but here is given a reading of conflating Motion with Path:BEGIN. To "disappear", as seen from the surrounding linguistic context in (117), also entails that the Figure moved. Perhaps one could even say that there is a form of extended deictic element covertly expressed:

the Figure has disappeared only relative a particular viewpoint, here taken to be outside of a visually impenetrable shrubbery.

(116) La fille qui **quitte** son tronc
DET.DEF.F girl COMP.REL **leave.3SG.PRS** 3SG.POSS trunk

d' arbre.
of tree
'The woman that leaves her tree trunk.'
(Tr_Fr_2_026_Path_M_walk_into_woods_back)

(117) En man **försvinn-er** **in** **i** ett buskage.
DET.INDF man **disappear-PRS** **in** **in** DET.INDF shrubbery
'The man disappears into a shrubbery.'
(Tr_Sw_2_026_Path_M_walk_into_woods_back)

7. Conclusions

This chapter has been a long one: we have charted the expression of motion situations in Swedish, French and Thai. Let me round up by providing answers to the four research questions presented in Section 4.

Question 1: Do the three languages express all semantic categories of HSS?

Swedish, French and Thai all have the resources to express the eight categories hypothesized by HSS. However, they do so to differing degrees – as we shall see in the next chapter – and with different overt and covert expression patterns. Although not impossible, French exhibits constraints on combining Path with Manner-information in the same clause. The expression of Path:END is bound up with Region-change in Thai, which makes it possible to express this value for Path covertly rather than overtly.

Question 2: What form classes are involved in the mapping?

The Swedish speakers use verbs for Manner, leaving Path and Direction for adverbs and prepositions. Through a systematic contrast between translocative and locative adverbs, Swedish differentiates between translocative and non-translocative motion mainly with this form class rather than with verbs. In contrast, French marks it with verbs, with prepositions largely (though not exclusively) co-expressing the same values as the verbs. Thus, Path is expressed in French mostly in the verb, but sometimes in a preposition only together with a Manner-verb. Thai participants rely heavily on serial-verb constructions, allowing for Manner, Path and Direction-information to be

stringed together in a (semi-) compositional way. A form class present in Thai and lacking in the other two languages (though not uncommon cross-linguistically) is Region-nouns.

Question 3: How are the semantic categories conflated and distributed in the three languages?

Swedish expresses Motion and Manner in the verb, leaving Path and Region to conflate and distribute in adverbs and prepositions. French conflates Motion and Path. To express Region-change, Path and Region is distributed over verb and preposition. Through serial-verb constructions, Thai conflates Motion with Manner, Path and Direction, hence distributing Motion over three different verbs.

Question 4: How do the patterns differ across the three languages? Does Thai manifest a "third type" that is systematically different from Swedish (S-language) and French (V-language)?

The three languages show considerable overlap in the resources they have and their patterns of distribution, e.g. expressions of Region-change. The differences between Swedish and French are clear in many respects, e.g. Path-verbs in French and the contrast between locative and translocative motion marked by adverbs and prepositions in Swedish. In terms of resources, French and Thai seem to overlap largely with verbs conflating in similar ways and distribution patterns for Region-change being similar. On the other hand, Thai is also similar to Swedish in regard to the ease of combining Manner with Path information in the same clause, thereby making clear overt differentiation between translocative and locative motion. However, SVCs make Thai different from both, grammatically and semantically. With respect to the overt expression of motion, the dedicated slot for Direction:VIEWPOINT makes Thai strikingly different. Moreover, the covert expression of Path:END in Thai was not found in French.

These semantic differences and similarities were detected through an inclusive view on the semantic resources available to languages of the world. By also acknowledging that semantic information can be both conflated and distributed, fine-grained patterns could be attested in the three languages. Finally, the expression of actual motion was calibrated against the taxonomy of motion situations described in Chapter 3.

This chapter was concerned with a description of resources and how the languages express motion in patterns of conflation and distribution. In the next chapter, these attested patterns in the three languages are compared and qualified in relation to their frequency in the data.

Chapter 5
Actual motion: resources and use

The patterns of how motion situations are expressed in Swedish, French and Thai discussed in the previous chapter are here qualified in relation to their frequency of use. The qualitative analysis in the previous chapter revealed that the three languages had largely overlapping resources for expressing each category, with differences in distribution and conflation. As will be seen in the quantitative analyses presented in this chapter, there are also considerable differences regarding which categories are predominantly expressed; that is, even when the resources to express a certain category are available, speakers of the three languages tend to follow what Slobin (1996) calls different "rhetorical styles". This means that the differences in possible patterns of distribution or conflation are even further profiled by their frequency in discourse. However, an account of preferred rhetorical style mainly captures the strongest tendencies and can therefore be complemented and compared with a more general description of the resources used for expressing motion situations.

We could say that the perspective shifts in this chapter from resources (*langue*, system) to use (*parole*, activity), neither of which should have priority over the other. Rather, the two perspectives complement one another both theoretically and empirically. We return in the last section to the question of how they interplay and how linguistic typology should take them both into account.

1. Overview

To get an overview of the data, let us begin with some general descriptive statistics concerning type-token frequencies and how these were distributed across clauses and participants. For type-token frequency, I differentiate between *word type* and *lexeme*. The latter includes several different instances of the former. For instance, *gå* ('walk') *gick* ('walked') and *gående*s ('walking') are three different *word types* but they all belong to the same *lexeme*: *gå* ('walk'). By virtue of being an analytic language, the number of word types and lexemes is nearly identical for Thai. As shown in Table 5-1, the French speakers stood out from the Swedish and Thai participants. The number of total word tokens and lexemes in the French data were more than twice as many as compared to Swedish, and the word types were more than thrice the number of those in the Thai data. The lexeme-token ratio was similar between the three languages.

The differences on the word level were similar for the distribution of clauses across descriptions. Each French description was on average made up of more than two clauses (see Tables 5-2 and 5-3). Swedish and Thai, behaving very similarly in this regard, had a lower number of clauses. As can be seen in Table 5-3, the French participants were more varied in all respects.

Table 5-1. Total number of word tokens, types, lexemes and lexeme-token ratio

	Word tokens	Word types	Lexeme	Lexeme-token ratio
Swedish	12991	679	504	3.8%
Thai	10469	432	425	4.1%
French	25962	1603	1171	4.5%

Table 5-2. Total number of descriptions and clauses, and number of word tokens per clause

	Descriptions	Clauses	Word tokens
Swedish	1242	1762	7.1
Thai	1036	1434	7.3
French	1257	2979	8.7

Table 5-3. Mean number of clauses, mean words per clause, mean word tokens and mean lexemes per participant

	Mean clauses	Mean words	Mean tokens	Mean lexemes
Swedish	1.4 (*SD* =0.6)	7.2 (*SD* = 2.6)	764.2 (*SD* = 125.3)	139.0 (*SD* =30.0)
Thai	1.3 (*SD* = 0.6)	7.3 (*SD* = 2.8)	747.7 (*SD* = 201.7)	145.2 *(SD* = 22.2)
French	2.2 (*SD* = 1.5)	8.8 (*SD* = 5.2)	1527.2 (*SD* = 813.7)	230.8 (*SD* = 72.7)

These differences might be attributed to several different kinds of factors: for example, it is possible that the French participants tended to elaborate more on the topic, while the Swedish and Thai participants were more laconic. There are, however, other possibilities that might reflect how the speakers of the three languages express Motion. In particular, I will investigate the following:

- The disposition to keep Manner and Path in separate clauses in French resulted in the production of more data.
- The tendency to use static scene-setting clauses in French gave rise to a larger material.
- The French speakers used a wider array of semantic and grammatical resources.
- The distribution of how much spatial information tends to be packed in a single clause was uneven between French speakers, on the one hand, and the Swedish and Thai participants, on the other.

2. Path, Manner and rhetorical style

In order to estimate whether the three language groups differed with respect to the production of spatial information, the number of clauses expressing *at least* one of the spatial categories (i.e. FoR, Region, Path, Direction, Manner and Motion) was compared with the clauses expressing none of these categories. This provided a ratio of clauses with at least some spatial information. For French, almost one in four clauses contained none of the six spatial categories, as shown in Table 5-4. This excluded clauses where participants commented on what they saw, reflected their attitude or in other ways provided information that did not describe the motion situation or situate it in space. These may be regarded as clauses without spatial information. The larger data set for French can thus be partially explained by the relatively high frequency of clauses without any spatial information. However, with the non-spatial clauses removed, the number of clauses still was considerably higher for the French group. As can be seen in Table 5-5, the within-group variation was much larger in the French material.

Table 5-4. Comparison of clauses with spatial information

	Swedish	French	Thai
Spatial information	1698	2260	1355
No spatial information	64	719	79
Ratio spatial clauses	96.4%	75.9%	94.6 %

Table 5-5. Mean number of total clauses and mean number of clauses with spatial information

	Swedish	French	Thai
Mean number of total clauses	103.6 (*SD*=19.8)	175.2 (*SD*=68.7)	102.4 (*SD*=21.0)
Mean number of spatial clauses	99.9 (*SD*=15.0)	132.9 (*SD*=52.7)	96.8 (*SD*=15.4)

A one-way ANOVA was conducted to compare the effects of language on the production of clauses with spatial information.[42] This showed that there were significant differences between the three language groups at the p <. 05 level, F(2, 45) = 5.77, p = .006.[43] Post-hoc Tukey HSD tests showed that the differences were due to the French group producing significantly more clauses with spatial information than both the Swedish (p = .017) and the Thai group (p = .013). No significant differences between Swedish and Thai were found in this regard.

Apart from being more verbose in general, the larger proportion of spatial clauses for the French speakers might be explained by appealing to two features. Firstly, as discussed in Chapter 4, and stated above, there are constraints on combining Path with Manner information in the same clause in French and other Romance languages. In comparison, Swedish and Thai participants readily combined Manner and Path in the same clause. This is shown in Figure 5-1, where the proportion of clauses per participant combining Path with Manner is much higher in the Swedish and Thai groups than in the French group. To return to the attested patterns in the previous chapter, this suggests that Swedish speakers predominantly expressed Path in adverbs and prepositions with Manner in the main verb. Thai speakers rather used the two different strategies of (i) a serial-verb construction and (ii) Manner-Verb + Path-preposition.

A one-way ANOVA showed significant differences between the number of instances of Manner and Path in the same clause between the three language groups,

[42] The data was statistically analyzed using one-way ANOVAs. These are calculated based on the *proportion* of occurrences for each language group. ANOVA is sometimes cited as unfit for categorical data such as a linguistic material coded for a number of categories (cf. Jaeger 2008). The risk with ANOVA is mainly that, where the mean values are either very high or very low, the results can be "hard-to-interpret […] because confidence intervals can extend beyond the interpretable values between 0 and 1" (Jaeger 2008: p. 435). Since the present data set does not have this structure, the validity of ANOVA is not affected to the same degree. However, due to these problems with ANOVA, the data was also analyzed according to logistic regression. Since these tests yielded no relevant differences in terms of significance, I consequently report the outcome of ANOVA.

[43] The p-value for significance is set at .05 for all tests in the following.

F(2, 45)=145,9, $p < .001$. Post-hoc Tukey HSD tests showed that these differences were due to the fact that the French speakers combined Path and Manner in the same clause significantly less often than both Swedish ($p < .001$) and Thai speakers ($p < .001$).

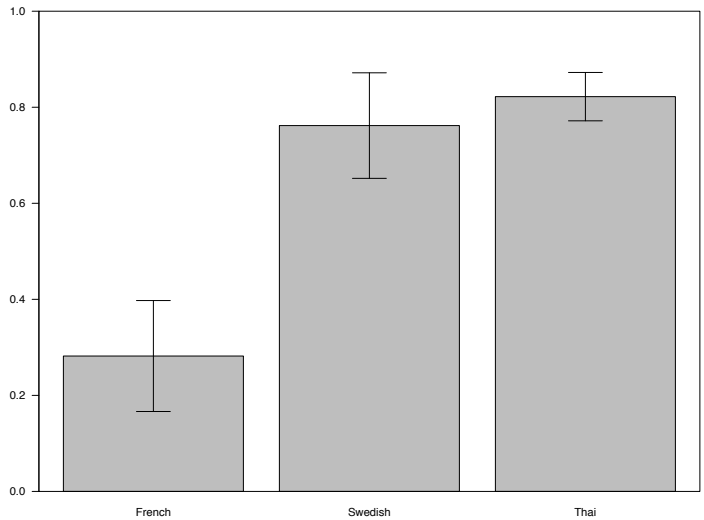


Figure 5-1. The proportion of clauses with both Path and Manner; error bars indicate standard deviations.

A second factor likely to contribute to the higher amount of spatial clauses in French is related to what Slobin (1996) called *rhetorical style*: speakers of different languages have different typical ways to describe motion situation (and produce narratives in general) that can be correlated with the binary motion typology. A clear example of rhetorical style is that V-framed languages tend to start the description of a motion situation with a static, scene-setting clause. This is shown below in (1) where two scene-setting clauses, one describing a static situation and one expressing non-actual motion (see Part III), precede the clause expressing the actual motion.

(1) Nous sommes à l' intérieur d' une grotte
PRON.1PL be.PL.PRS at DET.DEF interior of DET.INDF.F cave

un escalier en pierre en sort vers le fond
DET.INDF.M stair in stone exit.3SG.PRS toward DET.DEF.M back

et une femme l'emprunte pour **sortir** **de** la
CONJ DET.INDF.F woman it.take for **exit.INF** **from** DET.F

grotte.
cave
'We are inside a cave/ a stair in stone exits toward the bottom / and a woman make use of it to exit the cave.'

(Tr_Fr_13_029_Path_F_walk_outof_cave_up_stairs_back)

One way to measure the ratio of static descriptions is to look at the number of spatial clauses without expressions of Motion. Limited to the translocative scenes (see Table 4-1), we see in Table 5-6 that the French speakers used a higher proportion of clauses with only static information.

Table 5-6. Mean number and percentages of clauses without expressions of Motion

Motionless clauses	French	Swedish	Thai
Mean number	22.5 (*SD*=24.2)	7.8 (*SD*=4.7)	8.3 (*SD*=3.7)
Mean percentage	16.7 %	9.7 %	10.7 %

Comparing the proportion of clauses containing expressions of Motion with those lacking such expressions using a one-way ANOVA yielded statistically significant results $F(2, 45) = 4.748$, $p = .0135$. Post-hoc Tukey HSD tests showed a significant difference between French and Swedish in this regard: $p = .017$. The difference between Thai and French was close-to significant: $p = .059$.

To conclude, we can say that the Swedish and Thai participants behaved similarly with respect to (a) combining Path with Manner information in the same clause and (b) producing a similar number of static clauses. The French speakers differed in both these regards. In terms of how motion information tended to be distributed across the clause, this lends itself to grouping together Swedish and Thai, with French standing out from this pattern.

3. Frame of Reference (FoR)

Let us look closer at the spatial clauses. According to HSS, a spatial utterance should express overtly at least one spatial FoR of the three types OBJECT-CENTERED (OC), VIEWPOINT-CENTERED (VC) and GEOCENTRIC (GC). How well does the data from the three languages follow this prediction and what differences are there? As can be seen in Table 5-7, FoR:OC was expressed in most clauses. Both French and Thai follow the pattern of OC>VC>GC, and in Swedish FoR:GC is more common than FoR: VIEWPOINT-CENTERED. The notable main difference is that the Thai group expressed FoR:VC in over half of the spatial clauses, much more than the other two language groups.

Table 5-7. Percentages of clauses containing the three different Frames of Reference

	OC	VC	GC
French	93.3%	22.9%	10.9%
Swedish	97.6%	12.8%	16.6%
Thai	94.8%	50.3%	16.8%

The speakers of all three languages often expressed several FoRs in a single clause. From the point of view of HSS, this seems to go against the incommensurable character of FoRs proposed in Levinson (1996, 2003). Furthermore, the languages displayed divergent patterns of distribution of FoR expressions occurring in one and the same clause. Table 5-8 shows the values of FoR that were co-expressed in the same clause. While clauses with only FoR:OC were most common for all three groups, there were three interesting patterns where more than one value of FoR was expressed per clause: (a) The Swedish speakers more often than the other groups expressed FoR:OC and FoR:GC together, (b) FoR:OC and FoR:VC co-occurred to a significantly larger degree in Thai; (c) using all three values of FoR in the same clause was considerably more frequent in the Thai group than in the other two. Both (b) and (c) can be explained by the SVCs of Thai which allow for easily combining Path with Direction, especially Direction:VC. The co-expression of FoR:OC and GC in Swedish is mainly attributable to a pattern discussed in Chapter 4: the pattern in which geocentric Motion is specified together with the Landmark along which the motion occurs, as in (2).

(2) Mann-en **gå-r** **uppför** en trappa.
man-DEF walk-PRS up.for DET.INDF stairs
'The man walks up a stair.'
(Tr_Sw_2_074_Path_F_walk_up_from_lake_front)

Table 5-8. The relative number of clauses for all patterns of FoR

	Complementarity			**Distribution**				
	OC	VC	GC	OC+GC	OC+VC	VC+GC	OC+VC+GC	**Total**
French	67.2%	3.5%	3.1%	6.8%	18.4%	0.1%	0.9%	100%
Swedish	71.5%	2.2%	0.5%	15.5%*	10.1%	0.0%	0.5%	100%
Thai	43.7% *	1.8%	2.2%	3.9%	37.8% *	1.3%	9.4% *	100%

(*Note*: all cells marked with * indicate significant differences between languages in post-hoc Tukey HSD tests)

We now have a general view of how the different FoRs are used in spatial description, but recall from Chapter 3 that translocative motion was defined in terms of presupposing an (experiential) FoR. How well does a similar picture emerge from the linguistic descriptions? As can be seen in Table 5-9, FoR was rarely omitted from descriptions that contained Motion. Swedish and Thai almost always explicitly marked FoR for translocative scenes (see Tables 4-1 and 4-2 in Chapter 4 for the classification of the "scenes" in the Trajectoire elicitation tool), but French left it out more often. At a clausal level, the same picture holds (Table 5-10), with the exception that French omitted FoR just as often for translocative as for non-translocative scenes. This can possibly be explained by the preference not to combine Manner- with Path-information in the same clause. I return to this in the following section. Secondly, the Thai speakers rarely omitted FoRs, even for non-translocative scenes. This can partly be explained by the strong tendency to always include deictic verbs as well as the use of Region-nouns.

Table 5-9. Mean number of utterances per speaker without FoR specified

	Translocative scene	Non-translocative scene
Swedish	0.06 (*SD* = .25)	4.5 (*SD* = 2.6)
French	2.4 (*SD* = 3.4)	4.7 (*SD* = 3.1)
Thai	0.07 (*SD* = .25)	0.5 (*SD*= .64)

Table 5-10. Mean number of clauses per speaker without FoR specified

	Translocative scene	Non-translocative scene
Swedish	0.8 (*SD* = .88)	5.9 (*SD* = 2.4)
French	9.6 (*SD* = 6.1)	9.2 (*SD* = 4.3)
Thai	2.3 (*SD* = 2.1)	7.9 (*SD* = 2.3)

The participants in all three languages groups exhibit a strong tendency to overtly express FoR in descriptions of translocative scenes. This suggests that translocative motion situations are linguistically profiled through FoRs. Following the definition of translocative motion as always involving at least one experiential FoR, this is not a

surprise and it supports the prediction that spatial utterances require at least one overt expression of FoR made by Holistic Spatial Semantics. In further support of HSS, different languages utilize FoR in different ways, which suggests that linguistic meaning is both universally motivated and at the same time prone to adapting according to language-specific conventions.

4. Resources vs. use

Chapter 4 showed both overlap and differences in the ways form classes are mapped to semantic categories in French, Thai and Swedish. How are these resources realized in use? In this section, I look specifically at the expression of translocative motion, where the verbs were almost exclusively of the categories of Manner, Path and Direction. To start with, when comparing the number of Motion-verb lexemes and the tokens of each category, the three languages groups differ considerably. The French speakers used the highest number of different lexemes for verbs coded for Manner, Path and Direction, followed by the Thai group (see Tables 5-11, 5-12 and 5-13) and the lowest number of lexemes was found in the Swedish group. As seen in Table 5-12, the French group used about as many different Path-verbs as Manner-verbs, 21 and 22, respectively. Despite typically expressing Manner in the verb, only 16 different Manner-verbs were found in the Swedish data, shown in Table 5-11. However, this number is high in comparison with the number of different Direction- and Path-verbs, 2 and 4 (with 2 expressing Path covertly), respectively.

Table 5-11. All Motion-conflating verb lexemes in Swedish

Path	Manner	Direction	Manner+Dir	Other	Total
4	16	2	1	1	**24**
försvinna ('disappear') (covert) *korsa* ('cross') *passera* ('pass') *stanna* ('stop') (covert)	*böja* ('bow') *ducka* ('duck') *gå* ('go') *hoppa* ('jump') *jogga* ('jog') *kliva* ('step') *krypa* ('crawl') *lägga (sig)* ('lie down') *motionera* ('exercise') *promenera* ('stroll') *runda* ('round') *springa* ('run') *svänga* ('turn') *sätta (sig)* ('sit down') *vandra* ('hike') *vända* ('turn around')	*följa* ('follow') *komma* ('come')	*dyka* ('dive')	*fortsätta* ('continue') (covert)	

Table 5-12. All Motion-conflating verb lexemes in French

Path	Manner	Direction	Manner+Path	Manner+Dir	Other	Tot
21	22	4	2	2	2	**58**
affleurer ('rise')	*courir* ('run')	*descendre*	*enjamber* ('step	*gravir* ('climb	*aller* ('go')	
arriver ('arrive')	*déambuler* ('wander')	('descend')	over')	up')	*continuer*	
atteindre ('reach')	*marcher* ('walk')	*monter* ('go up')	*pénétrer*	*grimper* ('go up')	('continue')	
contourner ('bypass')	*nager* ('swim')	*tomber* ('fall')	('penetrate')	*plonger* ('dive')		
démarrer ('start')	*rebondir* ('bounce')	*venir* ('come')				
dépasser ('exceed')	*rouler* ('roll')					
embarquer ('board')	*s'accroupir* ('squat')					
entrer ('enter')	*s'agenouiller* ('kneel')					
laisser ('leave') (covert)	*s'enfoncer* ('sink')					
partir ('leave')	*s'emparer* ('take hold')					
passer ('pass')	*s'étendre* ('lie down')					
quitter ('leave') (covert)	*s'installer* ('settle down')					
reentrer ('re-enter')	*sauter* ('jump')					
rejoindre ('catch up with')	*se faufiler* ('sneak')					
retourner ('return')	*se jeter* ('throw oneself')					
s'écarter ('move away')	*se lever* ('get up')					
s'éloigner ('move away')	*se pencher* ('lean')					
s'engager ('start')	*se promener* ('stroll')					
se barrer ('leave')	*sillonner* ('criss-cross')					
sortir ('exit')	*tourner* ('turn')					
traverser ('cross')	*trébucher* ('stumble')					
	trottiner ('scamper along')					

Table 5-13. Total number of Motion-conflating verb lexemes in Thai

Path	Manner	Direction	Manner+Path	Tot
8	13	6	4	**31**
khaâm ('cross')	*doen* ('walk')	*khuên* ('ascend')	*phloò* ('pop-out')	
khâw ('enter')	*doen_lên* ('walk-for-pleasure')	*long* ('descend')	*tàt* ('cut-through')	
klàp ('return')	*doòt* ('jump')	*ma* ('come')	*lót* ('penetrate')	
lát ('cut-across')	*kâo* ('step')	*pai* ('go')	*thâlú* ('go-through')	
loei ('pass-by')	*kradoòt* ('jump')	*tam* ('follow')		
oòk ('exit')	*liáo* ('turn')	*yók* ('lift')		
phaàn ('pass')	*lòp* ('duck')			
soòt ('insert')	*mút* ('duck')			
	ngoei ('elevate')			
	oòkkamlangkai ('exercise')			
	pín ('climb')			
	tè ('kick')			
	wîng ('run')			
	yiàp ('step-on')			

Despite the possibility to use many different, near synonymous Manner-verbs for walking, Swedish participants almost exclusively used the unmarked verb *gå* ('walk'), as shown in Table 5-14. This articulates a point discussed in the previous chapter, viz. the decision to code the verb in question as a Manner-verb. Does it, considering how overwhelmingly common and semantically bleached it is, only express a type of Manner? It is of course possible that the verb has additional senses, partly due to its general nature.[44] While there are reasons to raise this question, the decision to regard *gå* primarily as a Manner-verb is motivated by its semantic differentiation from other, perceptually salient types of Manner. Also, the decision is methodologically motivated by the nature of the stimuli.

[44] Default verbs for typical human walking have in many Indo-European become verbs for unspecified motion in general (see Heine and Kuteva 2002).

Table 5-14. The ten most common Motion-verbs for all three language groups

Verb	Gloss	Type	Occurrences	Percentages (of total Motion-verbs tokens)
		Swedish		
gå	walk	Manner	626	58.3%
springa	run	Manner	144	12.6%
komma	come	Direction	129	11.3%
hoppa	jump	Manner	96	8.4%
ställa	put standing	Manner	23	2.0%
korsa	cross	Path	18	1.6%
passera	pass	Path	17	1.5%
promenera	stroll	Manner	12	1.0%
jogga	jog	Manner	9	0.8%
		French		
sortir	exit	Path	110	12.0%
marcher	walk	Manner	109	11.8%
rentrer	(re)enter	Path	76	8.3%
sauter	jump	Manner	62	6.7%
courir	run	Manner	59	6.4%
aller	go	Motion	58	6.3%
traverser	cross	Path	52	5.7%
passer	pass	Path	45	4.9%
venir	come	Direction	39	4.2%
		Thai		
doen	walk	Manner	612	22.6%
pai	go	Direction	352	13.0%
ma	come	Direction	247	9.1%
khâw	enter	Path	196	7.2%
oòk	exit	Path	194	7.2%
wîng	run	Manner	125	4.6%
phaàn	pass	Path	116	4.3%
khuên	ascend	Direction	105	3.9%
long	descend	Direction	87	3.2%

Turning from types to tokens of Motion-verbs, we see quite different distributions across the language groups, shown in Table 5-15. The Swedish speakers were almost exclusively restricted to Manner-verbs, whereas the French speakers used both

Manner- and Path-verbs to a relatively high degree. Both language groups were rather sparse in their use of Direction-verbs. In contrast, all three semantic types were very commonly used by the Thai speakers.

Table 5-15. Tokens of Motion-verbs

	Manner	Path	Direction
French	619	753	242
Thai	911	633	809
Swedish	1040	38	133

In sum, the three groups were found to be quite diverse in terms of (a) the lexemes of Motion-verbs and (b) the frequency of Motion-verb tokens. The French speakers used a large set of different Manner-verbs, and used these frequently, though less so than Path-verbs, which could be predicted from the Talmian typology. The Swedish participants used Manner-verbs very often, but more than half of all occurrences were instances of the same lexeme, *gå* ('go'). In terms of available resources, the Thai speakers were in-between the French and the Swedish, but they displayed a much higher number of tokens per lexeme for all three semantic types, showing that they used verbs to convey all types of motion-information to a much higher degree than the Swedish as well as the French group.

The presentation so far has shown the role of Motion-verbs in the three languages, but what about the role of other form classes? To investigate this, we can look at the expression of semantic categories globally across *all* descriptions and clauses containing Motion. When doing so, interesting divergences between the languages could be seen, as shown in Figure 5-2. All language groups showed the Manner+Path pattern, but the descriptions produced by the French group often involved Path only – a pattern uncommon for the other two languages. The speakers of Thai, and Swedish to a lesser degree, tended to add Direction to the mix, thus describing all three semantic categories. On a clausal level, the language groups can be seen as aligning in three distinct patterns: (i) Path-only for French; (ii) Manner and Path for Swedish and (iii) all three categories Manner, Path and Direction for Thai.

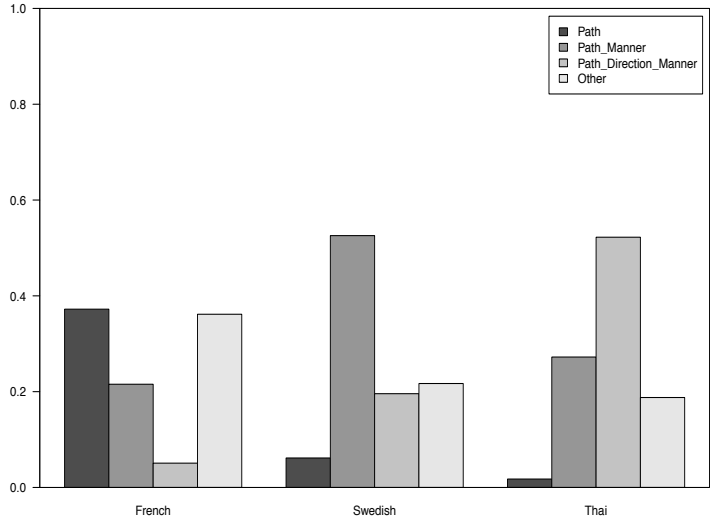


Figure 5-2. The relative number of clauses expressing Motion together with other categories

The differences at the clausal level were compared statistically with a one-way ANOVA. This showed significant differences between Path, $F(2, 45) = 150.7$, $p < .001$), Manner+Path, $F(2, 45) = 46.3$, $p < .001$) and for Manner+Path+Dir: $F(2, 45) = 126.5$, $p < .001$). Expectedly, post-hoc tests with Tukey HSD showed the French group differed significantly from the Swedish and Thai groups with respect to Path ($p < .001$ for both); similarly, the Swedish group showed significant differences for the pattern of Manner+Path ($p < .001$) and Thai was similar for Maner+Path+Dir ($p < .001$). No other significant differences were found between language groups. As can be seen in Figure 5-2, the French speakers had a larger proportion of clauses not pertaining to these three patterns. These included every other possibly (i.e. Manner, Direction, Manner+Direction and Path+Direction). One main contributing factor for the high proportion in French is, as noted above, the disposition to place Path-information in a different slot than Manner-information.

We can, against the backdrop of the patterns described in Chapter 4, infer that the Swedish group primarily used (potentially translocative) Manner-verbs with Path-prepositions and Path-adverbs, while Thai speakers regularly expressed all categories in SVCs. The large amount of Direction-elements is attributable to the frequent expression of deixis in Thai. Since the latter is (a) grammatically encoded, (b) frequently used in discourse and (c) structurally different from Path, this underscores the importance of looking beyond the Path-vs.-Manner divide and including Direction, especially Viewpoint-centered Direction. The pattern for the French

speakers is less clear. On the basis of previous discussions, there seem to be three possibilities of expressing Path:

- Verbs only.
- Only prepositions (together with Manner- or Direction-verbs).
- Path-verbs together with Path-compatible prepositions.

As it turns out, these three possibilities are placed in increasing order of frequency. The most common pattern is *both* verbs and prepositions and least common is only verbs, underscoring the role of semantic distribution in holistic semantics. This is shown in Table 5-16.

Table 5-16. The proportion of elements expressing Path in French

Path element	Proportion
Verb	21.0 % (n = 193)
Prep	25.9 % (n = 238)
Verb + Prep	53.1 % (n = 487)

In sum, the typical way of expressing a translocative motion situation does not align or correlate perfectly with the available resources.

5. Continuous and discrete forms of Region-change

As described in Chapter 4, the French data showed cases diverging from the expected constraint on combinations of Manner-verb and Region-change. We can relate this to the difference between continuous and discrete Region-change discussed in Chapter 3. As it turns out, almost half of the clauses (11 of 25 occurrences) where French speakers disobey the boundary crossing-constraint were descriptions of one and the same video clip: a boy diving into the sea from a high cliff. 10 out of the 17 participants expressed this clip with one or more clauses involving Manner-V+Path-preposition.

The different behavior for this particular scene might have to do with the vertical direction of motion. Naigles *et al*. (1998) report the overwhelming use of Manner-verbs in Spanish for scenes representing similar vertical motion situations. Tentatively and requiring more investigation, we may suggest that the boundary-crossing constraint of V-languages is relaxed for boundaries along the vertical axis, due to the marked nature of vertical motion, considering the typically earthbound character of human motion (as defined in the human life-world). For human beings, there are no *affordances*, i.e. perceived action possibilities, for moving along the vertical axis (Gibson 1977, 1979).

Movement along the vertical axis is by default perceptually salient and can thus be expected to be linguistically prominent as well. For this reason, the nature of the situation might diminish the constraint on combining Manner-verbs with situations of Region-change.

Another contributing factor to the different response to this particular clip could be the type the transition between INSIDE and OUTSIDE (that is, the boundary that is crossed). This factor is supported by a difference in the Swedish and Thai material as compared to the French data: scenes where the Figure translocates between land and water were expressed differently from other scenes of Region-change. In these clips, the Swedish and Thai speakers preferred to use different patterns for expressing Region-change than what was described in Chapter 4. The general tendency was to use Geocentric Direction – a pattern not found in the French data. Similar to vertical motion, the number of clips involving a land/water transition is unfortunately limited to two. Since these scenes do not clearly involve vertical motion, a tentative explanation involves the nature of the boundary crossed.

In Thai, 27 out of 28 descriptions for the two clips contained at least one clause with the geocentric Direction-verbs *khuên* ('ascend') and *long* ('descend'). Even more striking was that no descriptions contained the Path-verbs *khâw* ('enter') or *òòk* ('exit') to convey the sense of translocating between INTERIOR and EXTERIOR. Instead, the Path-preposition *chaàk* ('from') was used together with the Direction-verb as in (3) or the overt expression of state-transition is omitted and only Region:INTERIOR is expressed, as shown in (4). It is also possible to have only a Direction-verb without complements, as shown in (5).

(3) Dèk+phûchai **khuên** **chaàk** nám.
boy **ascend** **from** water
'A boy moves up from the water.'
(Tr_Th_8_031_Path_M_run_outof_sea_sideRL)

(4) Dèk+phûchai wîng **long** pai **nai** thàle.
boy run **descend** go **inside** sea
'A boy runs down into the water.'
(Tr_Th_7_059_Path_C_run_into_sea_sideRL)

(5) Dèk wîng **long** thàle.
boy run **descend** sea
'A boy runs down (into) the sea.'
(Tr_Th_9_059_Path_C_run_into_sea_sideRL)

The pattern shown in (4) can be compared with Swedish, where combinations of Direction:GC and Path:PLACE covertly express Path:END (See Chapter 4, Section 5.4). The Swedish group also expressed these scenes differently. The Geocentric adverbs *upp* ('up') and *ner* ('down') can be combined with prepositions conflating Path with Region as seen in (6) and (7).

(6) En ung pojke sprang **ner** **i** hav-et.
DET.INDF young boy run.PST down in sea-DET.DEF
'A young boy ran down into the sea.'
(Tr_Sw_2_031_Path_M_run_outof_sea_sideRL)

(7) En pojke spring-er **upp** **ur** hav-et.
DET.INDF boy run-PRS **up** **of** sea-DET.DEF
'A boy runs up out of the sea.'
(Tr_Sw_15_059_Path_C_run_into_sea_sideRL)

When the movement was from water to land, all Swedish participants behaved similarly to the Thai speakers: they typically used a Direction-adverb. When the movement is in the opposite direction (from land to water), they regularly used Path+Region-conflating preposition *ut* ('out') combines with the Region-preposition *i* ('in'), as shown in (8).

(8) En pojke på en strand som springer
DET.INDF boy on DET.INDF beach COMP.REL run-PRS

ut **i** vattnet.
out **in** water.DET.DEF
'A boy on a beach who runs out in the water.'
(Tr_Sw_11_059_Path_C_run_into_sea_sideRL)

A notable difference can be found in that the French speakers did not treat these scenes differently from other (and more typical) boundary-crossing scenes, as seen in (9) and (10).

(9) Un garcon qui **sort** **de**
DET.INDF.M boy COMP.REL **exit. 3SG.PRS** **from**

la mer **en courant**.
DET.INDF.F sea **run-PTCP**
'A boy that exits the sea running.'
(Tr_Fr_2_031_Path_M_run_outof_sea_sideRL)

(10) Le garçon qui **rentre** dans
DET.DEF.M boy COMP.REL **enter.3SG.PRS** in

l'eau **en courant** à la plage.
DET.DEF.F sea in run-PTCP at DET.INDF.F beach
'A boy who enters the sea running at the beach.'
(Tr_Fr_12_031_Path_M_run_outof_sea_sideRL)

A tentative explanation to the different patterns for these scenes in Swedish and Thai concerns the type of "boundary" that is "crossed". An entrance is experientially given as affording transition in and out of a Landmark. This means that being-located inside or outside is clearly demarcated and once transitioned, the moving entity might no longer be perceptually available to an observer located on either side. In this sense, the translocation between inside and outside can be *discrete*. When changing location between water and land, the border is less clear and *gradient* over time. One can be more or less in the water, but one cannot be more or less inside a room. The gradual transition is clearly marked on the body: as one goes down into the water, where the water gradually surrounds the body more and more. Given this difference between continuous and discrete state-transitions, it is not yet clear why Geocentric Direction is used to convey this sense. Neither is it clear why Swedish and Thai differ from French in this respect. More research is required here and it would probably be fruitful in this regard to investigate languages said to demote the continuity of motion, such as Japanese and Yucatec Maya (cf. Chapter 3).

6. Summary

The investigation of motion situations descriptions in Swedish, French and Thai presented in this and the previous chapter yielded findings that were both expected and less so.

The type of motion information expressed in a clause differed between French, on the one hand, and Swedish and Thai, on the other. The French-speaking group did not regularly combine Path with Manner. One effect of this separation was a higher number of clauses in the French data, further inflated by a higher proportion of static, scene-setting clauses. Thai and Swedish did not share these discursive and grammatical features. In this regard, two typical features of V-languages were found to be displayed in the French data: the constraint on combining Manner-verbs and discrete Region-change and the rhetorical style of static, scene-setting clauses. These results are supportive of Slobin's (2004, 2006) descriptions of French as low in *Manner-salience*.

In other respects, however, typical characteristics of V-languages were less easy to discern in the French data. The French speakers had the most diverse inventory of verbs expressing Motion. In terms of verb-lexemes, they also produced the largest number of Manner-, Path- and Direction-verbs. From the point of view of typically expressing Path in the main verb, this variation can be considered somewhat surprising. It then seems that the available lexical resources do not align neatly with the expected patterns of Talmian typology. This point is touched on by Matsumoto (2003: p. 411), who also find that "the issue of the lexical repertoire is at least partially independent of […] framing typology". The correlation, or lack thereof,

between lexical resources and motion typology is hitherto relatively unexplored and mainly noted as something to be taken into account (e.g. Slobin 2004). The nature of the stimuli can of course be an influential factor. Where Slobin (2004) investigations are based on still pictures as stimuli, this study used video clips with human agents. This could possibly stimulate participants to pay more attention to the specific details of how something moved.

By taking *both* resources and their use into account, we have shown that the French speakers do not only express Path in the verb, but regularly combine such verbs with Path-compatible prepositions, and in quite a number of cases even express Path by means of prepositions only (Table 5-16). In other words, it can be claimed that Path is typically distributed in French, and when localized, it is as often localized in the verbs as in the prepositions. As noted for other Romance languages, for instance Spanish (Aske 1989) and Italian (Iacobini and Masini 2006), this is largely dependent on the type of motion situation.

Swedish was found to mark the difference between location and translocation through different adverbs, corresponding to the Talmian notion of a satellite, but also commonly involved prepositions, e.g. *ut ur* ('out of'). With the addition of distribution patterns, Swedish behaved as an S-language. However, any such categorizations are of course further complicated by the patterns found in Thai, where the three categories of Path, Manner and Direction were typically realized as verbs with equal main verb status. To have these three types of verbs is not a matter only of having the possibility for combining them, but is also the most common pattern in the data (Figure 5-2). Thus, even when remaining within the "safe zone" of bounded translocation, the three languages displayed differences in which categories were profiled. This was most clear with Thai, where SVCs often express Manner, Path and Direction. Thai has previously been observed to express motion differently from the two classical types of the Talmian typology (cf. Zlatev and Yangklang 2004). Still, its classification as "equipollently-framed" by Slobin (2004) reflects the problems of introducing "a third type" into motion event typology: the criteria for belonging to such a type remain unclear (cf. Chapter 3). The analysis of Thai has shown not only that Path and Manner can be expressed by verbs in the same clause but, perhaps more importantly, that motion typology is not only a question of Path and Manner, but crucially involves Direction as well (as well as FoR and Region). The semantic categories and how they are mapped to form classes in patterns of conflation and distribution are thus questions of cross-linguistic variability. From the perspective of HSS, calibrating the parameters of variability is the essence of linguistic typology.

Additionally, more tentative findings concerned non-typical Region-change and vertical motion where descriptions of these scenes disobeyed the boundary-crossing constraint and the Swedish and Thai speakers used Direction- rather than Path-forms for describing the transition between media. However, the nature of the stimuli as geared towards bounded translocation makes systematic comparisons a question for future studies where a systematic distinction between bounded and unbounded

translocations is first priority. This should also include different kinds of boundaries, and more broadly, different types of Region-change.

In sum, in this and the previous chapter we could see how the framework of Holistic Spatial Semantics together with the taxonomy of motion situations can be used to investigate similarities and differences in the expression of actual motion in Swedish, French and Thai. The three language groups under study were found to express the semantic categories of HSS in different ways. The form-meaning mappings were found to differ, involving differences in which categories tend to be expressed. Some of these differences follow the characterizations of Talmian motion typology, but the languages also align themselves in ways seldom discussed in spatial semantics and motion typology. These findings appear from the perspective of distribution and conflation patterns across clauses in their entirety.

Part III
Non-actual motion

Chapter 6
What is non-actual motion?

A hundred years ago, the cobblestone street ends here.
William Burroughs

1. Introduction

In Part II, we were concerned with *actual motion* in language and experience. In the following three chapters, another facet of motion is addressed: *non-actual motion*. As a point of departure, let us consider sentences with motion expressions used to describe static configurations, such as those in (1)-(4).

(1) The mountain range goes all the way from Mexico to Canada.
(Talmy 2000a: 104)

(2) The mountain range goes all the way from Canada to Mexico.
(Talmy 2000a. p. 104)

(3) The highway crawls through the city.
(Matlock 2004b: p. 232)

(4) There is like this snaking road up the hills.
(Brandt 2009: p. 583)

At first glance, this way of speaking might occupy a relatively marginal, metaphorical and idiomatic corner of semantics. However, various analyses have used sentences such as those in (1)-(4) as paradigmatic reflections of a semantics that is grounded in embodied cognition (cf. Talmy 2000a; Langacker 1990; Matlock 2004b; Brandt 2009). It has been argued that such sentences share a close experiential link to actual motion, and that an implicit, "subjective", "fictive" or "mentally simulated" experience of motion is an indispensable part of their meaning. While the sentences in (1) and (2) denote the same state-of-affairs, they are still arguably different in meaning. The verb *go*, together with two Landmarks as source and goal, frames the static situation as two bounded translocations in opposite directions. Despite describing static situations, the sentences are thus said to express a sense of directionality, dynamicity and an implicit or fleeting form of change.

Verbs that express motion are known to describe less concrete situations conceived in dynamic terms (e.g. "MOTION is CHANGE"). This is shown in (5)-(7) where motion expressions convey different kinds of change. Per such an analysis, (5)

involves GEOCENTRIC motion along an imagined ladder. The non-translocative motion in (6) expresses emotional upset and (7) expresses Region-change to the INSIDE of a tournament.

(5) Marie Curie is rapidly climbing the career ladder.
(6) Niels Bohr was shaken by Heiselberg's experiments.
(7) Confident he would win, Max Planck entered the poker tournament.

In contrast to (5)-(7) where the motion expressions *stand for* change in other domains, the sentences in (1)-(4) describe the configuration of a *static* spatial entity. How can motion expressions be used to describe its antithesis, stasis? The answer common to some of the most influential analyses (Langacker 1990; Talmy 2000a; Matlock 2004b) is that an experience of motion "not really there" is superimposed on the situation. To explain why motion expressions are used beyond actual motion, this "extended" use indicates the dynamic mental operations that underlie and guide how linguistic meaning takes form. In support of this point, the semantic difference between (1) and (2) is explained by appeal to experiences of two distinct mental acts of fleeting motion in opposite directions. This "fictive", "subjective" or "simulated" motion is considered as paradigmatic for the cognitive foundations of linguistic meaning (Talmy 2000b) and even for processes of grammaticalization (Langacker 2006).

The experientialist argument states that a purely extensional (or truth-referential) model of semantics cannot capture this crucial aspect of semantics and hence, linguistic meaning should include aspects of non-linguistic cognitive processes of perception and imagination where some, though not all, may involve metaphor (cf. Langacker, 1987; Talmy 2000a; Matlock 2004b; Brandt 2009). Inspired by Brandt (2009), Blomberg and Zlatev (2013) refer to such experiences as *non-actual motion,* or *NAM* for short, and expressions reflecting such experiences are referred to as *non-actual motion sentences* (*NAM-sentences*). We defined and motivated this choice in the following way.

> [T]he more neutral term *non-actual motion* to refer[s] to certain dynamic qualities of intentional acts that can be seen as motivating the use of sentences with motion semantics to denote static situations. […] Thus, when we speak of *non-actual motion sentences*, we use this as a cover term for all sentences in which (minimally) a motion verb is used to denote a situation that lacks observed motion. (Blomberg and Zlatev 2013: p. 3)

In this chapter, I follow Blomberg and Zlatev (2013) in arguing that previous attempts at grounding NAM-sentences in the experience of motion have oversimplified the phenomenon and thereby glossed over important experiential and

semantic differences. Inspired by phenomenological notions such as *intentionality*, *kinaestheses* and *life-world* (see Chapter 2), Blomberg and Zlatev (2013) offer re-interpretations of previous semantic analyses, thereby grounding not only the experiential motivations traced in previous analyses but also the analyses themselves in a broader phenomenological framework. This re-interpretation serves as the basis for the design of a study intended to elicit NAM-descriptions in Swedish, Thai and French, described in Chapters 7 and 8.

Before turning to this attempt at re-interpretation and cross-fertilization between cognitive approaches to semantics and phenomenological analyses of experience, I begin by providing some semantic criteria for the kind of sentences that qualify as NAM-sentences.

2. Some semantic indicators

With some reflection on NAM-sentences, one might consider them to express a kind of metonymy, from the moving agent to the entity on which the movement is carried out. Thus, it is not the road that is moving, but rather the *possibility* of someone's movement along the road. Irrespective of the intuitive character of this interpretation, previous analyses have rejected it as a general explanation of the phenomenon. In fact, Talmy explicitly states that the possibility of motion is not what he is after, and, as we shall see, neither is Langacker.

> A purer demonstration of this type of fictive motion would exclude reference to an entity that supports the actual motion of other objects or that itself may be associated with a history of actual motion. (Talmy 2000a: p. 104)

To initiate the exploration of previous analyses, I would like to point to a diverging opinion. Jackendoff (1983) argues that a verb such as *go* has an essential meaning that is not derived from actual motion. Across its various domains, encompassing for instance the sentences in (8)-(10), the verb *go* shares a monosemic meaning based in the conceptual system itself (what Jackendoff calls "the Go-function"). It singles out change as opposed to stasis. Within the conceptual system, physical space is not privileged and hence physical motion cannot be prioritized over dynamism in other domains. This reasoning could be extended to all expressions where (translocative)

motion is used, i.e. there is no need to invoke an account of polysemy or a connection to experience or simulation of motion.[45]

(8) Newton goes to the apple tree.
(9) "I'm going to be in a lot of trouble", thought Galileo.
(10) The Nobel Prize went to Schrödinger.

While this may offer an economical account, it still seems warranted to propose a close semantic connection between expressions of actual and non-actual motion, without blurring the distinction between them. Matsumoto (1996) provides three arguments for "believing that some sort of motion is involved" (ibid: p. 185) in NAM-sentences. Without being conclusive, these arguments nevertheless provide an initial appreciation of motion involvement in NAM-sentences. The first argument has already been hinted at. The source and the goal in (1) and (2) are reversed: a semantic difference that "cannot be explained without appealing to the directionality of a motion" (ibid: p. 186). That is, the prepositions *from* and *to*, expressing Path:BEGIN and Path:END, are incompatible with a static verb.

(11) The road *lay/went from Burton to Redding.

(Talmy 1983: p. 236)

A second indication for the involvement of motion concerns temporality. In (12), the adverbial phrase *for a while* does not (typically) refer to the time of a highway's existence along the coast – the highway is not going to be moved or destroyed; rather, it is the duration of travel on the highway along the coast that endures *for a while*. To explain how the sentence is understood in this way, Matsumoto suggests that reference to the time of a possible motion along the highway is required.

(12) The highway runs along the coast for a while.

(Matsumoto 1996: p. 186)

The third and final pointer "suggests that such expressions implicitly involve the motion of something unexpressed in the sentence" (Matsumoto 1996: p. 188). The difference between English and Japanese is telling in this regard. Whether an object affords human motion or not determines which verbs are acceptable in NAM-

[45] A similar argument could also be made on the basis of Coseriu's criticism of prototype theory discussed in Chapter 2. In such a reading, the signification of *go* does not differentiate between designations that refer to different semantic domains. Rather, the verb itself would be neutral with respect to them.

sentences, cf. (13) and (14). The former describes a traversable object, a highway, and is compatible with three close-to synonymous generic verbs for motion, whereas the latter is acceptable only with the Path-verb *tooru*.

(13) Sono haiuee wa heeya no mannaka o
the highway TOP plain GEN center ACC

{tooru/iku/tootte iku}.
{go.through/go/go.through.go}
'The highway {goes through/goes in/goes through} the center (or middle) of the plain.'

(Matsumoto 1996: p. 214)

(14) Sono densen wa heeya no mannaka o
the wire TOP plain GEN center ACC

{tooru/*iku/??tootte iku}.
{go.through/go/go.through go}
'The wire {goes through/goes in/goes through} the center (or middle) of the plain.'

(Ibid: p. 215)

According to Matsumoto, expressions of objects that afford human motion are in Japanese compatible with more Motion-verbs than those that do not. This is interpreted as support for a connection between NAM-sentences and motion situations with human beings as their agents. The quite limited amount of studies on non-actual motion might indicate that Matsumoto's three arguments should be taken with a grain of salt – to date, Matsumoto (1996), Amagawa (1997), Takahashi (1998), Rojo and Valenzuela (2003, 2004), Stosic and Sarda (2009), Silva (2009) and Hoffmann (2011) are among the few studies that cross-linguistically compare NAM-sentences, and then often with English as one of the investigated languages.[46]

How to spell out the connection between NAM-sentences and the experience of motion in more detail is therefore an open question where the main clues are intuitions and theoretical analyses based on English (e.g. Langacker 1990; Talmy 2000a; Matlock 2004b). Despite the seeming agreement of these three analyses, I suggest that they in fact point in different directions. Instead of being largely equivalent, they propose alternative and even competing experiential motivations to NAM-sentences. With these different points of departure in mind, it can be argued

[46] In particular, it has come to my attention that the evidence from Japanese is disputable. In personal communication, Matsumoto expressed some hesistance against his own argument and another native Japanese speaker found the unacceptability of the verbs in (14) questionable.

that generalizing based on similarities between these analyses runs the risk of glossing over several different types of NAM-sentences and distinct types of motivational experiences under (too) general concepts.

3. Reinterpreting previous analyses

A brief glance at the literature tells us that several different terms are used to describe the same types of sentences: Langacker (1990) speaks of *subjective motion*, Talmy (1983) of *virtual* and later of *fictive motion* (Talmy 2000a). Matlock (2010) uses the term *abstract motion*. There is an abundance of different terms, but do they mean the same thing? The cognitive analyses are in agreement that the motion in question is anchored at the ego-pole: a subjective, cognitive or mentally superimposed motion. Despite these agreements, there are reasons to doubt that the technical terms highlighted above should be viewed as synonymous. First of all, terms such as 'fictive' and 'subjective' are so general that they cover all instances where linguistic meaning bears an experiential taint, thus "the term 'fictive' is largely synonymous with 'conceptual'; if something is a mental construction, it is said to be fictive" (Brandt 2013: p. 190). To state what is specific about this use of motion expressions requires close analysis and separation between different experiential and conceptual motivations.

Another case in point is, as Blomberg and Zlatev (2013) note, that the terms fictive motion, subjective motion and abstract motion have different scopes. To anticipate the respective analyses to be discussed later in this chapter: the sentences in (15)-(18) and those in (1) are all analyzed as instances of fictive motion by Talmy (2000a: p. 101) with a common source in "a cognitive bias towards dynamism". Langacker's notion of subjective motion is restricted to (15) and (17), which share "the movement of the speaker's focus of attention along a visual mental trajectory" (Blomberg and Zlatev 2013: p. 4). Matlock (2010) characterizes (15) as an example of abstract motion, a term which Langacker uses to refer to sentences such as (16), where a motion expression stands for change in a domain other than space.

(15) The highway crawls through the city.
(Matlock 2004a: p. 232)

(16) The milk is about to go sour.
(Langacker 1990: p. 155)

(17) An ugly scar extends from his elbow to his wrist.
(Langacker 2001: p. 9)

(18) The enemy can see us from where they are positioned.
(Talmy 2000: p. 115)

As can be seen, there is quite a terminological confusion where the scope of the analyses varies between different authors. The aim of this section is twofold: (i) to investigate the three concepts of fictive, subjective and abstract motion and (ii) to provide conceptual clarification through reinterpretation within a phenomenological framework. To anticipate, this will reveal the multi-faceted and non-unitary nature of the proposed motivational factors for NAM-sentences.

3.1 Fictive motion as self-motion

Perhaps the most comprehensive analysis of NAM-sentences is provided by Talmy (2000a). In this analysis, the term *fictive motion* is the overarching term for a wide array of different kinds of spatial expressions. Under this umbrella, several different classifications are made. Talmy provides the sentences in (19)-(25) as examples of different types of fictive motion. Some express static configurations of space with a Motion-verb, as in (19), others with posture or perception verbs together with prepositions and adverbs expressing Path and Direction, e.g. (20) and (22). It is also notable that one of Talmy's examples expresses actual motion (25).

(19) The fence goes/zigzags from the plateau to the valley.
(20) The cliff wall faces toward the valley.
(21) I directed him away from the lobby.
(22) The sun is shining into the cave.
(23) The enemy can see us from where they are positioned.
(24) As I painted the ceiling, (a line of) paint spots slowly progressed across the floor.
(25) I sat in the car and watched the scenery rush past me.

From these sentences, it is clear that fictive motion is a very broad concept for Talmy. Leaving the heterogeneity of these sentences aside for the time being, the term fictive motion suggests that these examples are similar in that they do not refer to what is contrastively called "factive motion" (or actual motion). To account for this semantic distinction between two kinds of motion expressions, a conceptual or cognitive explanation is proposed. The explanation suggests that human cognition resides on a *ceptive* continuum between fictive and factive.[47] As suggested by the neologism, the

[47] *Ception* is a neologism from the root common to the nouns perception and conception. Talmy does not mention the close etymological connection from the Latin root *capere*, covering senses as 'to capture', 'to take' and 'to understand'.

ceptive scale is a source common to both perception and conception. One way to put it is that both perception and conception are structured in a similar way.

Fictive and factive motion can thus be seen as paradigmatic instances of a more general cognitive mechanism. When something is assessed as factive, then it is considered as "more veridical" (Talmy 2000a: p. 136). In other words, to make a factive assessment is to take it as literal, as a true statement in accordance with what we take the world to be like. In short, the factive attitude is *truth-referential*. Conversely, something assessed as fictive is "less veridical" and thereby not in resonances with our beliefs.[48] If this is the case, then there is something of a mystery to solve. Returning to the mountain range, Talmy asks why the fictive expression in (1), repeated below as (26), is more common than its static or factive equivalent (27).

(26) The mountain range goes from Mexico to Canada.
(27) The mountain range is located between Mexico and Canada.

The expression of fictive motion tells us something impossible: the mountain range is represented as being in motion; it is said to translocate from one country to another. In an attempt to clear up this apparent tension between what we take the world to be like and how we talk about it, Talmy appeals to "a cognitive bias towards dynamism" (Talmy 2000a: p. 101, 171-172). It is possible to understand the sentence in a fictive sense rather than in a factive sense. The reason for our ability to do so, and the predisposition to use (26) rather than (27) is due to the bias of ception in favor of change and what we can affect. Because of this preference for the moving over the immobile and the changing over the static, we tend to say that mountain ranges move, according to Talmy.

> The cognitive bias toward dynamism in language shows up not only in the fact that stationary phenomena are fictively represented in terms of motion more than the reverse. In addition, stationary phenomena considered by themselves can in some cases be represented fictively in terms of motion even more than factively in terms of stationariness. […] Factively static phenomena in cognitive systems other than language may also be more readily cognized in fictively dynamic terms than in static terms. (Talmy 2000a: p. 171-172)

While there is nothing controversial in establishing a connection between cognition and abilities to act, the striking element of Talmy's analysis is to place this connection

[48] Fictive and factive can be ordered on a scale, but it is misleading to make a parallel quantitative treatment of veridicality. The latter concept is a matter of either/or and not a matter of degree.

within a *fictive* mode of cognition. Even though the purpose of the fictive-factive continuum is to avoid a divide between real and unreal, it cannot avoid but reinscribe this divide. If fictive motion is taken as a mentally superimposed motion, then how can it in the first instance be placed alongside or even forced into conceptions about reality?

> Since the dynamic process of imagistic motion does not correspond to anything outside itself, it seems misleading to apply the notion of fictivity, implying, as it does, that something is conceptualized as not real. (Brandt 2009: p. 579)

The tension and inconsistency between the bias towards dynamism and fictivity can be overcome. Instead of treating it as an *ontological* distinction, it might be more feasible to conceive of the fictive and the factive mode as two distinct (but equally valid or at least not mutually excluding) modes of givenness, what phenomenologists call *pre-reflective* and *reflective* (cf. Sartre 1956[1943]). The fictive mode, where we attend to change, dynamism and that which we can affect can be understood as a pre-reflective or engaged mode of experiencing. Talmy's only non-linguistic example of "fictive" motion is telling in this regard. Consider perceiving a lopsided painting. What is simpler: to perceive it as an object calling for correction or, say, a rhombus-shaped object? By virtue of being a representation and hence possibly seen as representing something, a painting is not the best of examples. Nevertheless, the painting is also a physical object (*das Bildding* as Husserl would have it). Between the two choices given, then, it is easy to agree with Talmy that visual perception would typically privilege the former over the latter, which is of course largely due to the norm that paintings are supposed to hang straight on walls *and* that we in the life-world take the painting rather than the wall to be tilted. Despite these precautions about Talmy's example, the inclination to perceive the painting as calling for correction is not to privilege a fictive conception, but is better seen as an action-oriented attitude that corresponds well to the enactive and engaged mode of perception invoked by phenomenologists such as Husserl (1975 [1939]) and Merleau-Ponty (1962 [1946]). Perception is permeated by affect and values; it urges us to draw closer to the desirable and stay clear from the undesirable. In this way, perception is not neutral and distanced, but committed and serves as an indispensable aspect of acting.

The engaged, pre-reflective mode oriented towards action can be contrasted with a reflective mode of assessments, judgments and evaluations. The latter is more distanced and not geared towards immediate and direct engagement with the environment, as when the painting is not seen as lopsided, but as having a certain shape. In this mode, we reflect over experience and thematize *what* we experience. In reflection, the hammer, to borrow the famous example from Heidegger's *Sein und Zeit* (1968 [1927]), is not for hammering. When I attend to the hammer reflectively,

I turn to the hammer with a different attitude: the hammer as a material object. This means that I can experience the hammer as an object of a certain shape or with a certain weight. It has certain material properties: it is made of steel with a rubber handle, and so forth. I can go on in reflection and think about how the hammer came to be. This particular hammer can become the vehicle for reflecting about the nature of tools or even the essence of material objects in general. This reflective attitude towards the hammer can be contrasted with the type of experience characteristic of using the hammer as a tool. In this mode, the hammer is something for hammering and not an object with certain material properties. Pre-reflectively, I do not think about the objective properties about the hammer. What I have in mind is using something for hammering.[49] The two modes are distinct, but *pace* Talmy, the difference is not between *what* something is assessed to be, but in *how* an object is disclosed in experience. Importantly, in both modes I am experiencing the same hammer, only that the hammer is given with different attitudes. It would thus be erroneous to treat, as Talmy does, the reflective as more attuned with reality and the pre-reflective as less so. The hammer in an engaged mode is just as much a hammer as in distanced reflection.[50]

Following Blomberg and Zlatev (2013), I have argued that Talmy's notion of cognitive bias towards dynamism can be interpreted as similar to an enactive and engaged mode of experience. The question is what this has to do with motion. Returning to the distinction between *lived* and *observed* motion introduced in Chapter 1, the motion in question is of the lived kind. It is a bodily, lived form of motion: a motility and movement inherent in experience (and thereby seldom thematized as an experience). Just think about getting a better look at a partially occluded object. The object becomes more visible through the movements carried out: tilting your head, adjusting your posture or changing to another vantage point. These bodily movements are not in focus; they are rather means to achieve the end where the focus lies. In this reading, Talmy's "bias towards dynamism" can be seen as compatible with the capacity for motion as a central precondition for perceptual intentionality and even for the life-world (e.g. Husserl 1970a [1936]; Overgaard

---

[49] Heidegger (1927) makes a distinction between the two attitudes V*orhandenheit* and Z*uhandenheit*. The former, *present-at-hand* in English translation, is a theoretical and reflective attitude of observation and non-engagement while the latter, *ready-to-hand,* is the "ordinary" mode of acting with certain aims. In our everyday experience, the latter is prioritized. Heidegger supports this by appealing to present-at-hand as typical for "breakdown" cases: when the activity of hammering does not achieve its goal, say that it fails to hammer the nail, then we interrogate into *why* it did not function as it should. We then ask how the malfunctioning hammer is *different* vis-à-vis the constitution and material configuration of hammers that do function.

[50] One may argue that phenomenologists such as Heidegger and Sartre, who see the reflective as a deficient or derivative mode of experience, commit the reverse mistake of privileging the pre-reflective over the reflective.

2012). Motility as a precondition for perceptual intentionality can be illustrated with the tilted painting discussed above. By tilting your head, the angle changes and in that act your focal perception of the painting also changes. What was focally perceived is now in the perceptual margins and vice versa. In phenomenological parlance, you are now provided with the same object but with another *appearance* against a *horizon* of different possible appearances of the painting. It is this multiplicity of different appearances that leads phenomenology to consider the object as *transcendent*, as always open for yet another appearance. We do not attend to this inherent limitation of every presentation: the immediately given appearance is not the object in its entirety; it is just one aspect which depends on the perspective of the object and hence on one's bodily position. Nevertheless, one still perceives the object in its entirety as a three-dimensional object with a backside. What you perceive is not just the appearance but also the absent profiles.

How can it be that objects are always perspectivally perceived yet given as transcendent wholes in space and time? To resolve this paradox of perception, Husserl appealed to the notion of *kinaestheses* according to which perception is effectuated by the correlation to possible bodily movements.

> Every perception which presents the object to me […] leaves open the practical transition to other appearances of the same object, specifically to a group of appearances. […] There is thus a freedom to run through the appearances in such a way that I move my head, alter the position of my body, go around the object, direct my regard toward it, and so on. We call these movements, which belong *to the essence of perception* and serve to bring the object of perception to givenness from all sides insofar as possible, *kinaestheses*. (Husserl 1975 [1939: pp. 83-84], my emphasis.)

Why does Husserl see kinaestheses as belonging "to the essence of perception"? As discussed in Chapter 2, every perceptual appearance necessitates that another appearance is always possible, that there is always the possibility to go on. It is here that Husserl's formulation *"ich kann immer weiter"* ('I can always go on') is truly applicable. In this way, the riddle of objects as both perceived through series of perspectival appearances and in their entirety is comprehended by appeal to the freedom of motility. Through kinaestheses, we are able to move not just in relation to objects but also *through space* (Overgaard 2012). In this way, there is not just a horizon of the object but also a fundamental embedding against a "kinaestethic horizon" (Zahavi 2003) as an endless infinite continuity of possible vantage points and perspectives. Just as much as I am here-and-now, I am also there-and-then. The crucial point is thus "not that we can perceive movement, but that our very perception presupposes movement" (Talmy 2000a: p. 100).

By reinterpreting the so-called cognitive bias towards dynamism in terms of self-motility and its relation to perception, it is possible to constrain Talmy's wide view of non-actual motion. Blomberg and Zlatev (2013) contrast non-actual motion as motivated by *kinaestheses* from another aspect of perceptual incompleteness, namely the point of view of a possible Other. Incompleteness is not only supplemented by self-motility but also by *transcendental intersubjectivity*. As put by Zahavi (2003: p. 115): "Husserl's thesis is that my experience of objective validity is made possible by my experience of the transcendence […] of foreign subjectivity." That is, that a kind of principal intersubjectivity is indispensable for the constitution of the objective world is the Other's experience of the subject. Zahavi continues by echoing Sartre's (1956[1943]) description of the subject's relation to the Other as an intrinsic component in the constitution of the self: "I take over the Other's objectifying apprehension of myself, in which my self-apprehension is mediated by the Other" (Zahavi 2003: p. 117).[51] By differentiating self-motility from the perspective of the Other, we can note the difference between the sentences in (28)-(29) and (30)-(31), all considered to be as expressions of fictive motion by Talmy.

(28) The road goes through the forest.
(29) The path leads to the top of the mountain.

(30) The enemy can see us from where they are positioned.
(31) I must look tall to her.

The sentences in (28) and (29) can both be seen as (potentially) motivated by the kinesthetic and enactive nature of perception. A phenomenological consequence of kinesthetic effectuation is that perception itself is dynamic, not only in the sense of a process unfolding together with motility, but also that perceptual objects give themselves in the dynamic flow of space. There is always a dynamic and kinesthetic relation to the environment through which we perceive a road or a path as features of the environment that afford movement (through a forest, or to a summit); likewise, we perceive a tilted painting as "leaning," and thus calling to be set straight. Such an analysis is not sufficient to account for the examples in (30) and (31), which *stricto sensu* lack a relation to experiences of non-actual motion. Instead, these examples can be conceived in terms of the perspective of the Other, or in Zahavi's words quoted above, to "the Other's objectifying apprehension of myself". Returning to the analysis of actual motion in Chapters 3 and 4, we can say that there is no Motion in the

[51] In phenomenological philosophy, the Other with the initial letter capitalized is an important concept (e.g. Levinas 1969). It signifies that another person is not just another object in the life-world but a subject different from the self.

sentences in examples (30) and (31); the prepositions *from* and *to* do not carry a sense of motion, but express Path:BEGIN and Path:END, respectively (cf. Zlatev 2007). The difference in the two cases thus lies in the way the perceptual encounter is framed: from the perspective of the perceiver/observer in the first case, and from the perspective of the perceived object (here, the objectified self) in the latter. Nevertheless, the examples stay true to the dynamic nature of perception and to the directedness of intentionality. Many of Talmy's examples of "fictive motion" can rather be seen as motivated by the dynamic conditions for perceptual intentionality: either those involving affordances for motion or those reflecting intentional directedness.

This reinterpretation of Talmy connects motility to non-actual motion. This connection, however, fails to do justice to instances of NAM-sentences with a figure that lacks a connection to the movement of the self. For instance, a mountain range or a scar neither afford motion for human beings nor require a reference to alternations between the beginning/middle/end of Path. The primary validity of this interpretation would be in situations where there are perceived *affordances* for motion. The concept of affordance originates from the psychologist James Gibson's *ecological psychology*. According to Gibson, affordances are latent action possibilities in the environment (Gibson 1977, 1979).[52] These are always dependent on the agent, so that a path through the forest affords motion for a human being but not for a bird that flies over the treetops. In cases such as mountain ranges or scars – where there are no affordances for human motion – I propose that another explanation, or experiential motivation, is required.

3.2 Subjectification and intentionality

On Langacker's interpretation, the difference between actual and non-actual motion is a matter of *construal*. This is a term invoked by Langacker to account for linguistic means for signaling possible alternations in the speaker's perspective. Actual motion pertains to an objective construal of motion and non-actual motion to a subjective construal; hence the term preferred by Langacker: *subjective motion* (Langacker 1990). For this reason, Langacker does not make a difference between expressions such as (1) and (2) where the grammatical subject (*the mountain range*) denotes something without affordance for motion and expressions where the subject denotes something that does, as in (28) and (29). For Langacker, subjective motion is independent of affordance for human translocation.

[52] Sonesson (2010) shows close correspondence between Gibson's theory and Husserl's concept of the life-world.

It is easy to read subjective as corresponding to "mind-dependent" and objective as "mind-independent". Irrespective of Langacker's own intent – the concepts of fictive and subjective used in cognitive linguistics are easily trapped in the pitfall of operating only with mind vs. world (cf. Brandt 2009) – the underlying approach of subjective motion is open for phenomenological re-interpretation. Based on Zlatev (2010) and Blomberg and Zlatev (2013), I argue that the opposition between subjective and objective construal can be understood in terms of the phenomenological concept of *intentionality*, discussed in Chapter 2, Section 3.

Langacker states that every act of meaning involves someone meaning something, *the conceptualizer*, about something, *the conceptualized*, in a particular manner, *the construal*. These three elements are indispensable for all meaning, not just linguistic meaning.

> An entity is said to be objectively construed, to the extent that it goes "onstage" as an explicit, focused object of conception. [...] An entity is subjectively construed, to the extent that it remains "offstage" as an implicit unselfconscious subject of conception. At issue, then, is the inherent asymmetry between the conceptualizer and the conceptualized, between the tacit conceptualizing presence and the target of conceptualization. (Langacker 2006: p. 18)

Langacker's terminology is somewhat idiosyncratic so let us unpack this dense quote. In an objective construal the conceptualizer is concerned with *something*, a conceived object. For simplicity's sake, let us think of the conceived object in perception. This perceived object is "onstage"; it is the focus of perception against a background of possible perceptions – an onstage region (see Figure 6-1). Thus, we can think in terms of figure/ground-relation in Gestalt psychology or in terms of a *horizon*, as discussed in the previous section. That is, every perceived object is embedded against a horizon of other objects that are, so to speak, co-present but not the focal concern of experience (cf. Sonesson 2004). This is objective construal for Langacker.

Every perceived object requires a perceiver. In perceiving, we are aware of what we perceive, but less so of the fact *that we are perceiving*. Our attention is not focused on the "act" of perceiving but on the object of perception. For this reason, the subject of conception remains, in Langacker's parlance, "offstage". Even though the perceiver is not "onstage" – in focus of the perceptual act – he or she is still indispensable to perception. Therefore, we cannot dismiss that someone perceives something in a certain way. The way something is perceived involves how it is *construed* (Langacker 1990).

When this distinction is applied to motion, it can either be objectively or subjectively construed. In the former case, motion is concerned with something "onstage" – the subject's attention directed towards an object. This could be something like the definition of observed motion from Zlatev, Blomberg and David

(2010), discussed in Chapter 3: "continuous change in the relative position of an object against a background". When the focus is on the object – in this case a moving one – then one does not attend to how one perceives motion. However, to return to the discussion of *kinaestheses* above, perception crucially involves movement and dynamicity. This would be attended to in a subjective construal. When the subject thinks about the act of conceptualization, when attention is on how rather than what, then the focus is shifted from the onstage to the offstage region, from the object to the subject. Examples of an objective and a subjective construal of motion are shown in (32) and (33), respectively.

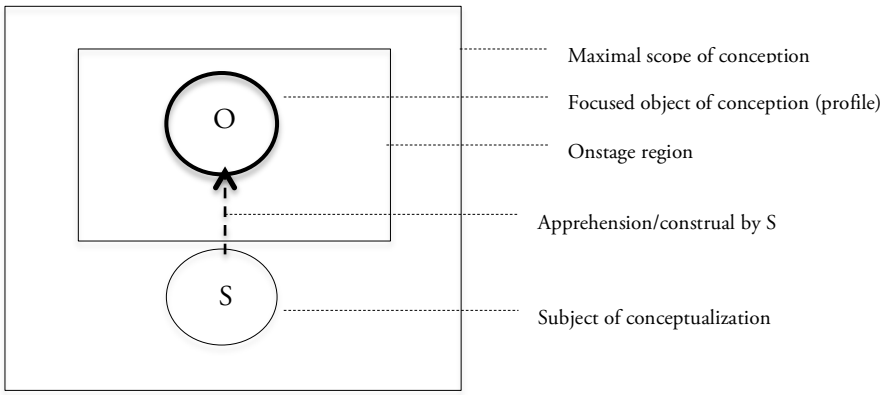


Figure 6-1. Illustration of objective construal (Adapted from Langacker, 2006: p. 19.)

(32) The balloon rises.
(33) The trail rises steeply near the summit.

(Langacker 2006: p. 25)

In (32), the verb *rise* represents the motion of the denoted object; the balloon is "an explicit focused object of conception" (cf. the quotation from Langacker given on the previous page), where the presence of the speaking subject is implicit and completely "offstage". To say that the subject is implicit is to say that the expression does not mark how the speaker conceptualized the situation. The expression tells of a situation available to all observers. Conversely, in (33) the speaker's attention is not only on the trail, but intrinsically involves how the subject attends to it. The process of attending is dynamic and unfolds over time; it involves what Langacker (1999) calls *visual* or *mental scanning*. To put it bluntly, it is the balloon that rises in (32), whereas it is the attention focus of the speaker that rises in (33). When a lexeme, in this case *rise*, takes on a subjective construal then it has undergone *subjectification* (cf. Langacker 2006). Such subjective construal can be illustrated as in Figure 6-2 where the arrow

indicating apprehension or construal is in bold and therefore the focus of the conceptualization.

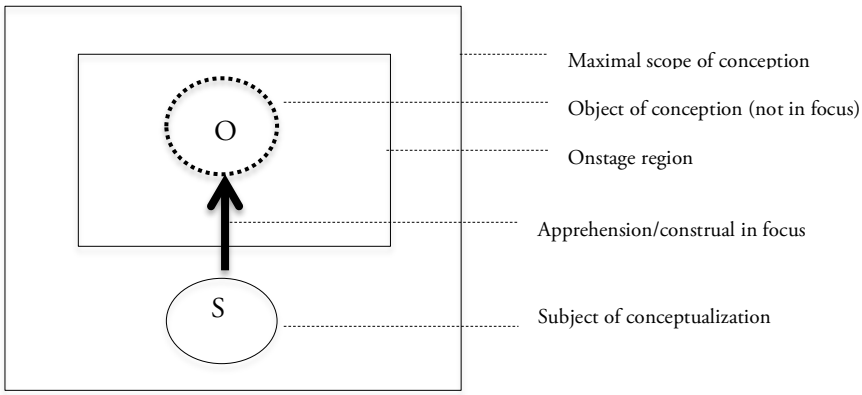


Figure 6-2. Illustration of subjective construal

Just as with the cognitive bias for dynamism, we can draw a connection to phenomenology. A parallel explanation and perhaps even a precondition for proposing the distinction between subjective and objective construal can be sought in the correlational nature of intentionality (Zlatev 2010; Blomberg and Zlatev 2013). As discussed in Chapter 2, intentionality is the relation between a subjective intentional act (*noesis*) and an intentional object (*noema*). This correlation or rather *co*-relation is meaning itself, or perhaps better phrased: without the correlation between intentional act and object there would not be any meaning. Langacker is arguably making a similar claim about conceptualization as requiring both a conceptualizer and something conceptualized.

> It is easy to see [Langacker's analysis of construal] as a paraphrase of a phenomenological analysis of consciousness: the 'objectively construed' is the theme, while the whole 'onstage' region is the field of consciousness (Gurwitsch 1964). The 'conceptualizer', situated in the background (margins of consciousness or 'offstage') is the ego, and the asymmetric relationship between the latter and the "conceptualized" is that of intentionality itself. (Zlatev 2010: p. 434).

Just as Langacker argues for the necessity of both conceptualizer and conceptualized, Husserl similarly considers the intentional act and the intentional object as equally indispensable for meaning (Husserl, 1982 [1913]; Moran, 2005). We can illustrate the dual co-dependency of intentionality in the following way. On the one hand, there is an active process, the present participle form of a verb denotes the intentional

act ("V-ing"), and on the other hand, an intentional object is expressed in the past principle: "V-ed". The ego is perceiv*ing*/wish*ing*/imagin*ing*, while the object is perceiv*ed*/wish*ed*/imagin*ed*. This means that something must correlate with the act of the ego, otherwise there is no intentionality. The intention must be directed towards something – an act without directedness is not intentional and arguably not an act at all. The intentional relation is not only dependent on what, but also on how; the character of the intentional relation depends on whether the intentional object is perceived, wished, imagined, etc. Similarly, Langacker speaks of "the subjective pole" and "the objective pole" in any act of conceptualization, as well as in corresponding sentences. Motion is a feature of the intentional object in the situation represented in (32), while it characterizes the intentional act of attending to the shift of attention in the perception of the path in (33).

Langacker's proposal is certainly general but one may have qualms that it is too general. For example, it also purports to account for the relation between expressions of deontic and epistemic modality, as in (34) and (35); The epistemic use of *must* in (34) has, according to Langacker (2006), also lost some of the "onstage" meaning of *must* from (34).

(34) You must come on time.
(35) You must be wrong.

In this way, linguistic expressions undergo a process of subjectification in historical time, in which their objective-pole correlate is "bleached," while their subjective, dynamic correlate (such as processes of mental scanning) is retained and thematized. As noted above, there is an inherent danger of collapsing synchronic and diachronic processes under a general cognitive explanation. In doing so, one risks losing sight of what is specific about non-actual motion (sentences). Blomberg and Zlatev (2013) argue that if the notion of mental scanning is to apply (34) and (35), then its intuitive character, based on the *concrete acts of attention shift* in time, would be lost.

> If the difference between expressions of actual motion and non-actual motion lies only in the fact that the latter focuses only on the dynamic character of intending, while the former (also) on the object intended, then this can hardly be regarded as especially revealing of motion: actual or non-actual. The fact that intentionality has a correlational structure, and its subjective-pole is dynamic and occurs in a kind of "inner time consciousness" (corresponding to Langacker's notion of "processing time") is an overarching idea within Husserlian phenomenology [cf. Zahavi, 2003], which means that it applies to all phenomena, for example both motion and change. (Blomberg and Zlatev 2013: p. 12)

As Blomberg and Zlatev (2013) go on to note, Langacker seems to take this consequence without hesitation: "it is not at all obvious that change and motion are ever strongly dissociated in our conceptual world" (Langacker, 1990: p. 156). This conclusion is however undesirable because motion and change are separate phenomena in the life-world: the chameleon's color change or its swift movement are two quite different ways to evade predation. Perhaps this is the problem with Langacker's analysis of non-actual motion: it is so preoccupied with the intentional act that it forgets the intentional object equally indispensable for the intentional relation. What remains in the analysis is only the subjective part of "mental scanning", thus only reversing (and thereby reinforcing) the objective/subjective dichotomy. Similarly to Talmy's analysis, part of the problem is to operate only with the binarity of subjective/objective or fictive/factive, which effectively forces one into the pitfall of mind-dependent and mind-independent. Within such a system of opposition, there is always the risk of privileging one over the other. The challenge is to think both of them at the same time. *Per* Husserl and *pace* Langacker, the (transcendence of the) object-pole cannot be so easily neglected. This means that Langacker's explanation of non-actual motion sentences –they involve "mental scanning" similar to the analogous cases of actual motion – does not account for why the intentional act becomes thematized.

To summarize, the interpretations of Talmy and Langacker are both on the right track in attributing non-actual motion to different aspects of experience. Since there has been a tendency to conflate the two different possible motivations under the umbrella term "mental simulation", I suggest that this notion is also open to phenomenological reinterpretation.

3.3 Simulation and imagination

A common explanation of non-actual motion expressions to be found in the literature is presented in terms of *mental simulation* (Matlock 2004a, 2010). For instance Matlock (2004a: p. 1390) states that in using NAM-sentences, "the conceptualizer (speaker or listener) takes a perspective in the scene and mentally simulates 'movement' or 'visual scanning' along the figure". The basis for making this claim comes from a more general theory of mental or cognitive simulation; a theory proposing that "mental processes are supported by the same processes that are used for physical interactions, that is, for perception and action" (Pecher and Zwaan 2005: p. 1). In other words, there is a correspondence between acting and thinking. This proposal has gained increasing support by similar neurophysiological activation for mental processes and physical interactions. For instance action verbs (e.g. 'pick') have been shown to activate the same parts of the brain as when their corresponding action is performed (Pulvermüller 2005). When applied to NAM-expressions, a simulationist explanation proposes that the simulation of some kind of motion is

intrinsically involved in understanding or producing them. The motivation for their establishment in historical time and the synchronic psychological understanding of such expressions are thus both explained in terms of mental simulation. This view is summarized in the quotation below:

> [I]n understanding an FM [fictive motion]-sentence, people re-activate and simulate aspects of the protagonist's motion, including speed, distance, and the terrain across which the movement occurred. In doing so, they construct a dynamic representation that mirrors the actual motion of the protagonist. (Richardson and Matlock 2007: p. 238)

As can be seen, both language as a system and the speaker's psychological understanding are characterized as motivated from the mental capacity to simulate motion, either as movement (cf. the interpretation of Talmy above) or as visual scanning (cf. the interpretation of Langacker above). Blomberg and Zlatev (2013) criticize this view on two grounds, which I here reiterate briefly only to reach a positive re-interpretation of the simulationist argument. To anticipate, we suggested that "simulation" should be understood as the *imagination* of motion. With the help of this interpretation, more "creative" or uncommon uses of non-actual motion can be explained and thereby complement the more perceptual interpretations of Talmy and Langacker.

The first problem with mental simulation lies in conflating what can be called the personal level with the sub-personal level of mind (Gallagher 2007). Simulation departs from the everyday experience of imagining, of intending an as-if scenario. From this familiar type of experience, appeals to mental simulation swiftly move to an unconscious mechanism which "explains" not only conscious efforts of imagination but also most kinds of mental abilities, including non-actual motion. There is a convenient ambiguity between these different senses of "simulation": if taken as fully-fledged personal, conscious mental imagery (as in Talmy's notion of "ception"), an appeal to mental simulation risks to gloss over the difference between perception and imagination. Consider the examples below.

(36) The man goes through the forest.
(37) The road goes through the forest.

The former can adequately describe both a perceived event in which a man goes through a forest and an imagined event. Irrespective of describing an imagined or a perceived situation, the intentional object remains the same: *the man*. Where these two events differ is in *how* the intentional object is intended. In perception, intentional objects are presented, while in imagination they are *re*-presented. When imagining, the intentional object is not presented here and now: but brought forth

with an as-if structure. Imagination thus differs from perception by not "positing" existence (Husserl 2005 [1980]). It is for this reason that phenomenological analyses conclude that an imagined entity is not posited as something existing.

With this in mind, we can say that perceptual presentations are the "intuitive mode of experience par excellence" (Gallagher and Zahavi 2008: p. 91). Blomberg and Zlatev (2013) argue that imagination, or *mental imagery*, is derivative from this "intuitive mode", not in the sense that a picture of a perceived event is derivative, or a sentence such as (36) and (37), both of which constitute mediated representations, or signs (Sonesson, 2011), but in a way that could be called a "reenactment" of perception, as proposed by Thompson.

> In visual imaging or visualizing, we do not inspect a phenomenal mental picture; instead we mentally re-present an object by subjectively simulating or emulating a perceptual experience of that object. (Thompson 2007: p. 297)
>
> [It is] the activity of mentally representing an object or scene by way of mentally enacting or entertaining a possible perceptual experience of that object or scene. (Ibid: p. 279)

The proposal of mental simulation must treat the semantics of (36) and (37) as involving the simulation of motion (cf. Bergen, Lindsay, Matlock and Narayanan 2007). In this way, the qualitative semantic difference between sentences of actual motion and non-actual motion is obscured. A simulation theory can respond that the difference is based in the type of protagonist (man vs. road). As Blomberg and Zlatev (2013) point out, this response does not resolve the qualitative difference between sentences in (38)-(40), thus "[t]he simulationist explanation obscures […] the difference between the experiences (and the semantics of the linguistic description) of actual and non-actual motion" (Blomberg and Zlatev 2013: p 6).

(38) I am looking over the bridge.
(39) I am looking at the car moving over the bridge.
(40) I am scanning the length of the bridge.

(Blomberg and Zlatev 2013: p. 6)

The second main problem of mental simulation is the conflation of distinct experiential motivations. In the quote above, Matlock (2004a) considers NAM-expressions as eliciting simulations of "'movement' or 'visual scanning' along the figure". Since (37) does not describe actual motion, Thompson's analysis of mental imagery as re-enacted visualization cannot be applied to it, unless we assume an imaginative speaker who pictures the road "as if" moving, in the manner of a river or a conveyor belt. Still, it would be wrong to conclude that non-actual motion requires

correspondence to such imagined situations. The reinterpretation of Talmy's cognitive bias towards dynamism found the enactive, kinaesthetic nature of perception, rather than fictivity, to motivate NAM-construction. From this perspective, all that would be required to produce (if the conventions of the language allow it) and comprehend the sentence as involving non-actual motion is sensitivity to the fact that a road is a particular type of affordance that invites, and is commonly used for, actual motion. A second possibility is to find the motivation in the temporal and directional act of scanning the extension of the road as an aspect of the noetic, subjective pole of the correlational structure of intentionality. This would seem to generalize to all forms of intentionality, including both perception and visualization. When Langacker's most convincing linguistic analyses of "subjectification" involving (visual) perception are taken together with the fact that perception is the most "original" form of intentionality, it is feasible to assume that the non-actual motion experience implicit in Langacker's analysis is basically perceptual.

Is this to say that imagination, or more accurately reenacted visualization of motion, cannot play a role for NAM-expressions? Are there no such experiences of non-actual motion? It is also possible that (37) can be seen as a linguistic "compression" of (41). If this is indeed the case – and there may be considerable individual variation in the visualizing activities of speakers and hearers – then the sentence may indeed involve "embodied simulation", in the sense of conscious visualization, either with X being instantiated as the subject himself (visualization from the first-person perspective) or as some other actual, or virtual "mover" (visualization from a third-person perspective).

(41) The road is located in such a way that it allows X to move through the forest.

In a study of non-actual motion (Matlock 2004a), participants were asked to judge the relevance of non-actual motion sentences in relation to a preceding narrative involving motion. The reaction times to the same NAM-sentence were dependent on whether it was preceded by a narrative describing short or long travel. Since participants were asked to explicitly imagine, this can be taken as support for the thesis that comprehending a NAM-sentence to some extent, in some contexts, by some subjects, involves processes of imagined motion. Phrased in this way, the "simulation" explanation has validity. The problems appear, just as those of Talmy and Langacker, when the explanation becomes overgeneralized (cf. Zlatev and Blomberg 2013). Then, it both transgresses its own boundaries (mixing imagination with perception) and loses sight of the area where it has plausibility.

Blomberg and Zlatev (2013) consider another type of NAM-sentences that might call for a visualization-based explanation. These are those like in (42), where the verb of motion is not one of generic, "bleached" motion such as English *go* or the

Japanese *iku* but rather expresses a particular manner characteristic for certain living creatures.

(42) The highway *crawls* through the city.
(Matlock 2004b: p 232)

(43) Insanity runs in my family… It practically *gallops*!
(Said by C. Grant in the film *Arsenic and Old Lace*, cited in Brandt 2009.)

(44) There is like this snaking road up over the hills.
(Brandt 2009: p. 582)

(45) The dark velvet ditch *creeps* by my side.
(T. Tranströmer, *April and Silence*)

In all these cases, neither the focus of attention moves nor is one visualizing the self or some other entity moving along the trajectory. Rather, through a personification, or perhaps "animalification" metaphor, the movement of the figure itself is described with the characteristic "as-if" structure of imagination. Due to their high degree of imaginability and reliance on "creativity", these non-actual motion sentences are clearly metaphorical (non-literal) and perhaps the only kind deserving to be called "fictive". In sum, the visualization of motion can be seen as an additional "layer" on top of the two kinds of experiences assumed by the analyses of Langacker and Talmy. It is not an alternative to them but rather an elaboration, required for making sense of some sentences of non-actual motion.

4. Discussion

This chapter discussed non-actual motion, following Blomberg and Zlatev's (2013) re-interpretation of three common motivations for NAM-sentences found in the literature. These motivations can be phenomenologically interpreted and thereby more generally contribute to the ongoing cross-fertilization between cognitive science and phenomenology (e.g. Gallagher and Zahavi 2008). A key component in the analysis is the strict separation between non-actual motion *experiences* and *sentences*, a distinction often forgotten in previous (cognitive linguistic) analyses, where linguistic meaning maps quite unproblematically to pre-linguistic conceptualization. This is unlikely to be the case for at least three reasons.

First, NAM-sentences are related to three distinct experiences of non-actual motion where each seems to be particularly adept at motivating a particular type of NAM-sentences. For *enactive perception* this is sentences with objects affording motion, and with general motion-expressing verbs such as (46); for *scanning*: sentences with extended objects without affordance for human translocation as in

(47); and for *imagination*: metaphorical sentences using verbs for motion "creatively" such as (48).

(46) The highway goes through the forest.
(47) The wire goes through the forest.
(48) The path snakes through the forest.

To reiterate the conclusion from the previous section, non-actual motion is not a unitary phenomenon either in language or in experience. It is possible to object that the sentences in (46)-(48) are so similar that we are dealing with the same semantic phenomenon. On the basis of parsimony, a unitary explanation such as "mental simulation" would then be preferred. English, however, seems to be an exception in allowing (apparently) similar verbalizations of the situations in (46)-(48). For instance Yucatec Maya only allows sentences that roughly correspond to (46) (Bohnemeyer 2010). As discussed in Section 2, Matsumoto (1996) makes a similar observation for Japanese. English might therefore be considered exceptional in the number of verbs conflating Manner with Motion in non-actual motion sentences. Despite this, their use is constrained even in English. It is for instance not possible to use near synonyms to the verb *run* in a non-actual motion sentence.

(49) The highway runs/?dashes/?scoots/?sprints across the desert.
(50) Ronaldo runs/dashes/scoots/sprints across the field.

(Blomberg and Zlatev 2013: p. 18)

This brings us to the second reason to differentiate between experience and language. Experience arguably is a necessary condition for the use of non-actual motion sentences without which they would not make sense. This is, however, not sufficient, since "it is experience that proposes, but convention that disposes" (Blomberg and Zlatev 2013: p. 24). With this blunt statement, we wished to indicate that the possible motivating factors are specified and selected (with room for variation) by language-specific conventions. To illustrate this, we drew an analogy to the semantic domain of time, often analyzed as based on spatial construal. The days of the week can be represented by a preposition expressing Region: SURFACE in English, or Region:INTERIOR in Russian. These conventions cannot be reversed, cf. (51) and (52).

(51) I will see you on/*in Monday.
(52) Uvidimsya *na/v ponedel'nik.
PERF.see.PL.REFL on/in Monday

(Blomberg and Zlatev 2013: p. 18)

Finally, while much in semantics may be motivated by pre-linguistic experience, it would be erroneous not to consider also inherently linguistic motivations such as economy (Croft 2003). Given the conventions of English, it is much more economical to describe the configuration of a spatial entity as a motion-affording object, (53), rather than statically, (54).

(53) The road goes into the forest.
(54) The road has a certain configuration with respect to the forest: the initial part (closest to us) is outside, the further part (away from us) is inside…
(Blomberg and Zlatev 2013: p. 18)

Considering these three reasons: (i) multiple motivations, (ii) the "veto right" of convention (iii) functional motivations such as economy, one should most emphatically insist on keeping pre-linguistic experience distinct from linguistic meaning, including non-actual motion experience and non-actual motion sentences.

In sum, studies of non-actual motion require the independent treatment of experience and language. This chapter has addressed the former with the conclusion that several different experiences stand as motivating factors. Their functions in language must then be correlated to features of language-specific conventions and motivations of language use. It is with this in mind that in the following two chapters I will address non-actual motion in a cross-linguistic perspective.

Chapter 7
Non-actual motion in Swedish, French and Thai

The discussion in the previous chapter followed Blomberg and Zlatev's (2013) differentiation of three possible experiential motivations for expressions of non-actual motion.

- *Visual scanning*: The analysis of subjectification and visual scanning (Langacker 2006) exemplified the dynamic and correlational nature of intentionality.
- *Enactive Perception*: The notion of cognitive bias towards dynamism (Talmy 2000a) was interpreted in terms of the indispensable connection between visual perception and the potential for self-motion.
- *Imagination of motion*: Explanations that ground NAM in the mental simulation of motion were reinterpreted as the (conscious) imagination or visualization of motion, specifically as motivations for metaphorical NAM-sentences.

These three motivations were traced by separating conventional expressions from possibly motivating experiences in the influential analyses of Talmy (2000a), Langacker (1999, 2006) and Matlock (2004b). On the basis of the reinterpretation, this and the following chapter describe a cross-linguistic study of NAM-expressions in Swedish, French and Thai. Similarly to the disposition of Chapters 4 and 5, I present in this chapter the elicitation method together with a qualitative semantic analysis of NAM-sentences in the three languages, with quantitative analyses reserved for Chapter 8.

The design of the elicitation material was based on the three motivations, as listed above. In the following section, I describe how the motivations were operationalized to serve as the basis for producing pictorial stimuli for eliciting NAM-descriptions. The method of the study is described in Section 2 followed by some remarks on the analysis of the elicited material. While similar to that of actual motion, some relevant differences are discussed. The remainder of the chapter is devoted to the semantics of non-actual motion sentences in Swedish, French and Thai.

1. Operationalizing the motivations

To elicit motion descriptions, it is possible to use still pictures that represent different kinds of motion situations, as shown by the elicitations based on *Frog, where are you?* (Mayer 1969) conducted by Dan Slobin and colleagues (see Strömqvist and Verhoeven 2004). Since no actual motion is present in situations open for NAM-descriptions, a similar approach for elicitation requires some adaptation (cf. Rojo and Valenzuela 2004).

For the present study, it was essential to design an elicitation tool based on the motivations discussed in Chapter 6. This was done following a two-by-two design. The first parameter is concerned with a difference between lived motion and observed motion, which can be seen as the difference between a first-person and third-person perspective on motion, respectively (see Chapters 1, 2 and 6 for a discussion of these two different perspectives on motion). This difference was used in Chapter 6 to differentiate between the notions of "cognitive bias towards dynamism" and "visual scanning". While the former is based in the propensity for self-motion, the latter involves the observation of attending to a moving entity in experience. This difference in experiential engagement was operationalized by visually representing the same spatial situations with perspectival alterations. All stimuli were designed pair-wise with *Perspective* as the first parameter: either the figure is represented from a first-person perspective (henceforth, 1pp) or a third-person perspective (henceforth, 3pp). It is of course impossible for a picture to truly represent the visual perspective of someone, but 1pp-stimuli were designed to provide a sense of "being-there" and thereby possibly enhancing the degree of involvement (or rather, minimizing the indispensable distance in every visual representation). The second type, 3pp pictures, provided a distanced view from a kind of "anonymous" perspective.

The second parameter, *Afford motion*, concerns a distinction between objects that afford motion and those that do not. As discussed in Chapter 6, the affordance for human translocation is one possible motivation for NAM (Matsumoto 1996; Rojo and Valenzuela 2004; Matlock 2004b). By conjecture, it is possible that the acceptance for NAM-expressions would be higher for such situations across languages. This leads to differentiating between figures that do afford translocation (for human beings) and those that do not: Afford/Non-afford. Taking these parameters of perspective and affordance for motion together gives us the following two-by-two design.

i. A first-person perspective encouraging re-enactment of self-motion vs. a third-person perspective providing an opportunity to scan the figure.
ii. Entities that support human motion vs. those that do not (e.g. a road vs. a pipe).

The two parameters were paired, leading to four different types of stimuli. This is shown in Figure 7-1. [53]

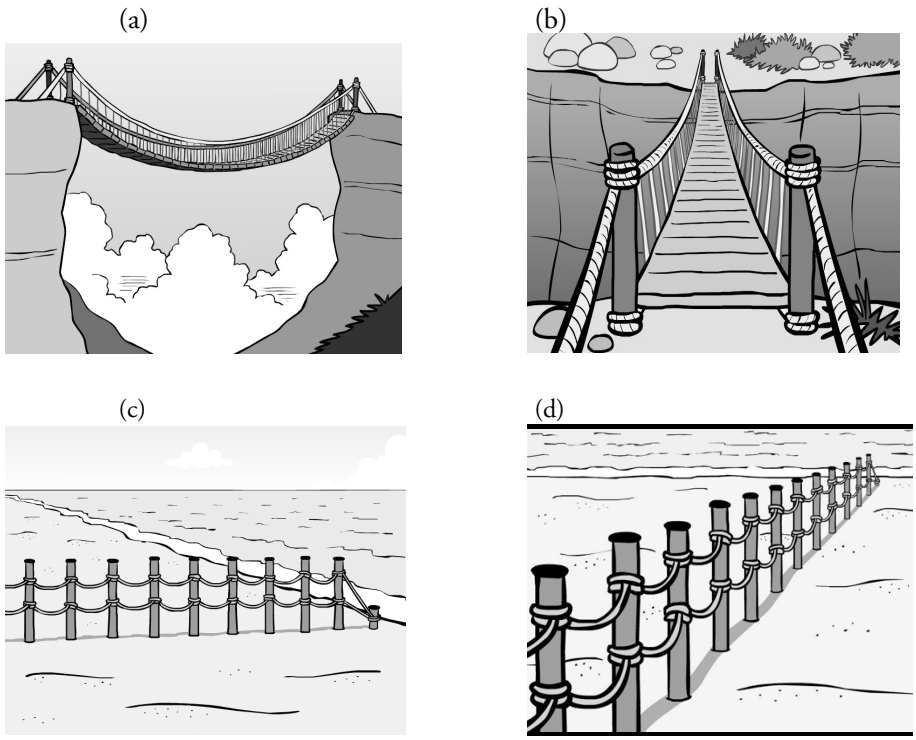


Figure 7-1. Stimuli according to the two parameters of Affordance and Perspective: Afford /3pp (a) Afford/1pp (b) Non-afford/3pp (c) and Non-afford/1pp (d).

The pictorial material was produced in collaboration with an artist to depict linear, extended objects placed in an ecologically probable context. This is described in more detail in the following section.

[53] In the conditions -Afford motion+1pp, the figure could not always be displayed at a 90-degree angle from the standpoint of the observer. This would have suggested that the observer is standing on e.g. a fence, and would have been so unnatural as to interfere with the participants' description.

2. Methods, material and procedure

The elicitation procedure, coding and analysis were similar to those in the study of actual motion described in Chapter 4. This section provides details specific for the present study.

2.1 Material

38 pictures (24 target pictures, 12 controls and 2 warm-up pictures) were designed and produced in collaboration with an artist. Both target and control pictures represented static situations without agents. The target pictures fitted the criterion of depicting linear, spatially extended objects, including roads, pipes and fences related to one landmark. Limiting the material to this design was motivated by two reasons: (i) in the literature (e.g. Matsumoto 1996), linear objects such as roads and pipes are considered paradigmatic for descriptions using NAM-sentences and (ii) previous studies have primarily focused on such situations (e.g. Matlock 2004a). This is not to say that figures of other shapes would not elicit NAM-descriptions, but given the scarcity of elicitation-based cross-linguistic comparisons of non-actual motion (Rojo and Valenzuela, 2004 is the only previous comparative elicitation-based study), the present study conformed to previous literature in this respect. Control pictures were designed as representations of static situations without, or with much less, linear extension than the target figures, such as park benches and trees.

The target pictures were further designed to capture the operationalized motivations described above. Pictures were thus designed pair-wise, i.e. to depict the same figure from a first-person and third-person perspective. The figure of each picture either afforded human motion or not. Combined, this made 12 pairs of pictures, 24 in total. The target pictures are described in Table 7-1 and shown in Appendix II.

The position of the landmark (e.g. a house) differed systematically with respect to the figure. As shown in Table 7-1, the landmark was placed either to the left/right for the 3pp-pictures or at the beginning/end of the figure for 1pp-pictures. This allowed to test whether the relative relation between figure and landmark impacted on the description. The pictures were further designed to relate not only to a landmark, but also to a believable spatial background. This design was chosen to portray layouts that can be encountered in the life-world, thereby allowing speakers to conceive of the situations as they saw fit. That is, there was the possibility that speakers omit the intended figure from descriptions. The apparent drawback of this design is of course that the purpose of the study can be missed. To prevent this outcome, the elicitation required a specific procedure.

Table 7-1. Description of the target pictures

Third-person perspective			**First-person perspective**		
Affords motion			**Affords motion**		
Figure	*LM*	*Location (of LM)*	*Object*	*LM*	*Location (of LM)*
Trail	House	Left end	Trail	House	Trail begins at house
Trail	House	Right end	Trail	House	Trail ends by house
Road	Tunnel	Left end	Road	Tunnel	Road begins outside tunnel
Road	Tunnel	Right end	Road	Tunnel	Road begins inside tunnel
Bridge	Canyon	Under bridge	Bridge	Canyon	Under bridge
Row of stones	River	Surrounds Fig	Row of stones	River	Surrounds Fig
Does not afford motion			**Does not afford motion**		
Fence	Tree	Left end	Fence	Tree	Fence begins from house
Fence	Beach	Right end	Fence	Beach	Fence ends at beach
Pipe	Tunnel	Left end	Pipe	Tunnel	Pipe begins outside tunnel
Pipe	Tunnel	Right end	Pipe	Tunnel	Pipe begins inside tunnel
Phone wire	Logs	Under wire	Phone wire	Logs	Under wire
Row of chairs	Beach	Surrounds Fig	Row of chairs	Beach	Surrounds Fig

2.2 Method

The aim of the study was to gather comparable data of NAM-sentences in the three languages. Achieving this end was however easier said than done. In a pilot, participants were asked to "describe the picture." In response to this all too general instruction, participants frequently either provided laconic single-word descriptions (e.g. 'a road') or named several depicted objects without specifying their spatial relation (e.g. 'I see a road, a tunnel, a mountain, a bush and some flowers' etc.).

In a similar elicitation-based study of NAM, Rojo and Valenzuela (2004) encountered the same problem. They attempted to solve it by showing participants two versions of the same picture. In one of the pictures, the entity amenable to NAM-description was removed. Participants were then asked to instruct an artist to include the removed element in the picture. This is ingenious in directing participants' attention to the desired object without explicitly telling them to do so. However, there is also the risk of inducing participants to attend only to the target entity. Furthermore, by instructing participants to tell an artist to *draw* the described entity,

an activity involving actual motion, participants might become biased towards dynamic descriptions.

Due to these potential risks in Roja and Valenzuela's (2004) approach, I opted for a different one. The problems were not necessarily due to participants not attending to the intended elements in the stimuli, but rather due to the difficulty of describing a picture without any further instructions on why or how this is relevant. My solution for eliciting spatial descriptions was to provide more detailed instructions to the participants. Instructions were changed from "describe the picture" to "describe what you see in one sentence". This constraint was expected to make participants fit the most relevant information into a complete sentence. Of course, the degree of grammatical awareness about the borders between sentences, clauses and phrases might vary between speakers, but the restriction helped in eliciting relevant descriptions and thus rendered the data set comparable.[54]

2.3 Participants

16 speakers of Swedish (8 female, mean age 28.4), 14 speakers of Thai (10 female, mean age 29.9) and 13 speakers of French (11 female, mean age 25.0) participated in the study.[55] Swedish and Thai participants were primarily recruited through Lund University and compensated with a movie voucher for their participation. French participants were recruited at the Montrouge section of the Ecole Normale Supérieure, Paris. In all cases, a researcher fluent in the participants' native language conducted the elicitation.[56]

All participants viewed the same 38 pictures shown in three different viewing orders. Each order was viewed by as close to a third of the participants as possible. Elicitation was conducted in a silent room. The researcher provided instructions in the native tongue of the participant and controlled the presentation of stimuli. The pictures were presented on a laptop with a 15.4'' widescreen monitor. The session began with instructions in the participant's native tongue, freely translated to English as follows.

---

[54] Methodological issues are further discussed in Chapter 8.

[55] The same Thai speakers participated in the study on actual motion described in Chapter 4. For these participants, the two elicitations were conducted on the same occasion with a break between the two. The NAM-study followed that of actual motion, elicited with the help of the *Trajectoire* tool.

[56] The author conducted the study for Swedish, Camille Colin and Laure Sarda for French and Soraya Osathanonda for Thai.

> *You will see a number of pictures. Look at each picture and describe what you see in one sentence. Please try to provide natural and colloquial descriptions, as if you were to briefly describe the picture to someone unacquainted with it. Some pictures are similar to each other. Please describe each picture without referring to previously seen pictures. The session begins with two warm-up pictures.*

Participants viewed and described two warm-up pictures, one of which represented actual motion: a car driving on a road, used to give a minor bias for NAM-descriptions. A pre-test debriefing followed where the researcher ensured that the task was clear to the participant. The session was recorded for sound and video according to the procedure described in Chapter 4. Upon completing the elicitation task, participants were asked the following three questions:

i. How did you experience your participation?
ii. Was something unclear to you?
iii. Can you figure out the purpose of the study?

Several participants expressed difficulty in describing the pictures in only one sentence. This was not so much that the instructions were hard to comply with; rather, some participants felt that a single-sentence description was insufficiently detailed to exhaustively describe the picture. This was an expected problem in line with the design intent described in Section 2.2. Several participants believed that the study investigated how the change between a 1pp-perspective and a 3pp-perspective impacted on description. In other words, they suggested that the perspective would affect what to take into account in describing the pictures. No participant mentioned the true purpose of the study.

3. Analysis

The material was processed and analyzed similarly as in the study on actual motion described in Chapter 4. The following aspects apply to the NAM study in particular. The first step was to define what counts as NAM-sentences. There is always the risk of being too conservative or too liberal in this regard.

To let the connection to actual motion remain explicit, a NAM-sentence was defined as a sentence that by substituting the Figure-expression with one that denotes an object that is movable, actual motion would be the only possible interpretation. This is shown in (1) and (2), with the (a) NAM-sentences corresponding to (b) AM-sentences only by substituting the Figure-expressing nominal.

(1) a. The road goes into a tunnel.
b. Stanislaw Lem goes into a tunnel.

(2) a. The fence goes along a meadow.
b. Isaac Asimov goes along a meadow.

Given this criterion, sentences with verbs expressing dynamism and change, e.g. *begin*, *continue* and *end* were considered as NAM-sentences. Even though they may not express Motion *per se*, they express it "covertly" or pragmatically (cf. Chapter 4). That is, the continuity and dynamicity of these verbs are intimately connected to motion (cf. Langacker 1990). To motivate their inclusion, we can use the same test as before, as shown in (3).

(3) a. The pipe continues out of the tunnel.
b. Ursula K. LeGuin continues out of the tunnel.

Many other verbs also contain a reference to dynamicity. Implied in verbs describing posture or configuration is that the described state has come about by a prior motion of the Figure. A verb such as *delimit* points to the fact that the Figure is in a certain state, as in (4). When used with an animate agent the sentence conveys the activity of attaining this state, as in (4). Still – this is not a description of (translocative) motion – unlike the examples in (2b) and (3b). For this reason, such sentences were excluded from the analysis.

(4) a. The fence delimits the beach.
b. Jules Verne delimits the beach (by putting up a fence).

Apart from defining when a clause expressed non-actual motion, the data was processed and coded according to the five-step procedure described in Chapter 4.

4. Research questions

So far, very few cross-linguistic analyses addressing non-actual motion have been conducted. Among these are the comparison between English and Japanese by Matsumoto (1996) and of English and Yucatec Maya by Bohnemeyer (2010). In a corpus-based study, Stosic and Sarda (2009) found that NAM-sentences were less common in Serbian than in French. Where French texts used NAM-expressions, Serbian translations were found to prefer Manner-verbs and placement-verbs. Stosic and Sarda (2009) attributed this finding to Serbian being a language rich in Manner-

verbs, as opposed to French. These studies thus suggest that the realization of NAM-expressions exhibits similar linguistic constraints as those for actual motion.

This pattern, however, was not confirmed in some other studies. In a comparison of NAM-expressions in English novels with their Spanish translations, Rojo and Valenzuela (2004) showed that literal translations of NAM-sentences were preferred and that translations preferred to retain both Manner- and Path-information. This, in turn, is quite different from the translation of actual motion from English to Spanish where Manner-information is typically reduced and Path-information retained (Slobin 1996). In the only previously conducted elicitation-based study on NAM, Rojo and Valenzuela (2004) found Spanish and English speakers to use NAM-sentences to a high degree, typically with Path-verbs. These studies suggest that the resources and typical patterns for expressing actual motion might not readily map onto NAM-sentences.

The following section explores the type of sentences produced in an elicitation task by speakers of Swedish, French and Thai. Of specific interest are the commonalities and differences from actual motion vis-à-vis patterns of distribution and conflation. Thus, what type of motion information is used for the purpose of describing spatial extensions and which information is demoted or left out? The semantic relation between actual and non-actual motion was briefly discussed in Chapter 6. On the basis of his comparison of Japanese and English, Matsumoto (1996) hypothesized that non-actual motion Manner-information is retained only to the extent that it is related to the Path whereas Path-information is always retained. These are the so-called *Manner- and Path-conditions*, which in Matsumoto's investigation are limited to Japanese and English verbs. Following Holistic Spatial Semantics (see Chapter 2), it is preferable to consider clauses and sentences in their entirety as the locus for semantic analysis. To claim the retention and demotion of semantic categories is thereby not only a matter of individual verbs, but requires resorting to more fine-grained semantic investigations.

As we saw in Chapters 4 and 5, Swedish, French and Thai differ in how they express actual motion. With this mind, we can formulate expectations on the realization of NAM-sentences in the three languages. Specifically, the following questions will be our primary concerns.

- Do speakers of the three languages produce NAM-sentences to an equal degree?
- To the extent that the three languages allow NAM-sentences, do the conditions and applications vary?
- Do NAM-sentences typically demote Manner-information and retain Path-information? If so, is this reflected similarly across Swedish, French and Thai?

5. The semantics of non-actual motion

5.1 Non-actual motion in Swedish

All picture types elicited NAM-descriptions in Swedish with the same pattern as that found for translocative motion: Path and Direction were expressed in adverbs and prepositions while the Motion-verbs were of a generic (default) kind. This is exemplified in (5) and (6) where *gå* ('go') and *leda* ('lead') are used with figures that either afford or do not afford human motion. We see the familiar pattern of the verb together with adverbs and prepositions expressing Region-change from outside to inside (5) and a bounded translocative motion (6). Both these situations follow the pattern established in Chapter 4.[57]

(5) En väg som **gå-r** **in** **i** en tunnel.
DET.INDF road COMP.REL **go-PRS** **in** **in** DET.INDF tunnel
'A road that goes into a tunnel.'
(Fm_Sw30_007_YellowPath_Tunnel_Left)

(6) Avgränsning på strand-en som **led-er** **ner** **till**
delimitation on beach-DET COMP.REL **lead-PRS** **down** **to**

hav-et.
sea-DET.DEF
'Delimitation on the beach that leads down to the sea.'
(Fm_Sw_033_013_Fence_Sea_Right)

In Chapter 4, *gå* ('go') was interpreted as a Manner-verb. However, *gå* is semantically general and does not express Motion only. Like the English *go*, Swedish *gå* can express change in time, possession and virtually extend to any domain (cf. Langacker 1990). It is therefore notable that *gå* in (5) cannot be changed for another Manner-verb expressing a walking gait (6). In such a case, it would be interpreted metaphorically and not as a description of spatial extension. This suggests that in the context of non-

[57] All examples from the study are given a code in the following format: Study_LanguageParticipant ID_Stimuli ID_Stimuli Description.

actual motion, *gå* should not be analyzed as expressing Manner.[58] Just as *gå*, *leda* ('lead') is semantically general: when used to convey actual motion, it means to make something move, to steer and to direct. It can for instance be used for steering an animal, such as a horse or goat. Outside of motion, it can be used to convey the consequence of a certain behavior, process or intention (8). It can also mean 'to be in charge' (9).

(7)? En väg som {**vandrar/promenerar/flanerar**} in i en tunnel.
'A road that {**wanders/strolls/saunters**} into a tunnel.'

(8) Snabba lösningar kan **leda** till katastrof.
'Quick solutions can have catastrophic effects.'

(9) General Custer **leder** en armé.
'General Custer leads an army.'

The Swedish participants also used the Manner-verb *löpa* ('run'), as in (10). As a Motion-verb, it conveys a sense close to *springa* ('run').

(10) Ett trä-staket som **löper i rät linje**.
DET.INDF wooden-fence COMP.REL **run.PRS in straight line**
'A wooden fence that runs in a straight line.'
(Fm_Sw_029_015_Fence_Tree_Left)

This seems to suggest that Swedish NAM-sentences can retain information about Manner-of-motion. However, Manner- and Cause-verbs can be used as long as this information is demoted. Apart from the pre-given intuition that information about pace, gait, etc. should be demoted in NAM-sentences (Matsumoto 1996), it is not really clear wherein the demotion of Manner-information lies. This is partly due to the scope of Matsumoto's analysis to verbs. If we extend, as in HSS, the scope to entire clauses then it is possible to formulate a more adequate Manner-condition. In (5), (6) and (10), the entities are described together with other form classes expressing translocation, as Path in (5), Direction in (10) or both in (6). In other words, the demotion lies in that the Path- and Direction-information given about a static object "overrides" the Manner-information provided by the verb. This is why it sounds

[58] This highlights a question from Chapter 4: does *gå* have two distinct senses: *gå*$_1$, Manner-verb and *gå*$_2$, (semantically general) Direction-verb? If this route is taken, then one must account for *when* one sense is expressed rather than the other. Needless to say, the verb has both these aspects. When applied to an immobile figure, the sense of Manner is suppressed, but when applied to a mobile and animate figure this is much less so.

strange to qualify Manner in a NAM-expression: if the verb in (10) is modified with the adverb *snabbt* ('quickly'), then the sentence is semantically deviant, and acceptable only as a personification/animalification metaphor, as in (11).

(11)? Ett trä-staket som **löp-er** **snabbt** i rät linje.
DET.INDF wooden-fence COMP.REL **run-PRS** quickly in straight line
'A wooden fence that runs quickly in a straight line.'

If we understand NAM-sentences as demoting Manner-information across the clause, then it is possible to pinpoint why some sentences might be in need of an imagination-based interpretation. As discussed in Chapter 6, neither enactive perception nor visual scanning can account for NAM-sentences rich on Manner-information. With the addition of more Manner-information, either with an adverb or with verbs expressing more elaborate forms of Manner, then understanding cannot resort to conventional semantics, but must explicitly rely on the *metaphor* of motion. We could even generalize to the point of saying that the possibility to participate in sentences where Manner-information is overridden is essential for a Motion-verb in order to be regarded as "bleached".[59] The type of sentences and constructions that participate in expressing NAM can be expected to typically include verbs and constructions already applicable to a wide array of domains.

The deictic verb *komma* ('come') occurs, but with a notable constraint on possible particles. As shown in (12), the description given to the pictures in Figure 7-2, the verb occurs only together with the Path/Region-conflating adverb *ut* ('out') and preposition *ur* ('of'), but never to express the opposite direction, i.e. Region-change from outside to inside, as in the unattested (14). Since it only occurs in Region-changing situations, *komma* is also restricted to stimuli where the figure is located both inside and outside of the landmark.

[59] This point of bleaching presupposes, of course, that there is a meaning to be bleached in the first instance. This is an assumption about the nature of meaning which in turn regulates analysis of NAM towards the point of being derivative from the experience/simulation/concept(ualization) of motion. The consequence which is not always spelled out is that *every* literal and non-literal use of motion-expressing verbs depends for its meaning on a connection back to the non-linguistic concept of motion.

(a) (b)

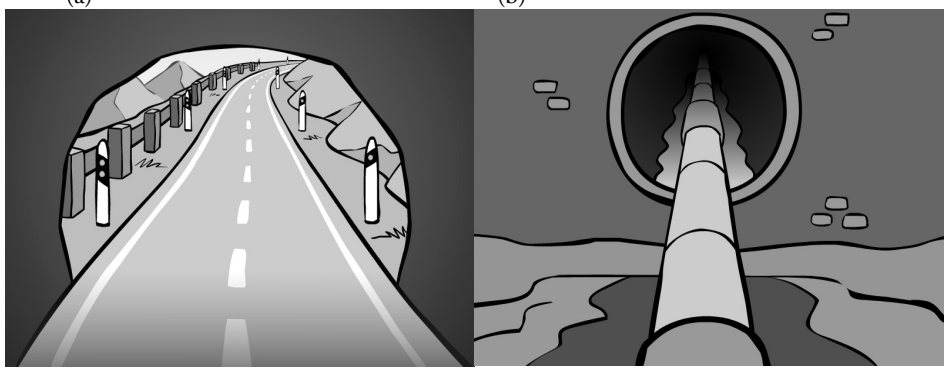


Figure 7-2. The stimuli types described where *komma* ('come') was used

(12) En väg som **komm-er** **ut** **ur** en tunnel.
DET.INDF road COMP.REL **come-PRS** **out** **of** DET.INDF tunnel
'A road that comes out of a tunnel.'

(Fm_Swe_25_007_YellowPath_Tunnel_Left)

(13) Ett rör som **komm-er** **ut** **ur** en tunnel.
DET.INDF pipe COMP.REL come-PRS out of DET.INDF tunnel
'A pipe that comes out of a tunnel.'

(Fm_Swe_35_019_Pipe_Tunnel_Infront)

(14) En väg som **kommer** **in** **i** en tunnel.
DET.INDF road COMP.REL come-PRS in in DET.INDF tunnel
'A road that comes into a tunnel.'

(Unattested)

(15) En väg som **gå-r** **in** **i** en tunnel.
DET.INDF road COMP.REL go-PRS out of DET.INDF tunnel
'A road that goes into a tunnel.'

(Fm_Sw 23_005_Road_Tunnel_Right)

Why *komma* ('come') occurs together with *ut ur* ('out of') and never with *in i* ('in to') in the Swedish data can possibly be explained as follows: in order to use the latter, the speaker must imagine himself both (i) to be inside a closed space and (ii) for the figure to be non-actually moving towards him. Figure 7-2a shows stimuli representing the observer as if positioned inside the tunnel with the road primarily outside of it. This could be interpreted as providing more incentive to construe the situation in terms of an approaching rather than departing road. Nevertheless, the Swedish

speakers nevertheless preferred sentences such as (15). This is strongly indicative that Swedish speakers found a description implying (i)+(ii) rather unnatural, or at least much less preferred than the alternative.

Continuing the trend of using verbs with applicability far beyond Motion, it was also possible to express NAM with the accomplishment verbs *börja* ('begin'), *fortsätta* ('continue') and *sluta* ('end'), shown in (16)-(18). These verbs are not typical Motion-verbs; they specify that a process started, lasted or was terminated. When applied to actual motion, they tend to be used together with a Manner-verb and thus describe the initiation, continuity or termination of the movement (cf. Chapter 4). When used for spatial extensionality, these accomplishment verbs are not complemented by a Manner-verb in the same clause and hence do not express actual motion.

(16) En häng-bro som **börja-r** i botten av
DET.INDF rope-bridge COMP.REL **begin-PRS** in bottom of

bild-en.
picture-DET.DEF
'A rope bridge that begins in the bottom of the picture.'
(Fm_Swe_23_010_Bridge_Infront)

(17) Pinn-ar-na **fortsätt-er** åt höger mot en sjö.
pole-PL-DET.DEF **continue-PRS** to right toward DET.INDF lake
'The poles continue right towards a lake.'
(Fm_Swe_23_013_Fence_Sea_Right)

(18) En väg-s ände **sluta-r** i en sommarstuga.
DET.INDF road-GEN end **end-PRS** in DET.INDF cottage
'The end of a road ends in a cottage.'
(Fm_Swe_26_001_Path_RedHouse_Right)

With the help of these verbs, an added sense of continuity and dynamicity can be expressed. This was done by using more than one clause where each clause specified a particular element of the transition, as shown in (19) and (20). In the former example, the verbs express Path:BEGIN and Path:MID without Motion. In the latter example, the non-actual motion initiated through *gå* ('go') and the Direction-adverb *framåt* ('forward') were expressed in the subsequent clause as continuing before coming to an end. In this way, the transition of a beginning or a termination is modified through a previous or subsequent spatial continuity.

(19) En stig av stenar som **börjar** i botten av
DET.INDF trail of rock-PL COMP.REL **begin-PRS** in bottom of
Path:BEGIN

bild-en och **fortsätter** **framåt** i en sjö.
picture-DET CONJ **continue-PRS** **forward** in DET.INDF lake
Path:MID **Dir:OC**

'A trail of rocks that begins in the bottom of the picture and continues forward in a lake.'

(Fm_Swe_23_012_Stones_Infront)

(20) Någon form av pipeline **gå-r** **framåt** igenom en
some kind of pipeline **go-PRS** **forward** through DET.INDF
Dir:OC

tunnel som **sluta-r** och sen **fortsätt-er** någon
tunnel COMP.REL **end-PRS** CONJ then **continue-PRS** PRON.INDF
Path:END **Path:MID**

vit mark.
white ground
'Some kind of pipeline that goes forward through a tunnel ends and then some white ground continues.'

(Fm_Swe_23_020_Pipe_Inside_Tunnel)

Even if these verbs do not involve Motion *per se*, they still fall within the definition of NAM-sentences offered in Section 3. Moreover, as argued in Chapter 4, they express Motion covertly rather than overtly. However, the Swedish participants also provided descriptions that by definition fall outside of the definition, but are interesting nonetheless. These involve sentences without a verb of motion – in fact with no verb at all – but with the Path/Direction adverbs *ut* and *ner* ('out' and 'down', respectively), as shown in examples (21)-(24). To remind from Chapter 4, *ut* ('out') was analyzed as a Path/Region-conflating adverb and *ner* ('down') as expressing Geocentric Direction. In all these examples the adverb was combined with a preposition expressing Path or Direction.

(21) En landsväg **ut** **genom** en tunnel.
DET.INDF road **out** **through** DET.INDF tunnel
'A road out through a tunnel.'

(Fm_Swe_33_008_Road_Inside_Tunnel)

(22) Ett rör **ut** **genom** en tunnel.
DET.INDF pipe **out** **through** DET.INDF tunnel
'A pipe out through a tunnel.'

(Fm_Swe_20_020_Tunnel_Pipe_Infront)

(23) Ett staket på en strand **ner** **mot** vattnet.
DET.INDF fence on DET.INDF beach **down** **towards** water.DET.DEF
'A fence on a beach down towards the water.'

(Fm_Swe_32_014_Fence_Sea_Infront)

(24) Utsikt-en från en veranda **ut** **mot** natur-en.
view-DET.DEF from DET.INDF porch **out** **towards** nature-DET.DEF
'The view from a porch out towards the nature.'

(Fm_Swe_33_004_Path_From_Porch)

It is not possible to express actual motion or to even form a grammatically correct sentence in this way, as shown in (25). What can be expressed, however, is the view from a window, as in (26), where the window is presented as facing towards the sea. Arguably, however, what is directed toward the sea is the vantage point of a (possible or actual) perceiver. Standing by the window, one is provided with a framed perception of the sea. In a building, windows are for *looking out*; in a sense they are there to afford and allow the perception of the outside. Thus, to look in through a window is to be a Peeping Tom, unless, of course, it is a display window.[60] Perhaps it is this semantic connection between perception and motion that leads Talmy (2000a) to consider both as examples of fictive motion (see the discussion in Chapter 6, Section 3).

(25) * En man **ut** **mot** strand-en.
DET.INDF man **out** **towards** beach-DET.DEF
'A man out towards the beach.'

(26) Ett fönster **ut** **mot** havet.
DET.INDF window out **towards** sea-DET.DEF
'A window facing towards the sea.'

In (26), the situation is different from those described in (21)-(24). As argued in Chapter 6, perception involves dynamism and motility, which motivates the application of the same expressions to both objects in space and to the vantage point taken on space. However, a window, in contrast to a highway or a pipe, does not

[60] Thanks to Göran Sonesson for pointing this out.

occupy the space between the house and the sea and should, *pace* Talmy, be conceptually differentiated. What remains to be investigated are the cross-linguistic tendencies to express perceptual vantage points and spatial extensions in the same way. If indeed this is a stable pattern, this could be read as support for an extended reading of Langacker's notion of visual scanning: perception, even in the absence of a scan-able object, searches for a correlate that can stand in for the act, such as a window.

My proposal is that rather than actual non-actual motion, the sentences in (21)-(24) express *Non-actual Path* or *Non-actual Direction*. They convey the configuration of a spatial object according to the structure of Path or Direction but without expressing Motion explicitly. This is not to say that sentences such as these should be completely distinguished from an account of NAM. Since these adverbs participate in expressing translocative motion, there is overlap in the semantics of NAM and non-actual Path/Direction: the pipe is not only located in a tunnel, but its location "changes" with respect to the tunnel's inside and outside.

In sum, all picture types were found to elicit NAM-sentences in Swedish. Following the expectations from Chapter 4, the Swedish participants used generic or bleached Manner-verbs as *gå* ('go') and *löpa* ('run') together with Path and Direction expressed in adverbs and prepositions. By using the resources for translocative motion, the semantic focus of the Swedish descriptions was on how the Figure as a spatially extended object was related to Landmarks and spatial background. This sense is conveyed in two additional ways:

i. Change-of-state verbs not restricted to motion, e.g. *börja* ('begin') and *sluta* ('end') + Path-and Direction prepositions and/or adverbs.
ii. Verb-less clauses with only prepositions and adverbs expressing Path and/or Direction.

Per the definition of NAM-sentences as "a sentence which in principle could describe actual motion, and by substituting the Figure-expression with one that denotes an object that is movable", the sentences falling under (i) are instances of NAM-expressions. In contrast, (ii) cannot be used to convey the sense of actual motion and is therefore best considered as a semantic sibling to Non-actual motion, which I call *Non-actual Path/Direction*. The resources for expressing NAM in Swedish thus seem to largely retain Path and Direction, with less emphasis on Manner.

A recurrent theme in this and the previous chapter is the experiential motivations to NAM-sentences in the dynamic character of experience. However, the data contained very few markers of perspectives or other indications that would reveal the hypothesized dynamic apprehension. Still, an indication of experience shining through the filters of linguistic conventions concerned the constraint on the use *komma* ('come'). This verb never occurred with *in i* ('in to'), but only with *ut ur* ('out of'). To use the former, i.e. *komma in i* ('come into'), the speaker must imagine

himself both (a) to be inside a closed space and (b) for the figure to be non-actually moving towards him: a rather unpleasant situation.

5.2 Non-actual motion in French

The French speakers behaved similarly to the Swedish ones, tending to use bleached and generic Motion-verbs for expressing NAM. Together with a preposition expressing Path, the verbs *mener* ('lead') and *aller* ('go') realized NAM-sentences across all stimuli types, as shown in (27-30).

(27) Un petit chemin qui **mène** **à** la porte.
DET.INDF.M small path COMP.REL **lead.3SG.PRS** **to** DET.DEF.F door
'A small path that leads to the door.'

(Fm_Fr_5_001_Path_Redhouse_Right)

(28) Une barricade qui **va** **jusqu'à** l'
DET.INDF.F barricade COMP.REL **go.3SG.PRS** **until** DET.DEF.M

horizon.
horizon
'A fence that goes to the horizon.'

(Fm_Fr_5_016_Fence_Tree_InFront)

(29) On **va** **dans** la montagne.
PRON.INDF **go.3SG.PRS** **into** DET.DEF.F mountain
'We are going into the mountain.'

(Fm_Fr_5_005_Road_Tunnel_Right)

(30) Une barrière qui **mène** **jusqu'à** la mer.
DET.INDF.F fence COMP.REL **lead.3SG.PRS** **until** DET.DEF.F sea
'A fence that leads to the sea.'

(Fm_Fr_1_014_Fence_Sea_Infront)

We can apply the same analysis to these NAM-sentences as to Swedish ones: the verb together with a preposition can be seen as expressing the continuity of the spatial extension. In (29) and (30), we encounter the preposition *jusqu'à* ('until'). This preposition is, in contrast to the French prepositions discussed in Chapter 4 more of an aspectual marker: similar to 'until', it marks the continuation and endpoint of a process.

As described in Chapter 4, French tends to conflate Motion with Path in the verb. This pattern is carried over to NAM-sentences where Motion and Path are

represented with dynamic values for the latter: Path:BEGIN in (31), Path:MID in (32) and (33) and Path:END in (34).

(31) La terrasse d' une maison avec un
DET.DEF.F terrace of DET.INDF.F house with DET.INDF.M

chemin qui **part** en perspective.
path COMP.REL **leave.3SG.PRS** in perspective
'The terrace of a house with a path that leaves in perspective.'

(Fm_Fr_4_004_Path_From_Porch)

(32) Une route qui **passe** sous un tunnel.
DET.INDF.F road COMP.REL **pass.3SG.PRS** under DET.INDF.M tunnel
'A road that passes under a tunnel.'

(Fm_Fr_6_005_Road_Tunnel_Right)

(33) Une route qui **traverse** une montagne.
DET.INDF.F road COMP.REL **cross.3SG.PRS** DET.INDF.F mountain
'A road that crosses a mountain.'

(Fm_Fr_10_005_Road_Tunnel_Right)

(34) Là on **arrive** **dans** un tunnel.
there PRON.INDF **arrive.3SG.PRS** in DET.INDF.M tunnel
'Here we are arriving in a tunnel.'

(Fm_Fr_1_006_YellowPath_Tunnel_Infront)

General verbs for expressing an enduring process were used, and then complemented by a preposition expressing Direction, as in (35) or Path, as in (36).

(35) Une haie qui **avance** **vers** la mer.
DET.INDF.F hedge COMP.REL advance.3SG.PRS **toward** DET.DEF.F sea
'A hedge that advances toward the sea.'

(Fm_Fr_6_013_Fence_SeaRight)

(36) Une route qui **se poursuit** **par** un
DET.INDF.F road COMP.REL continue.3SG.PRS through DET.INDF.M

tunnel.
tunnel
'A road that continues through a tunnel.'

(Fm_Fr_13_005_Road_Tunnel_Right)

When the Figure was both inside and outside the Landmark, the French speakers tended to use the Region-changing verbs *sortir* ('exit') and *entrer* ('enter'), described in detail in Chapter 4. These were used analogously to their use in actual motion descriptions, i.e. together with prepositions *de* ('from') and *dans* ('in'), respectively, see (37) and (38).

(37) Là c' est en **sortant** **de** un tunnel.
here 3SG be.3SG.PRS in **exit.PRS.PTCP** from DET.INDF.M tunnel
'Here we are exiting a tunnel.'
(Fm_Fr_8_008_road_inside_tunnel)

(38) Les canalization-s qui **rentre** **dans** un mur.
DET.DEF.PL pipe-PL COMP.REL **enter.3SG.PRS** **in** DET.INDF.M wall
'The pipes that enter in a wall.'
(Fm_Fr_8_019_Pipe_Tunnel_Left)

Apart from these expected patterns of Path-verbs and other Motion-verbs applicable to a wide array of domains, the French speakers exhibited some additional and perhaps not so expected patterns. One of these concerns sentences with only Direction, as in (39) and (40). Both these sentences express Direction according to the Object-centered FoR: through the combination of verb and preposition in (39) and only through the verb in (40).

(39) Une route qui se **dirige** **vers**
DET.INDF.F road COMP.REL PRON.REFL **head.for.3SG.PRS** **towards**

une forêt.
DET.INDF.F forest
'A road that heads toward a forest.'
(Fm_Fr_6_004_Path_From_Porch)

(40) Un chemin de pierre en plain milieu de l'eau
DET.INDF.M path of stones in.the.middle.of DET.DEF.F water

qui **longe** une rivière.
COMP.REL **run.along.3SG.PRS** DET.INDF.F river
'A path of stones in the middle of the water that runs along a river.'
(Fm_Fr_14_012_Stones_In_Water)

In (41), the verb *pénétrer* ('penetrate') conflates Path and Manner. It expresses a force that leads to Region-change. But it also expresses something about the entity's becoming; the pipe's penetrating the mountain is the result of a history of an *actual* force acted upon the mountain. The purpose of an object, its manufacturing or its

placing, are also relevant for motion. The Swedish sentence in (42) describes a trail of stones in water as being there for walking. In the French sentence in (43), the same situation is described as having an "idea of movement".

(41) Cette belle conduite qui semble **pénétrer**
DET.DEM.F pretty pipe COMP.REL seem.3SG.PRS **penetrate.INF**

sous ces roche-s.
under DET.DEM.PL rock-PL
'This pretty pipe that seems to penetrate under those rocks.'

(Fm_Fr_13_017_Pipe_Tunnel_Right)

(42) Sten-ar man **kan** **gå** **på** i en
rock-PL PRON.DET.INDF **can.AUX** **walk.INF on** on in DET.INDF

liten flod.
small river
'Stones that one can walk on in a small river.'

(Fm_Swe_26_012_Stones_In_Water)

(43) Un chemin de pierre-s qui est fait
DET.INDF.M path of stone-PL COMP.REL be.3SG.PRS made.PTCP

dans un fleuve avec une **idée de mouvement.**
in DET.INDF.M river with DET.INDF.F **idea of movement**
'A path of stones that is made in a river with a sense of movement.'

(Fm_Fr_7_012_Stones_In_Water)

A trail of stones is not, like roads and paths, a typified entity in the life-world (cf. Chapter 2), at least not for the speakers of the three languages under investigation. It is not habitually encountered in our everyday lives, to which the lack of a single word testifies. However, since the stones seem to be put in the water for traversing the river, as shown in Figure 7-3, it is possible to consider the descriptions in (42) and (43) as "digging up" the motivation out of the affordance for motion.

Arguably, the function of an object can make the differentiation between actual and non-actual motion somewhat blurred. For instance, a pipe can serve as a conduct for transporting liquids such as water and oil: the static entity contains something moving. In this way, it is not clear whether it is the function of actually transporting water or the configuration of a pipe in space that motivates the use of NAM-sentences. Considering the multi-faceted nature of NAM discussed in the previous chapter, it may be expected to be *both*. The question of NAM as multi-motivated or

not will resurface in Chapter 8, where we turn to the frequency of NAM-sentences for different picture types.

Figure 7-3. Stimuli representing a trail of stones in water

The time has come to summarize non-actual motion in the French data and with that some additional aspects of non-actual motion. The French speakers relied on the expected patterns of general Motion-verbs such as *aller* ('go') and *mener* ('lead') which, when combined with prepositions such as *de* ('from'), *à* ('to) or *vers* ('towards'), expressed NAM. These were complemented by expressions involving verbs such as *poursuivre* ('continue') and *arriver* ('arrive'). Inherited from describing actual motion was the use of Path-verbs. When the Figure was located both inside and outside a Landmark, this was conveyed by Region-changing verbs and prepositions.

5.3 Non-actual motion in Thai

Let us now turn our attention towards Thai. Given what we showed concerning the use of NAM-sentences produced by Swedish and French participants, general motion-verbs and Path-verbs could be expected to occur in the Thai data as well. It remains an open question how this is realized in a language with serial-verb constructions. How is NAM-sentences affected by such serial-verbs constructions with Manner, Path and Direction-verbs in a single clause? How are NAM-sentences affected by the obligatory marking of viewpoint-centered Direction?

The first thing to notice is that the Thai speakers did not use verbs corresponding to Swedish *leda* ('lead') or French *mener* ('lead'). As we saw in Chapters 4 and 5, the role of deixis in Thai differs from Swedish and French. For instance, the use of the deictic verb *pai* ('go') in NAM-sentences seems to differ from the corresponding verbs in Swedish and French, *gå* ('go') and *aller* ('go'), respectively. Is this to say that NAM-sentences are less common in Thai? On the contrary (as we

will see in the next chapter), but there were differences in the verbs used and how these combined in serial-verbs constructions. Moreover, some constraints could be seen depending on the type of entity described.

Beginning with Path, the Thai speakers used – just like for actual motion – verbs for Path:MID: *phaàn* ('pass') and khaâm ('cross'). Both these verbs describe a bridge between two cliffs, see (44) and (45). The first of these, *phaàn*, has a wider range in the data and is used for pictures where the Figure passes through the Landmark, such as a road or pipe passing through a tunnel, as in (46).

(44) Mi saphan yao **phaàn** maênaám.
COP bridge long **pass** river
'A long bridge passes a river.'

(Fm_Th_13_010_Bridge_Cliff_Proximal)

(45) Mi saphan **khaâm** heˇo.
COP bridge **cross** ravine
'A bridge crosses a ravine.'

(Fm_Th_14_009_Bridge_Cliff_Distal)

(46) Thànoˇn **phaàn** umong yù bon laì-khaˇo.
road **pass** cave exist top hillside
'A road passes a cave on the top of a hillside.'

(Fm_Th_14_008_Road_Inside_Tunnel)

We can compare this with the Swedish data, where the corresponding verbs *korsa* ('cross') and *passera* ('pass') did not occur, despite being the only Path-verbs in the Swedish data elicited in the actual motion study.

As shown in (47)-(49), the Path/Manner-conflating verbs *lôt* ('penetrate'), *tàt* (cut-through) and *chò* ('pierce') are attested in the data, the latter only in a serial-verb construction with the two additional Path-verbs *thálú* ('go-through') and *phaàn* ('pass'). These Path/Manner-conflating verbs are only used to describe roads and pipes entering and exiting tunnels. The first of these is similar to *pénétrer* ('penetrate') in French in that the verb could be used to express the actual motion responsible for bringing about the state-of-affairs. To make a tunnel, one drills through the mountain. Force is enacted on the mountain; a force retained by describing the relation between tunnel and mountain with verbs such as *lôt* and *pénétrer*.

(47) Pen thang **lôt** tai umong.
be way **penetrate** under cave
'A road penetrates under a mountain.'

(Fm_Th_1_006_Path_Outside_Tunnel)

(48) Pen thànoˇn thî **tàt** **phaàn** phukhaˇo.
be road COMP **cut-through** **pass** mountain
'A road that cuts-through and passes a mountain.'
(Fm_Th_5_005_Road_Tunnel_Right)

(49) Thang rotyon **chò** **thálú** **phaàn** phukhaˇo.
way car **pierce** **go-through** **pass** mountain
'A car road pierces through and passes a mountain.'
(Fm_Th_1_005_Road_Inside_Tunnel)

The relation between a Figure located both inside and outside a Landmark can also be described with the familiar Path/Region-conflating verbs *khâw* ('enter') and *oòk* ('exit'), as seen in (50) and (51).

(50) Thangdoen **khâw** **pai** nai umong.
path **enter** **go** inside cave
'A path enters goes inside a cave.'
(Fm_Th_10_006_Path_Inside_Tunnel)

(51) Thànoˇn **oòk** **ma** chaàk umong.
road **exit** **come** from cave
'A road comes out of a cave.'
(Fm_Th_10_008_Road_Inside_Tunnel)

Since both *khâw* ('enter') and *oòk* ('exit') focus on the transition between Region:INTERIOR and Region:EXTERIOR, a sense of dynamic continuity is added not only by the deictic *ma* ('come') and *pai* ('go'), but also by the verb *toò* ('continue'). Similar to *fortsätta* ('continue') in Swedish, *toò* does not express Motion *per se*, but in the context of NAM-sentences provides the continuity of the extended object beyond the transition from inside to outside. This is shown in (52) and (53).[61]

(52) Pen tho yao **toò** kan **oòk** **ma** **chaàk** umong.
be pipe long **continue** PRON.REFL **exit** **come** **from** cave
'A long pipe continues out from a cave.'
(Fm_Th_11_020_Pipe_Inside_Tunnel)

[61] The phrase *toò kan yao* in (55) is a form of lexicalized phrase (discussed in Chapter 4) with a meaning not reducible to its parts: 'connects to make long'.

(53) Mi tho thî **toò** kan yao **khâw** **pai** nai
COP pipe COMP **continue** PRON.REFL long **enter** **go** inside

umong.
cave
'A pipe that connects together and enters a cave.'
(Fm_Th_11_017_Pipe_Tunnel_Right)

This use can be expected of enter/exit-verbs in NAM-sentences. However, it was noted in Chapter 4 that these verbs are quite bleached in Thai and possibly undergoing a degree of grammaticalization. Their bleached character is quite clear in NAM-sentences such as (54)-(59) where they were used in situations without (discrete) Region-change between INTERIOR and EXTERIOR.

(54) Mi thangdoen **khâw** **ma** suù tua baân.
COP path **enter** **come** to CLF house
'A path that comes to a house.'
(Fm_Th_9_001_Path_House _Right)

(55) Pen thangdoen **khâw** **suù** saphan.
be path **enter** **to** bridge
'A path goes to a bridge.'
(Fm_Th_1_010_Bridge_Between_Cliffs)

(56) Mi thangdoen léklék **oòk** **chaàk** baân.
COP path small **exit** **from** house
'A small path goes from a house.'
(Fm_Th_14_004_Path_From_House)

(57) Mi rabiang baân lae thànoˇn **oòk** **pai** **chaàk** tua baân.
COP balcony house CONJ road **exit** **go** **from** CLF house
'There is a house-balcony and a road goes from the house.'
(Fm_Th_9_004_Path_From_House)

(58) Thànoˇn **oòk** **chaàk** baân **khâw** **pai** nai pà.
road **exit** **from** house **enter** **go** inside forest
'A road goes from a house into a forest.'
(Fm_Th_10_004_Path_From_House)

The occurrence of enter/exit-verbs outside of Region-changing situations further supports their bleached character. To a larger extent than for actual motion, their meaning in NAM-sentences did not differentiate between

Region:INTERIOR/EXTERIOR, on the one hand, and Region:AT, on the other. In this way, they rather function as markers of start- and end-point. This proposal is strengthened by the co-occurrence of the deictic verbs *pai* ('go') and *ma* ('come'), as in (54), (57) and (58). To see how deixis functions in NAM-sentences in more detail, let us turn our attention to Direction in Thai.

In a study on "emanation paths" in Thai, Takahashi (2002: p. 49) notes:

> [M]ost Thai perception emanation expressions […] include the deictic verb maa [ma] 'come' or pay [pai] 'go' which signals the conceptualizer's vantage point independent of event participants. It follows that Thai perception emanation events tend to be observed from a particular point of view. In other words, they are mostly designated in the 'relative frame of reference'.

So-called emanation paths construe a vantage point; arguably making them fall outside the scope of non-actual motion as defined in the present study (cf. Chapter 6 and Section 2 of the current chapter). As suggested in Chapter 6, the English prepositions *from* and *to* can signal either vantage point or NAM. Considering Takahashi's interpretation of emanation path, deictic verbs in NAM-sentences can thus be seen as not only expressing NAM, but also as a matter of conveying the speaker's vantage point ("I look at this from here"). We return to this question in the following chapter.

The previous examples illustrated the use of verbs for Viewpoint-centered Direction together with Path-verbs. Their use in the data was however slightly different. Both verbs occurred as the only verb (59), but *pai* ('go') was also found together with other Direction-verbs, as in (60). The opposite direction, *ma* ('come'), occurred together with Path-prepositions such as *chaàk* ('from') as in (61).

(59) Mi thangdoen **pai** nai umong.
COP path **go** inside mountain
'A path goes inside a mountain.'

(Fm_Th_13_007_Path_Tunnel_Infront)

(60) Mi tho sueng **khuên** **pai**.
COP pipe COMP **ascend** **go**
'A pipe goes up.'

(Fm_Th_13_018_Pipe_Outside_Tunnel)

(61) Pen tho thî **ma** **chaàk** umong.
be pipe COMP **come** **from** cave
'A pipe that comes from a cave.'

(Fm_Th_10_018_Pipe_Outside_Tunnel)

As seen from these sentences, the linguistic context of the two verbs differed with that of *ma* ('come') apparently being more constrained. This difference is reflected in the type of stimuli that allowed *ma*: Region-changing pictures from a first-person perspective with figures beginning outside the Landmark, as shown in Figure 7-4. A tentative explanation must first acknowledge the importance of deixis in Thai. As we saw in Chapter 4, the expression of actual motion was commonly deictically anchored. Given that expressing information about viewpoint is conventionalized in Thai, the speaker is required to convey it somehow, which is where the motivation from experience comes in. Confronted with the choice of *pai* ('go') or *ma* ('come') in a NAM-situation, the former could, due to Langacker's scanning analysis, be preferred (analogous to the discussion of the Swedish deictic verbs in Section 5.1). However, this does not account for the use of *ma* ('come') when describing stimuli such as in Figure 7-4. Here, the Figure has no apparent continuity forward in space and the road "disappears" into the darkness. It could be argued that the stimulus thereby presented less motivation for *pai* ('go'), implying departure from the speaker's perspective than for *ma* ('come'), implying its arrival at the speaker's location.

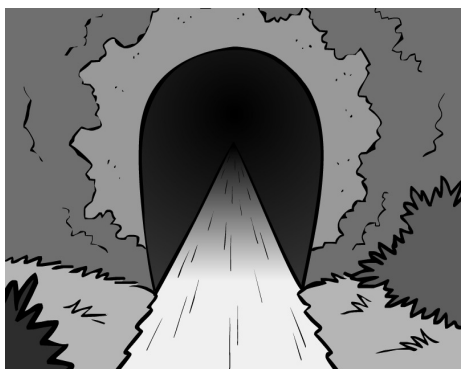


Figure 7-4. Stimuli from First-person perspective where the Figure continues beyond the perceptual field of view

Rounding off Direction, the verb *taam* ('follow') specifies Direction according to the object-centered FoR. As shown in (62), it occurred together with the posture verbs *wang* ('put down') and *riang* ('put in order'), telling us that the umbrellas and chairs were put down in an ordered fashion. The verbs *riang* and *wang* do not express motion, but rather posture. As discussed in Section 3, there are verbs that describe the state or configuration of an object by reference to how the state came to be. Typical examples are posture and placement verbs, which as noted by Stosic and Sarda (2009), were preferred over Motion-verbs in Serbian.

(62) Bon chaihat mi kâo-i phrómkàp rôm yu **wang**
top beach COP chair with umbrella exist **put.down**

riang **taam** chaihàt.
put.in.order **follow** beach
'On the beach, chairs with umbrellas have been ordered along the beach.'
(Fm_Th_1_Fm024_Loungers_along_beach)

I have hitherto discussed Path and Direction in NAM-sentences with a specific focus on the Path/Region-conflating verbs *khâw* ('enter') and *oòk* ('exit') together with the deictic verbs *pai* ('go') and *ma* ('come'). This focus has postponed the discussion of one of the most important features of motion expressions in Thai: serial verb constructions and the recurrent pattern of combining verbs expressing Manner, Path and Direction. How was this reflected in the Thai speakers' NAM-sentences? In the data, three potentially translocative Manner-verbs occurred: *doen* ('walk'), *wîng* ('run') and *phûng* ('dash'), cf. (63)-(66), always together with at least one Path-verb. This is what Rojo and Valenzuela (2004) called *path-related manner-verbs*. In our terminology, these verbs are potentially translocative. A possible hypothesis is that any information about motion expressed in a NAM-sentence must be at least potentially translocative, or the interpretation would become metaphorical.

(63) Mi thang léklék **doen** **khâw** **pai**.
COP way small.small **walk** **enter** **go**
'A small road goes (in)to [a house]'.
(Fm_Th_14_001_Path_House_Right)

(64) Thànoˇn sen nuèng sueng **wîng** **khâw** **pai** bon
road CLF NUM COMP **run** **enter** **go** inside

phukhaˇo.
mountain
'A long road that runs away into a mountain.'
(Fm_Th_2_005_Road_Inside_Tunnel)

(65) Pen thànoˇn thî **wîng** **oòk** **ma** chaàk umong.
be road COMP **run** **exit** **come** from cave
'A road that runs out from a cave.'
(Fm_Th_11_008_Road_Inside_Tunnel)

(66) Mi thànoˇn **phûng** **khâw** su thang.
COP road **dash** **enter** to way
'A road dashes into a way.'

(Fm_Th_9_006_Path_Outside_Tunnel)

The use of Manner-verbs seems to be highly motivated by the typical velocity of movement along the object. Paths and small roads were described with *doen* ('walk'), whereas larger roads such as freeways, where the velocity is typically faster, were described with *wîng* ('run') or *phûng* ('dash'). Manner thus conveys information about how fast one tends to move on the object in question.[62] This suggests that Manner in Thai contributes crucial information to NAM-sentences not seen in Swedish and French.

To sum up, the expression of NAM in Thai differed from Swedish and French in several crucial respects. All three types of motion-verbs were used in expressing NAM: Path and Direction-verbs independently or together, as well as Manner-verbs. The Region-changing verbs *khâw* ('enter') and *oòk* ('exit') were used in contexts where the figure did not "enter" or "exit" a landmark. This suggests that the verbs are bleached even in the context of NAM-sentences. Deictic verbs, specifically *pai* ('go') marked (at least) the vantage point of the speaker's conceptualization. I have argued that this use is both motivated from the experience of NAM and dependent on the linguistic convention of providing deictic information. The speakers' use of *ma* ('come') was restricted to stimuli of Region-changing entities from a First-person perspective with figures beginning outside the Landmark. This constraint was tentatively interpreted as experientially motivated by the lack of a forward continuation of the entity in question. In these pictures, the figures are not seen far beyond the tunnel entrance, as in Figure 7-4. For this reason, there is nothing that is "away" from the speaker as much as "towards" the speaker.

Manner-verbs expressed the velocity typically associated with human translocation along the entity in question. This contribution of Manner-verbs to NAM-sentences was not found in Swedish and French, where Manner-verbs, if they occurred at all, were bleached and interchangeable with Motion-verbs such as Swedish *gå* ('go') or French *aller* ('go'). The use of Manner-verbs in Thai was partially attributable to SVCs. As we saw in Chapter 5, Thai regularly expresses Manner, Path and Direction in the same clause. Furthermore, we have already seen that in expressing NAM, Swedish and French followed the general features of expressing actual motion. Indeed, Thai followed the same pattern, which we can describe as a clear interplay and interaction between motivations from experience shaped and constrained by linguistic conventions.

---

[62] Of course, Manner-information pertains to velocity and not the object associated with the entity in question, since, as it were, one typically drives, not runs, along a freeway.

6. Discussion: Towards a taxonomy of non-actual motion

All pictures used in the study were found to elicit NAM-descriptions in all three languages. We can thus conclude that there is not only the possibility for expressing static extensions in dynamic terms, but also that NAM-sentences are highly conventionalized in Swedish, French and Thai. Even if all three languages have the resources, they do so by different means and in ways clearly reminiscent of how actual motion is described in each respective language. As for actual motion, the Swedish speakers used (bleached or generic) Motion-verbs together with Path/Direction adverbs and prepositions but not Path-verbs. The French speakers used both Path-verbs and bleached Motion-verbs and the Thai speakers produced serial verb-constructions with Manner-, Path- and Direction-verbs. Where the generic Motion-verbs *gå* ('go') and *aller* ('go') were used in Swedish and French, the Thai speakers put a specific importance on *pai* ('go') and *ma* ('come'), signaling the speaker's "subjectified" vantage point on the situation.

Thus, we can see how pre-linguistic experiences, such as those discussed in the previous chapter, adapt to the specifics of linguistic conventions. Speakers of all three languages described pictures in ways that suggest a connection to motion, in terms of dynamism, change of location, vantage point, and so forth. However, the realization of these motivations differed from language to language. In other words, they adapted to the internal logic of language-specific semantic conventions and constraints.

With the help of Holistic Spatial Semantics, it was possible to find previously unexplored patterns where the expression of non-actual motion differed from actual motion. Several different types of NAM-sentences were detected, some common to all and some unique to one of the three languages. Both Swedish and French participants used generic Motion-verbs to express NAM, as in (67) and (68). These types of expressions were not sensitive to the stimuli described.

(67) En väg som **gå-r** **in** **i** en tunnel.
DET.INDF road COMP.REL **go-PRS** **in** **in** DET.INDF tunnel
'A road that goes into a tunnel.'

(Fm_Sw_30_007_YellowPathTunnelLeft)

(68) Une barricade qui **va** **jusqu'à** l'
DET.INDF.F barricade COMP.REL **go.3SG.PRS** **until** DET.DEF.M

horizon.
horizon
'A fence that goes to the horizon.'

(Fm_Fr_5_016_Fence_Tree_InFront)

The Thai participants did not use verbs of this kind, but rather relied on Path-conflating verbs, as did the French speakers. Both language groups used verbs for Path:MID as in (69)-(70) and Region-changing verbs as in (71)-(72). Swedish participants expressed this through generic Motion-verbs together with prepositions and adverbs, as in (67) above or for Path:MID as in (73).

(69) Mi saphan **khaàm** heˇo.
COP bridge **cross** ravine
'A bridge crosses a ravine.'

(Fm_Th_14_009_Bridge_Cliff_Distal)

(70) Une route qui **traverse** une montagne.
DET.INDF.F road COMP.REL **cross.3SG.PRS** DET.INDF.F mountain
'A road that crosses a mountain.'

(Fm_Fr_10_005_Road_Tunnel_Right)

(71) Thangdoen **khâw** **pai** nai umong.
path **enter** **go** inside cave
'A path enters goes inside a cave.'

(Fm_Th_10_006_Path_Inside_Tunnel)

(72) Les canalization-s qui **rentrent** **dans** un mur.
DET.DEF.PL pipe-s COMP.REL **enter.3PL.PRS** **in** DET.INDF.M wall
'The pipes that enter into the wall.'

(Fm_Fr8_019_Pipe_Tunnel_Left)

(73) En väg av stenar **gå-r** **genom** en flod.
DET.INDF road of rock-PL **go-PRS** **through** DET.INDF river
'A road of rocks goes through a river.'

(Fm_Sw_024_012_StonesInFront)

These sentences are similar in that they (a) use generic Motion-verbs and/or (b) use the language-specific conventions for actual motion. From this baseline of characteristic or typical NAM-sentences, there are related sentences where the reference to motion is diminished, but which still (i) clearly use the vocabulary and the constructions of motion and (ii) evoke the sense of motion. The clearest examples of this type were the verb-less sentences with "dynamic" (Path/Direction) prepositions and adverbs in Swedish, as in (74).

(74) Ett rör **ut** **genom** en tunnel.
DET.INDF pipe **out** **through** DET.INDF tunnel
'A pipe out through a tunnel.'

(Fm_Swe_20_020_Tunnel_Pipe_Infront)

Since they evoke dynamism and change, sentences with a general change-of-state verb rather than a Motion-verb are semantically somewhat similar to the verb-less sentence above. Found in all three languages, these sentences apply change to something immobile. When compared with expressions of actual motion, they involve a reduced element of motion, as in (75)-(77).

(75) En häng-bro som **börja-r** i botten av
DET.INDF rope-bridge COMP.REL **begin-PRS** in bottom of picture-

bilden.
picture-DET.DEF
'A rope bridge that begins in the bottom of the picture.'
(Fm_Swe_23_010_Bridge_Infront)

(76) Une haie qui **avance** **vers** la mer.
DET.INDF.F hedge COMP.REL **advance.3SG.PRS** **toward** DET.INDF.F sea
'A hedge that advances toward the sea.'
(Fm_Fr_6_013_Fence_SeaRight)

(77) Pen tho yao **toò** kan **oòk** **ma** **chaàk** umong.
be pipe long **continue** PRON.REFL **exit** **come** **from** cave
'A long pipe continues out from a cave.'
(Fm_Th_11_020_Pipe_Inside_Tunnel)

A third type of NAM-sentence has the opposite character of involving "more motion", which can be made in different ways. One way is by reference to the motion involved in attaining the particular static situation, as in (78)-(80), and another way is to use Manner-verbs to convey the type of velocity associated with traveling on the Figure, as in (80). This can, of course, be seen as due to stimuli only representing linear extensions in space. Would the material also include objects of different shapes and forms, it is possible that the degree of Manner-information would have been higher (but, possibly not very high – see Rojo and Valenzuela 2004).

(78) Cette belle conduite qui semble **pénétrer**
DET.DEM.F pretty pipe COMP.REL seem.3SG.PRS penetrate.INF

sous ces roche-s.
under DET.DEM.PL rock-PL
'This pretty pipe that seems to penetrate under those rocks.'
(Fm_Fr_13_017_Pipe_Tunnel_Right)

(79) Pen thang **lôt** tai umong.
be way **penetrate** under cave
'A road penetrates under a mountain.'

(Fm_Th_1_006_Path_Outside_Tunnel)

(80) Thànoˇn sennueng sueng **wîng** **khâw** **pai** bon phukhaˇo.
road clfNUM COMP **run** **enter** **go** inside mountain
'A long road that runs away into a mountain.'

(Fm_Th_2_005_Road_Inside_Tunnel)

On the basis of (at least) these three different types of NAM-sentences, is it possible to make further generalizations and explanations of NAM-sentences? Can they be ordered in terms of "how much" motion they involve? The most general type would then include sentences with Path but without Motion. These are sentences with information only about the transition from one state to another, such as the Swedish sentences without Motion-verb but with Path adverbs/prepositions. In these expressions, there is no motion, only specifications of the transition (or trajectory) with elements associated with motion. We can call this level *Non-actual Path/Direction*.

NAM-sentences with generic Motion-verbs or verbs conflating Path and Motion would in terms of the degree of motion involved be one step up along this hierarchy. The Motion-verbs are generic and thus retain a diminished sense of motion. Within this type, it is possible to differentiate between languages and verbs that can be applied only to entities affording human translocation. As noted in Chapter 6 and further discussed in Chapter 8, several languages exhibit constraints on NAM-sentences for entities without affordance for human translocation, e.g. pipes and fences (cf. Matsumoto 1996). It is therefore possible that we should differentiate between NAM-sentences applicable only to entities that afford human translocation and a more restricted type also applicable to those without this affordance. On the basis of limited data, Zlatev and Blomberg (2011) proposed a differentiation of two types. As it stands, it is largely a matter of future research to explore whether languages make this differentiation or not. Dependent on which, either one or two types would be required to capture cross-linguistic tendencies.

An additional type of NAM-sentences involves more elaborate evocations of motion, what we can call *Non-actual movement*. In such sentences, the Figure is described with more elaborate forms of movements, which can either relate to the shape of trajectory (e.g. 'zigzag', 'snakes') or the type of movement the entity is associated with – as when the Thai speakers used different Manner-verbs for objects associated with fast and slow travel.

In sum, this provides us with a three-tiered hierarchy from Non-actual Path via Non-actual Motion to Non-actual Movement. This corresponds to an implicational hierarchy, such as those used in typology (cf. Greenberg 1963), stating that if a

language has a particular type of structure then it must also have all levels to the left of it (see Table 7-2).

Table 7-2. The three types of Non-actual sentences ordered in an implicational hierarchy

	Non-actual Path	>	*Non-actual Motion*	>	*Non-actual Movement*
Characteristics:	No Motion-verb; Change-of state verbs; Path-prepositions		Generic Motion-verbs; Path verbs		Manner-verbs; Shape-verbs

Future research should explore the availability and usage of these three general types of non-actuality across languages. The present study was not designed to elicit expressions of Non-actual Movement, and was therefore unable to provide systematic data in this regard. Due to the scarcity of studies on NAM-expressions, the research priority was rather to operationalize the motivations and to implement them in a limited and consistent stimulus material designed to elicit NAM-expressions across languages. With the knowledge that speakers of languages as diverse as Swedish, French and Thai regularly and spontaneously used NAM-sentences in the present experimental set-up, upcoming studies should preferably include various forms of non-linear configurations as well as systematically differentiating between entities allowing for fast and slow travel. We turn in Chapter 8 to a quantitative treatment of the elicited data.

Chapter 8
Non-actual motion: Conventions and motivations

The previous chapter focused on patterns in the expression of non-actual motion in Swedish, French and Thai. The aim of this chapter is to further explore this topic, but now from a more quantitative perspective. Following a procedure similar to that adopted in the study on actual motion described in Chapters 4 and 5, we will here examine quantitative distributions of the different kinds of NAM-sentences detailed. The following questions will be the primary concerns:

- How common were NAM-sentences across the three language groups?
- Did the use of NAM-sentences differ for the different experimental conditions: (i) Afford/Non-afford motion and (ii) Perspective: First-person (1pp)/Third-person (3pp)? If so, can this be considered as supporting any of the experiential motivations discussed in Chapter 6?
- To the extent that there were differences between the language groups, can they be explicated by appeal to language-specific constraints and conventions?
- Were there quantitative indicators of language-specific ways to mark the difference between expressions of actual motion and non-actual motion?

1. Hypotheses and research questions

As described in the previous chapter, the stimuli for the elicitation task were designed according to a two-by-two design: showing figures that either afford human motion or figures that do not (e.g. roads vs. fences); crossed with this, the pictures displayed the (imaginary) situation either from a first-person or a third-person perspective (e.g. the point of view of the observer was either as if from "within" the picture or from a distant position). On the basis of the discussion of experiential motivations in Chapter 6 and operationalized in Chapter 7 we could expect some of these conditions to give rise to more NAM-descriptions than others.

To remind, three possible motivations for NAM-expressions were discussed in Chapter 6: (i) visual/mental scanning of a figure's length, (ii) the (en)active nature of perception and (iii) visualization of motion along the figure (of oneself or someone moving along the figure, or even the figure moving "metaphorically"). Applied to the

conditions of Afford motion and Perspective, the motivations discussed in Chapter 6 render the following four different and partially competing hypotheses. The expected results for each hypothesis are summarized in Table 8-1.

H1: Assuming the role of mental/visual scanning, all target stimuli (unlike the control stimuli) presented an extended figure. Since these stimuli can be considered to invite scanning under all conditions, they would be expected to elicit NAM-descriptions more often than the control pictures across all conditions.

H2: Given a strong motivating role of enactive perception, most NAM-sentences should be elicited under the conditions Afford motion+1pp, since these pictures give the illusion of the observer being positioned on the surface of a path, inviting one to move along it.

H3: If the affordance for motion is the major motivation for producing NAM-sentences it would be expected that NAM-descriptions are insensitive to differences in perspective and rather depend on whether the figure affords motion or not.

H4: Based on the visualization of motion, the prediction would be the same as for enactive perception, but differs by expecting verbs high on Manner-information over bleached or Path/Direction verbs.

Table 8-1. Summary of the predicted results according to the four hypotheses

Hypothesis	Predicted results
H1: Scanning	No differences between conditions (but high number of NAM-responses compared to controls)
H2: Enactive Perception	Afford/1pp elicit significantly more NAM-responses
H3: Affordance	Afford elicit significantly more NAM-responses irrespective of Perspective
H4: Visualization	Afford/1pp elicit significantly more NAM-responses with Manner-verbs

2. Overview

We may begin with a presentation of a summary compilation of the data. The lexeme-token ratio is quite divergent across the three language groups. The Swedish participants "reused" the same lexemes to quite a large extent, while the Thai and French speakers displayed much more variation (Table 8-2). With respect to the

number of clauses per description and word tokens per clause, the French speakers produced more material than the Swedish and Thai participants (Table 8-3).[63] The French participants also used more word tokens and lexemes, with higher variation between the speakers than the Swedish and Thai participants (Table 8-4). These ratios are similar to those reported for the study on actual motion discussed in Chapter 5.

Table 8-2. Number of word tokens, word types, lexemes and lexeme-token ratio for the three language groups

	Tokens	Types	Lexemes	Lexeme-token ratio
Swedish	6335	833	660	10.4 %
Thai	5588	414	400	4.0 %
French	10522	882	710	6.7 %

Table 8-3. Number of descriptions, clauses and word tokens per clause

	Descriptions	Clauses	Word tokens
Swedish	576	838	7.6
Thai	503	750	7.5
French	458	1019	10.3

Table 8-4. Mean number of clauses, word tokens and lexemes per participant

	Mean clauses	Mean word tokens	Mean lexemes
Swedish	1.5 (*SD*=0.9)	395.9 (*SD*=223.5)	77.3 (*SD*=25.5)
Thai	1.5 (*SD*=0.7)	399.3 (*SD*=168.3)	119.8 *(SD*=30.0)
French	2.3 (*SD*=1.5)	816.9 (*SD*=300.3)	182.8 (*SD*=31.9)

[63] The same Thai speakers participated in this study and the study on actual motion (Chapters 4-5), while the French and Swedish participants were different in the two studies. It cannot be ruled out that this difference had some effect on the final results.

3. Results

3.1. Spatial and motion descriptions

First of all, it was important to determine if the descriptions in the three languages were comparable. It was, after all, possible that some speakers of a language gave descriptions that contained less, or no, spatial information at all. Given the significant differences in the length of the descriptions produced by the French speakers and the other two groups, it was possible that (despite instructions) there was focus on other aspects than motion and spatial relations. To control for this, spatial descriptions and clauses were calculated by subtracting all descriptions not coded for (overtly) expressing spatial meaning through the semantic categories FoR, Region, Path, Direction and Motion. The proportions of descriptions that contained *at least* one clause with any or several of the semantic categories are shown in Table 8-5. For the target stimuli, the spatial descriptions were distributed across the experimental conditions as shown in Table 8-6.

Table 8-5. Percentages of descriptions with spatial information for target and control stimuli

	Swedish	Thai	French
Target	95.3 % (*SD* = 5.5 %)	89.5 % (*SD* = 13.4 %)	89.7 % (*SD* = 8.4 %)
Control	87.0% (*SD* = 10.0 %)	86.3 % (*SD* = 16.3 %)	88.5 % *(SD* = 8.1 %)
Total	92.5 % (*SD* = 5.6 %)	88.6 % (*SD* = 13.6 %)	89.3 % (*SD* = 7.0 %)

Table 8-6. Percentages of spatial descriptions for target stimuli

Swedish	Afford	Non-afford
3pp	98.5 % (n=95)	93.8 % (n=90)
1pp	97.9 % (n=94)	91.7 % (n=88)
French		
3pp	71.4 % (n= 60)	86.9 % (n=73)
1pp	84.5 % (n=71)	79.6 % (n=67)
Thai		
3pp	91.6 % (n=77)	89.3 % (n=75)
1pp	96.4 % (n=81)	81.0 % (n=68)

As can be seen from these tables, the participants of all three languages produced a high number of spatial descriptions for target as well as for control stimuli. This suggests that participants of all three languages performed the task according to the

instructions. Out of the large amount of spatial descriptions, how many of these contained at least one NAM-clause, i.e. NAM-descriptions?[64] As can be seen in Figure 8-1, approximately 40% of all spatial descriptions contained a NAM-description in all three languages, with the Thai and French groups producing slightly more on average. This could be compared with the control pictures which, following the intended design, elicited NAM-descriptions in less than 5% for all three language groups. The difference between target and control stimuli in proportions of NAM-descriptions was statistically significant, as shown in a paired two-sample t-test (t= 15.0, df=42, p <.001). The differences between languages were not significant.

As per H1 (scanning), we can thus conclude that the participants clearly differentiated target from control stimuli. These proportions are sufficiently high to suggest that NAM-sentences are not only possible, but also common and conventionalized in the three languages.

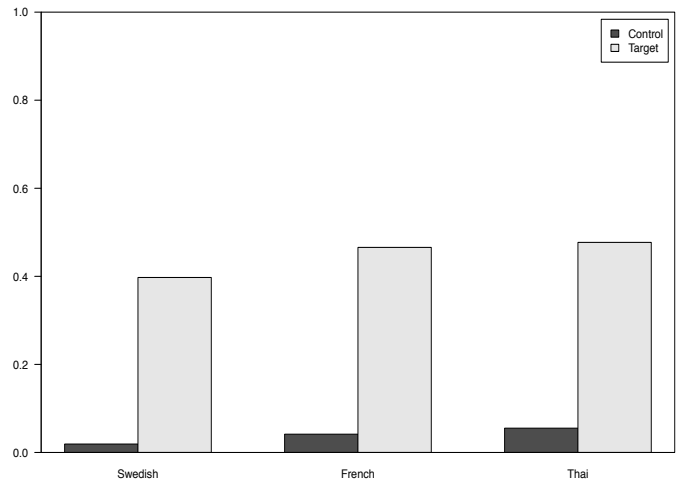


Figure 8-1. The proportion of NAM-descriptions in Swedish, French and Thai

Still, the NAM-descriptions were not distributed evenly across the four conditions, as shown in Figure 8-2. NAM-descriptions were most often used for the condition 1pp/Afford motion in all three languages. This effect was strongest for the Thai speakers, intermediate for the French group and weakest for the Swedish participants. However, the variation was quite large in all three groups, and could be attributed to two different factors. First, there were large differences between speakers in the amount of NAM-sentences produced. Secondly, stimuli of all conditions elicited

[64] To the extent that descriptions contained NAM-clauses, the ratio was close to 1:1. In other words, almost no descriptions contained more than one NAM-sentence.

differing amounts of NAM-sentences. We will return to this in more detail in Section 3.3.

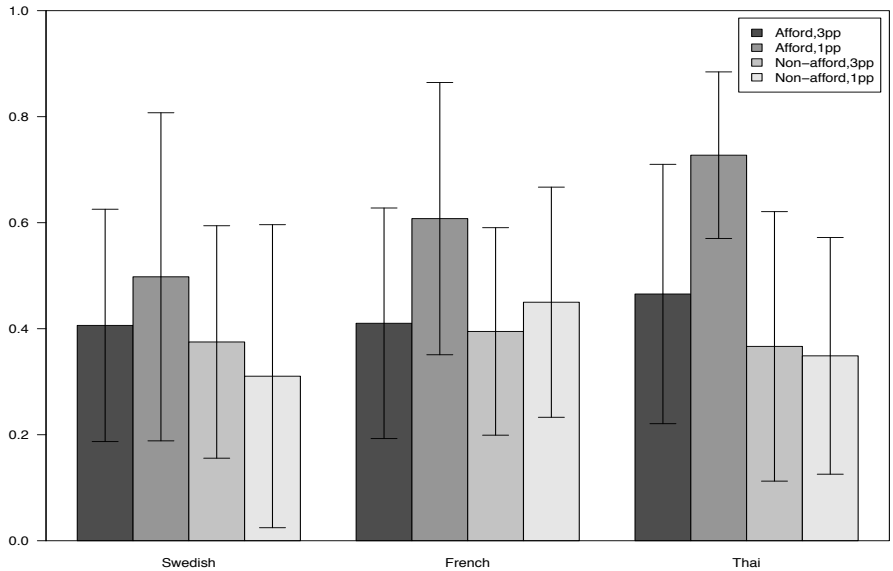


Figure 8-2. Proportion of NAM-descriptions per stimuli type and language; error bars represent standard deviation

Regression analysis with fixed and random effects found no significant differences between the two experimental conditions (χ^2= 11.6, df=8; p= .17). It appeared that the variation between speakers and stimuli was at least partially responsible for this outcome. The data was therefore transformed to proportions of NAM-descriptions over the four different experimental conditions. In this format, the tests were insensitive to the variation between individual stimuli. The transformed data was then tested with regression analysis with fixed and random effects for two-way interaction between the experimental conditions. In this analysis, Afford Motion+1pp differed significantly from the other conditions (χ^2= 11.8, df= 1; p< .0001). Three-way interaction with language as a third factor was not significant (χ^2= 13.2, df= 8; p= .10). This suggests that Afford motion/1pp elicited significantly more NAM-responses than the other conditions across all three languages.

To ensure that these results were not affected by the removal of non-spatial descriptions, the same tests were conducted on all descriptions as well. With one exception, this did not provide different results: the Swedish group was found to produce significantly fewer NAM-descriptions for stimuli 1pp-stimuli than the other two groups (χ^2=9.8; df=4, p=.04). In other words, independent of the figure's affordance for motion, the Swedish speakers were, in comparison, less inclined to produce NAM-descriptions.

How do these results conform to the hypotheses presented in Section 1? H1 (scanning) is supported by the large differences between control and target stimuli, but it cannot account for the differences between experimental conditions. As predicted by H2 (enactive perception), NAM-descriptions were most strongly elicited under the conditions of Afford+1pp. H3 predicted that Afford would provide more NAM-descriptions, irrespective of perspective, but as can be seen in Figure 8-2, the ratios for Afford+3pp are quite similar to those for Non-afford. It is only Afford+1pp that differs significantly. Finally, the dominance of Afford+1pp is also predicted by the visualization-based hypothesis (H4), but as documented in Chapter 7, the actual verbs used (with the possible exception of the Manner-verbs in Thai) do not support this hypothesis. In sum, the most strongly supported hypothesis was H2, enactive perception.

3.2 Resources and their distribution

The previous chapter detailed the resources for expressing NAM in the three languages. But how are these resources distributed quantitatively? With respect to the verb types used, the participants followed similar tendencies as for actual motion. That is, the French speakers used the largest sample of different verbs and the Swedish speakers the fewest lexemes. The Swedish participants used 11 different Motion-verbs distributed over different semantic categories as shown in Table 8-7, with semantic category determined on the basis of what type of actual motion the verbs expressed. Looking at the semantic content, these were either generic or did not serve primarily as verbs for Motion, such as for example *gå* ('go') and *leda* ('lead'). Other examples include *fortsätta* ('continue') and *sluta* ('end'), verbs that can define the continuation or end of processes in general. As suggested in Chapter 4, such verb express Motion covertly than overtly. Thus, as discussed in the previous chapter, the verbs that occurred in the Swedish data were not semantically dense with information about actual motion.

Table 8-7. The different verbs used by the Swedish participants

Manner	**Path**	**Direction**	**Cause**	**Other**	**Tot**
4	2	1	2	2	11
flyta ('float') *gå* ('go') *löpa* ('run') *spruta* ('spurt')	*sluta* ('end') (covert) *försvinna* ('disappear') (covert)	*komma* ('come')	*leda* ('lead') *binda* ('bind')	*sticka* ('stretch') *fortsätta* ('continue') (covert)	

In contrast, both the French and the Thai participants used verbs familiar from our discussions of actual motion in Part II (see Tables 8-8 and 8-9). As could be expected, Path- and Direction-verbs recurred in both language groups. Both the Thai and the French speakers also used verbs that conflate Manner and Path, e.g. *lôt* ('penetrate')

and *pénétrer* ('penetrate'). In Chapter 7, I interpreted these verbs as expressing the process through which the entity came to be, in this study restricted to pipes and roads through tunnels. Such a state-of-affairs requires a previous force *actually* penetrating or drilling through the landscape. The reference to the background of an entity's becoming can be seen as retained in describing the static configuration later occupying the landscape.

Table 8-8. The different verbs used by the French participants

Manner	Path	Direction	Cause	Manner+Path	Other	Tot
6	8	8	3	3	7	35
baigner ('bathe') *écouler* ('flow') *fuir* ('flee') *marcher* ('walk') *s'étendre* ('expand')	*entrer* ('enter') *passer* ('pass') *sortir* ('exit') *traverser* ('cross') *arriver* ('arrive') *retourner* ('return') *partir* ('leave') *accéder* ('reach')	*diriger* ('direct') *longer* ('run along') *monter* ('ascend') *venir* ('come') *se diriger* ('head for') *suivre* ('follow') *s'avancer* ('move forward') *s'approcher* ('go closer')	*conduire* ('lead') *mener* ('lead') *relier* ('connect') *sèparer* ('separate')	*jaillir* ('spurt out') *s'enfoncer* ('penetrate') *pénétrer* ('penetrate')	*aller* ('go') *bouger* ('move') *deboucher* ('open into') *se poursuivre* ('continue') *transporter* ('carry') *emprunter* ('take') *prendre* ('take') *continuer* ('continue')	

Table 8-9. The different verbs used by the Thai participants

Manner	Path	Direction	Cause	Manner+Path	Other	Tot
3	5	5	2	4	3	22
doen ('walk') *phûng* ('dash') *wîng* ('run')	*khâw* ('enter') *khaâm* ('cross') *oòk* ('exit') *phaàn* ('pass') *thu˘eng* ('reach')	*khuên* ('ascend') *long* ('descend') *ma* ('come') *pai* ('go') *taam* ('follow')	*chueam* ('connect') *riang* ('put in order')	*chò* ('peirce') *lôt* ('penetrate') *tàt* ('cut-through') *thálú* ('go-through')	*thai* ('take') *toò* ('continue') *thòt* ('take-off')	

The Thai participants stood out by using three different Manner-verbs for human gaits. These were found in the previous chapter to differentiate between Figures associated with slow and fast travel, such as paths vs. highways. The use of Manner-verbs in Thai should be contrasted with some of the Manner-verbs that appeared in the French data. A verb such as *baigner* ('bathe') is not used in a NAM-sentence, but rather describes an actual motion that could take place in the represented situation.

These tables give us a picture of the verbs used, but not of their frequency in the data. As seen in Table 8-10, the Thai speakers regularly used the Viewpoint-centered Direction-verb *pai* ('go') – to a much greater extent than its opposite *ma* ('come'). Considering the dedicated slot for deictic verbs in SVC, a high frequency of such verbs is to be expected. The huge difference in frequency between *pai* ('go') and *ma*

('come') can be seen as motivated by the perspective of the speaker. From this viewpoint, the Figure is more readily seen as leaving rather than arriving. Additionally, go-verbs such as *pai* are often less deictic than come-verbs as *ma* (cf. Fillmore 1997). As with *go* in English serving as a typical NAM-verb, this would suggest that *pai* is more general and less deictic than *ma*. The verbs for Region-change, *khâw* ('enter') and *oòk* ('exit') are recurrent in the data, as are *phaàn* ('pass'), as well as the Path+Manner-conflating verbs *lôt* ('penetrate') and *tàt* ('cut-through').

The Swedish participants used two verbs in almost 80% of all cases: *gå* ('go') and *leda* ('lead'). As discussed in the previous chapter, these verbs can be applied to many domains other than motion. Still, that they would make up almost 80% of all NAM-sentences is quite noteworthy. In addition, the Direction-verb *komma* ('come') and the hard-to-classify *fortsätta* ('continue') also occurred quite frequently. The latter of these expresses continuity in change. When applied to NAM, it occurs together with Path/Direction adverbs and prepositions and thus participates in expressing the continuity of an entity's spatial extension.

Consistent with the larger amount of verb types, the French speakers were also more diverse in terms of verb type frequencies. Different Path-verbs were common, such as the Region-changing verbs *sortir* ('exit') and *rentrer* ('re-enter'), and verbs expressing Path:MID, such as *traverser* ('cross') and *passer* ('pass'). The two generic verbs *mener* ('lead') and *aller* ('go') also recurred.[65]

The verbs which were used, taken together with their status within each respective language, point to the following conclusion: verbs where Motion is bleached as well as Direction-verbs or Path-verbs are the typical candidates for expressing NAM across the three languages, with the Thai participants' use of Manner-verbs for signaling velocity being an interesting deviation from this general tendency.

[65] Interestingly, Rojo & Valenzuela (2000) found a more diverse set of Spanish verbs in their study, though this difference may have to do with the different elicitation procedures, see Chapter 7, Section 2.

Table 8-10. The most common Motion-verbs in the three languages, with English translation and semantic coding

Verb	Translation	Category	Occurrences	Percentages (of total Motion-verb tokens)
			Thai	
pai	go	Direction	79	24.1 %
khâw	enter	Path+Region	50	15.2 %
phaàn	pass	Path	44	13.4 %
oòk	exit	Path+Region	23	7.0 %
ma	come	Direction	17	7.0 %
lôt	penetrate	Path+Manner	15	5.2 %
tàt	cut-through	Path+Manner	12	4.6 %
			Swedish	
gå	go	Manner	63	39.4 %
leda	lead	Cause	62	38.8 %
komma	come	Direction	14	8.8 %
fortsätta	continue	Other	10	6.3 %
			French	
sortir	exit	Path+Region	28	16.7 %
mener	lead	Cause	19	11.3 %
traverser	cross	Path	17	10.1 %
aller	go	Motion	16	9.5 %
rentrer	(re-)enter	Path+Region	13	7.7 %
passer	pass	Path	10	5.9 %

Did this pattern apply to all four conditions of target stimuli? In French, the two most common verbs exhibited interesting differences dependent on the condition. The verb *sortir* ('exit') occurred mainly when the depicted figure did not afford human motion, such as pipes (n = 20 for Non-afford, n = 6 for Afford). When the figure did afford human motion, NAM-descriptions were elicited only for stimuli of figures drawn from a first-person perspective. No similar constraints pertained to Region-change in the opposite direction, i.e. *entrer* ('enter'). Instead of using *sortir*, when the Figure afforded motion, the French speakers preferred verbs such as *traverser* ('cross') and *passer* ('pass'), possibly indicating that there is continuity and travel associated with roads but not with pipes. While insensitive to perspective, *mener* ('lead') showed the opposite pattern with respect to the affordance parameter: 17 out of 19 occurrences were for Afford. The Swedish verb *leda* ('lead') exhibited a similar tendency accounting for 46 out of 62 occurrences for the condition Afford. While in part attributable to the higher amount of NAM-descriptions for this condition, the difference in occurrences is so considerable that this can only be a partial explanation. That these verbs are so restricted to Figures that afford motion is

an interesting finding. A possible explanation can be found in how the semantics of these verbs relate to the motivation from metonymy. In general terms, *leda* and *mener* are goal-directed: they can express different forms of processes with a direction towards an end. It could be possible that since roads afford human motion they are seen as imbued with a telos. The extensionality of fences and pipes, by contrast, are not for human beings to travel along.

The production of the two most common verbs in Thai *khâw* ('enter') and *pai* ('go') combined in a serial-verb construction, *khâw pai* ('enter go'), was also constrained by the experimental conditions: 9 out of 11 occurrences were found in cases where the figure afforded motion. The use of these verbs as the only verb in a clause, or together with other verbs in SVCs, was not restricted by conditions in the same way. In sum, participants of all three languages used a smaller set of verbs for non-actual than for actual motion. The ones most commonly used were bleached, but still constrained in interesting ways that seem to suggest both common motivations and language-specific adaptations of these.

There are clear indicators for differences between the NAM-descriptions analyzed here, and descriptions of actual motion (AM) from Part II. In Swedish, one clear difference from actual motion was discussed in Chapter 7, namely sentences without verbs but with adverbs and prepositions expressing Non-Actual Path (NAP). A NAP-sentence is like a NAM-sentence in every respect, but without a verb expressing Motion. In Swedish, of the spatial descriptions that did *not* contain a NAM-sentence, 18.3 % (n=38) involved a NAP-sentence, distributed across stimuli types as shown in Table 8-11. As can be seen, these sentences were clearly more common for Afford motion+1pp. Considering this, NAP-descriptions could be seen as "compensating" for the lower amount of NAM-descriptions in this condition for Swedish participants, as compared to the French and Thai speakers.

Table 8-11. The distribution of sentences with Non-actual Path (NAP-sentences) across spatial description for each stimuli type (in the Swedish group)

	Afford	Non-afford
1pp	38 % (n=18)	15 % (n=9)
3pp	7 % (n=4)	13 % (n=7)

An even clearer indication of a difference between AM-sentences and NAM-sentences could be found by comparing the amount of Motion-verbs in Thai-SVCs. The amount of motion-expressing verbs can be used as a measurement of the density of motion in a description: the more such verbs there are, the higher the density. If we compare the number of verbs per clause containing Motion-verbs in Thai, we can see that NAM- and AM-sentences different systematically (see Figure 8-3). While AM-sentences most frequently had three or more verbs per sentence, a single verb was the most common in NAM-sentences. It can be inferred that the Manner-verb was

typically dropped from the SVC, leaving Path and/or Direction verbs. This can be considered as a language-specific way to mark the difference between actual and non-actual motion in Thai, as well as a reflection of their semantic and cognitive differences, *pace* "simulation semantics" models that neglect this (cf. Chapter 6).

Apart from the type of verbs used, the French speakers did not mark NAM-sentences in any way that clearly differentiated them from translocative AM-sentences, which is due to the French speakers' emphasis on Path-verbs for expressing translocation. By its very nature, Path-verb focus on outer motion and for this reason, the French speakers did not mark the difference between AM- and NAM-sentences in a way open for quantitative investigations. This could be expected to hold for all languages where Path is preferably expressed in the single verb of a clause.

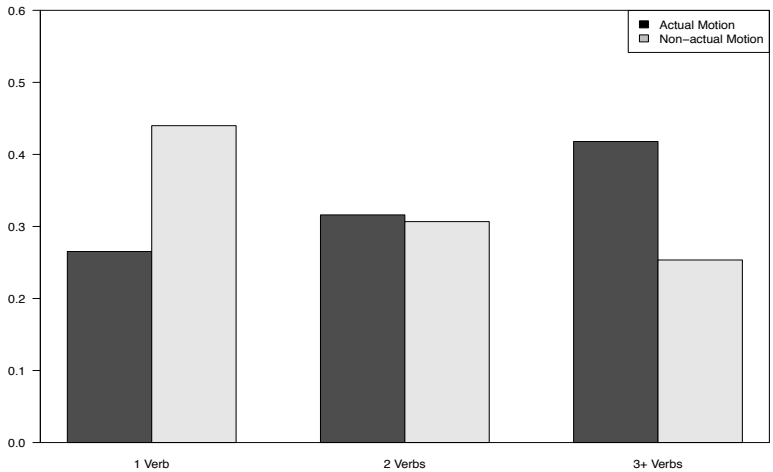


Figure 8-3. The proportion of Thai clauses with Motion-verbs in the study of Non-actual motion compared with the study of Actual motion

3.3 Discussion of possible effects of differences in stimuli

In addition to the differences discussed above, there was a pronounced variation in the amount of NAM-descriptions between different participants, on the one hand, and stimuli, on the other, which deserves some further discussion. Some participants rarely or never included NAM-sentences in their (spatial) descriptions. The amount of NAM-sentences also varied across stimuli of all four conditions. Most clearly, one third of the Non-afford stimuli elicited NAM-sentences in only 10% of all cases. Another third of the Non-afford stimuli were among those that elicited the highest number of NAM-sentences. These differences across stimuli are visualized in Figure 8-4.

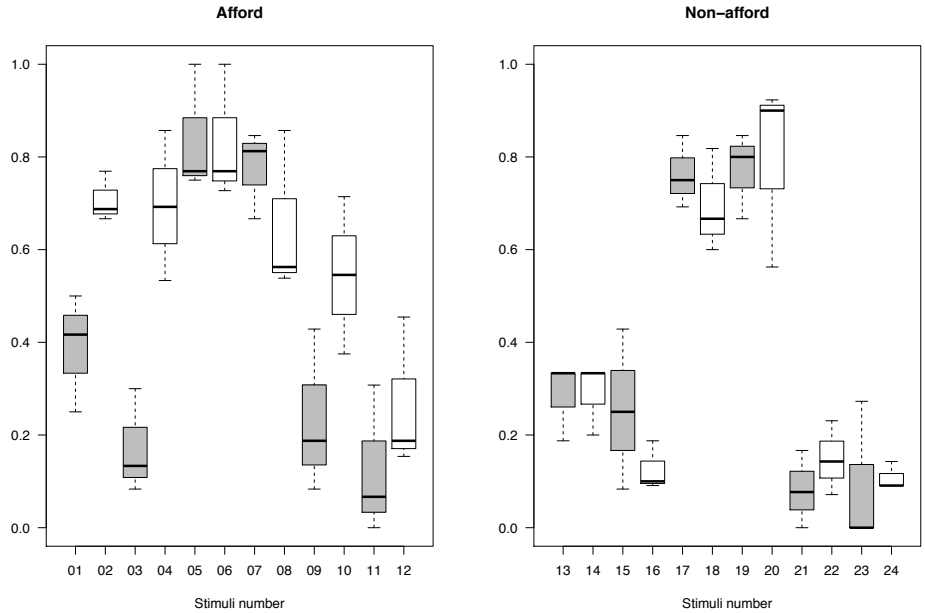


Figure 8-4. The proportion of NAM-responses for each individual stimulus (marked by respective number); grey boxes indicate 3pp, white boxes 1pp. The results are averaged for all three language groups.

On the one hand, the uneven distribution indicated that several of the pictures produced very few NAM-sentences. On the other hand, the variation might be explained by looking at possible differences between the stimuli that did elicit a high amount of NAM-sentences and those that did not. Independent of conditions, figures located at tunnel openings, such as those shown in Figure 8-5, elicited most NAM-sentences. A possible explanation is that roads and pipelines are in general associated with motion. Even though pipelines do not afford *human* movement along them, we know that they are built for transporting liquids of different kinds. In other words, liquids move inside pipelines.

Another possibly contributing factor is more attuned to the definition of NAM-experiences in Chapter 6 as dynamic qualities of consciousness involved in apprehending a situation without any perceived motion. The pipes and roads are visually represented, independently of perspective, as continuing beyond a perceiver's field of view (see Figure 8-5). The boundary between inside/outside the tunnel is clearly marked, but we know from experience that the object "entering" or "exiting" continues on the other side as well. To convey this continuity of extending beyond one's perceptual field of view, it could be hypothesized that participants would be inclined to describe this with a NAM-sentence. We can compare these situations with other stimuli where figures have a clearly demarcated bounded beginning, end or

both. In these situations, the entire length of the figure is perceptually determinable. Thus, the figure does not continue on beyond the perceptual field of view.

In one sense, this explanation is reminiscent of Langacker's (1999, 2006) notion of visual scanning, analyzed phenomenologically in Chapter 6 as one of several experiential motivations for NAM-descriptions. It deviates from his notion, however, in one important sense. Where visual scanning is about the process of "building up" to a full conception of a perceived situation, there is no finalization in these situations: the pipe or road continues on beyond the field of view. This absence of continuity without completion might motivate the high degree of NAM-sentences in these situations.

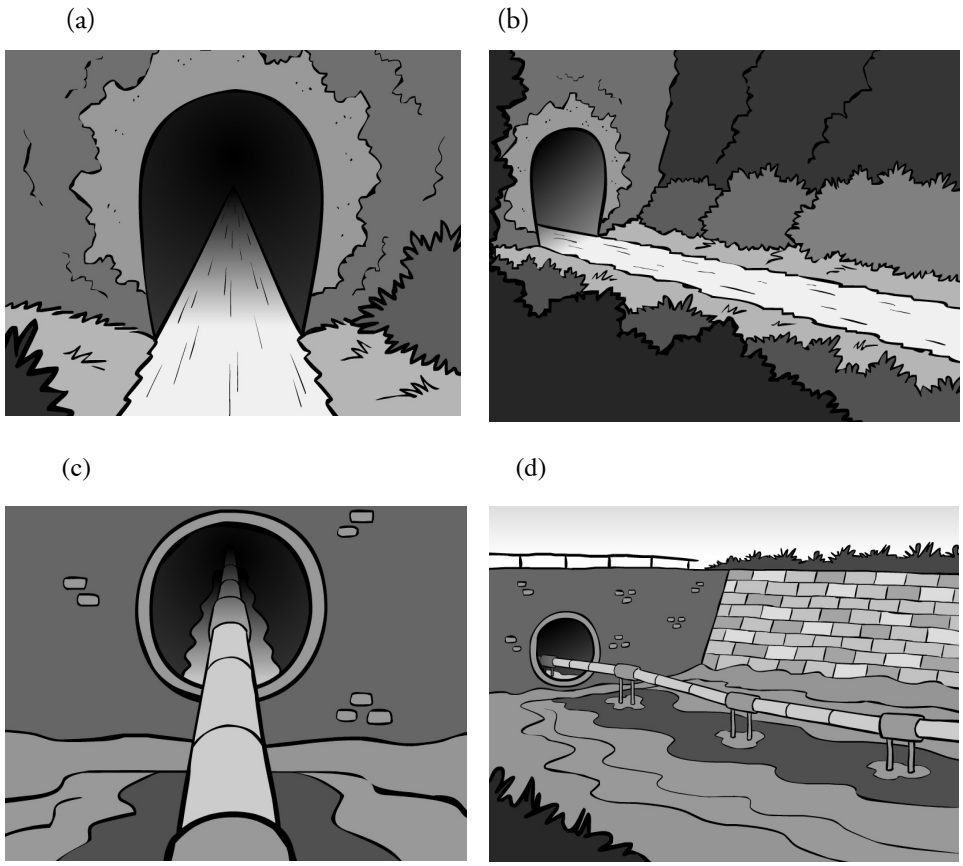


Figure 8-5. Stimuli for every condition where the figure continues beyond the perceptual field of view

The stimuli that only elicited NAM-descriptions to a low degree had two features in common. First, participants did not describe the linear extended object as the Figure,

but rather as the Landmark or something else in the background (as often was the case for the picture shown in Figure 8-6).

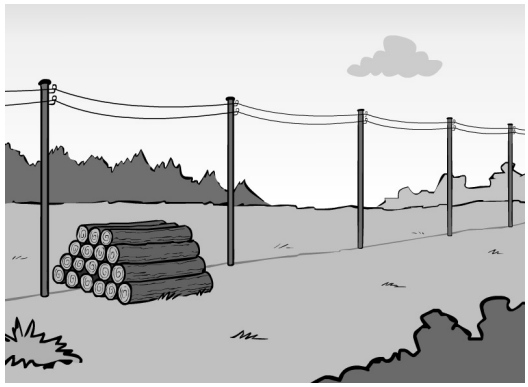


Figure 8-6. A picture where the intended Figure and Landmark were often reversed in descriptions

Secondly, two pairs of pictures represented multiple objects of the same kind aligned along a landmark, as in the picture shown in Figure 8-7.

These were designed to follow Langacker's (1990) notion of a piecemeal building-up, i.e. the objects taken together would be united to a path through the temporality of the visual experience. As it turned out, participants did not typically describe these pictures with a NAM-sentence, but merely described that a number of discrete objects of the same kind were aligned along a Landmark. Thus, an indication for future studies is that problematic stimuli such as those shown in Figures 8-6 and 8-7 should be avoided while the difference between entities that continue beyond the perceptual field of view (as in Figure 8-5) and those that do not should be more systematically investigated.

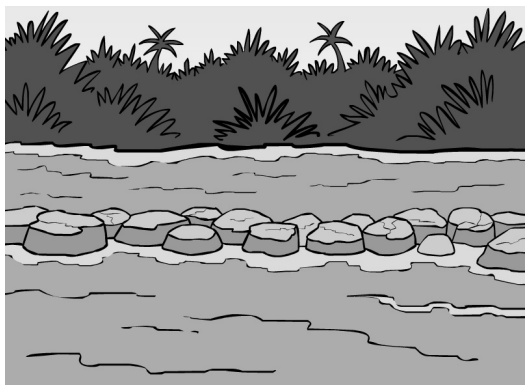


Figure 8-7. Stimuli of separate objects possible to unite in perception

4. Summary

This third part of the book has presented one of the first theoretically and conceptually grounded analyses of the expression of non-actual motion across languages. Following Blomberg and Zlatev (2013), I proposed in Chapter 6 that NAM-sentences have multiple experiential motivations, while at the same time their use is prone to adapt to language-specific conventions. These proposals were supported by the empirical study described in the previous and the present chapters. Pictures following a two-by-two design with human motion Affordance and Perspective as dimensions, elicited considerable numbers of NAM-sentences by native speakers of Swedish, French and Thai, compared to control pictures. How these sentences were realized largely followed the resources and tendencies specific to the different languages. The Swedish participants used bleached Manner-verbs and Cause-verbs together with adverbs and prepositions for Path and Direction. They were also found to use sentences with Path/Direction prepositions and adverbs without verbs expressing Motion: *Non-actual path* (NAP) sentences. The French speakers used Path-verbs and Direction-verbs together with prepositions, just as for actual motion. This similarity was attributed to the tendency in French to conflate Path with Motion in the main verb of the sentence. The Thai speakers mainly used single Path-verbs and Direction verbs or combined them in SVCs. They also used Manner-verbs to differentiate between entities associated with fast and slow travel. This lead to proposing an *implicational hierarchy of Non-actuality*: Non-actual Path < Non-actual Motion < Non-actual Movement. The general typological hypothesis is thus that Non-actual Path sentences will be the most common ones in the world's languages, while Non-actual Movement least so.

In this chapter, I investigated the quantitative distribution of NAM-sentences in the three languages. The condition Afford motion+1pp was found to elicit the highest number of NAM-sentences in all three language groups, supporting the hypothesis that enactive perception is an important, though non-exclusive, motivational factor for the use of NAM-sentences.

In contrast to the case for actual motion descriptions, the French participants used fewer Manner-verbs – both as types and as tokens. The Thai speakers used fewer verbs per clause for NAM than for actual motion, typically omitting the Manner-verb from NAM-sentences. This suggests both a language-specific strategy to mark the difference between actual and non-actual motion (where the "density" of motion is less in the latter case), and a possible reflection of the important semantic and cognitive differences between the two phenomena.

* * *

We embarked on this journey by highlighting the multiplicity of motion in experience and language, looking at the same time for generalizations and connections. It has been a long journey, for the author as well as for the reader. We have ventured through both theoretical and conceptual issues and through two empirical investigations of motion: actual motion when the figure changes its position, and non-actual, when it does not, but is nevertheless perceived or conceived, and at least some times described so in language. The arrival is approaching. We are almost there.

Part IV
Arrival

Chapter 9
At the end is the beginning

To begin again indefinitely, that is our finitude.
Jacques Derrida

In this book, we have been concerned with understanding how motion manifests itself in language and in experience. Already at the outset, I argued that motion is a multifaceted phenomenon. Many different kinds of experiences involve motion. In some of these, motion is thematized and in others it resides in the background of consciousness. Likewise, many different kinds of motion expressions stand for the experience of motion while others do not express actual motion. To begin with, I invoked three principal distinctions of motion in language and experience: inner vs. outer, lived vs. observed and actual vs. non-actual. We have mainly investigated the last couple, with the other two pairs mainly serving to qualify different aspects of actual and non-actual motion. In Chapter 1, I asked: *what is common to these experiences, where do they differ and how are they expressed in language*? These question have guided the conceptual, theoretical and empirical investigations in the rest of the book. Now, it is time to sum up. For the sake of perspicuity, I do this under the three general headings of conceptual, theoretical and empirical, though the three are not to be viewed as categorically distinct.

1. Conceptual issues

The dual focus on both experience and language follows from two fundamental assumptions, standing to one another in a dialectical relationship: the first is that language is deeply motivated by prelinguistic experience. The second is that meaning in language is different from the meaning found in pre-linguistic experience. In contrast to theoretical accounts that equate linguistic with pre-linguistic meaning, I argued in Chapter 2 that even though both language and experience are laden with meaning, they are so in different ways. Experience is rich and tangible but the forms of language are schematic and general; the former belongs to someone while the latter is regulated by conventions/norms that are shared, and is in a sense, impersonal. The two kinds of meaning also differ in how they are given: experience is continuous and does not differentiate the *signified* from the *signifier*, while language for the most part rigidly maintains this duality. With respect to linguistic signs, it is possible (and often fruitful) to make the distinction between *signification*, the inter-linguistic place

occupied by a sign in relation to other signs in the same system, and *designation*, the range of meanings that a sign can take (Coşeriu 2000).

In this way, I have qualified the view of language as transparently reflecting pre-linguistic meaning, common to cognitive semantics (Talmy 2000a, b; Langacker 1987, 1990, 2006). It is true that language and linguistic meaning are motivated rather than "arbitrary". However, I have argued that it is misleading to conclude that semantics *equals* pre-linguistic conceptualization. One of the main reasons for this argument is meta-linguistic in nature. Itkonen (2003) describes linguistic knowledge as departing from a pre-theoretical, unsystematic and certain state and arriving at theoretical, systematic and uncertain state. In everyday life, our knowledge of language does not follow a particular theory or needs to make its way through an analytical sieve or filter. It is therefore unsystematic and pre-theoretical. Despite this, such knowledge is in a sense *certain*. As we are speaking to a friend or watching the news, we know what the words mean (in a pre-theoretical understanding of 'mean'). We note when language is used incorrectly and when it is not. A scientific treatment of language, however, is systematic and theoretical. It springs from a linguistic analysis and particular theory. In this process, the knowledge of language becomes, however, uncertain. The prior certainty has been turned to a fallible state of uncertainty. A view of science as departing from a state that is always-already ingrained with meaning is the fundamental tenet of a phenomenological approach. It is what motivated Husserl to "turn to the things themselves" in the first place. This is at its clearest in the human sciences where the *phenomena* are meaningful in themselves, prior to science (cf. Schutz 1967). With or without science, the languages we speak bear meaning to us. In the natural sciences, the phenomena are not meaningful without their scientific treatment. It does not mean anything for gold to have 79 electrons. This is sometimes (which is to say, all too often) forgotten.

Thus, I have argued that language as motivated by bodily experience is not the same thing as equating the meaning encountered in language with the meaning of bodily experience. What would then be the location for the meeting place of language and experience, in particularly with respect to motion? In this book, this landing site has been that of the *life-world*. It is here that language and experience are situated. The life-world, the world taken for granted as it is often said, is where meaning resides. *A fortiori*, it is here that meaning is generated, upheld, iterated and changed. It would be a mistake to see the life-world as detached or separate from its subjects. On the contrary, there is an intricate interplay between the activity of human beings and the generativity of the life-world. They are, as it were, interdependent. Through the principal separation of meaning in language from meaning in non-linguistic experience, and with the help of phenomenology, I have proposed an interpretation of motion in language and experience, including both actual and non-actual motion. I thereby suggested an alternative trajectory where language and experience are best analyzed separately prior to calibrating the relation between the two. I addressed this task through phenomenological analysis of experience and building on the semantic

framework of Holistic Spatial Semantics (Zlatev 1997, 2003, 2007), which brings us to more theoretical, and thus more uncertain waters.

2. Theoretical issues

With the help of the phenomenological approach, and the theory of Holistic Spatial Semantics, motion in language and experience was analyzed in several steps of increasing empirical detail. First, I approached actual motion in Part II through an experiential analysis (based on Zlatev, Blomberg and David 2010). In contrast to Talmy's analysis where motion is conceptually separated into two kinds, I proposed that motion is more multifaceted than so. The taxonomy of motion situation includes three independent binary parameters: translocation, boundedness and causation. These can be combined in any way, leading to eight different types of motion situations. *Qua* experiential analysis, these parameters are separate from the linguistic expression of motion. With respect to the elicitation-based study of actual motion described in Chapters 4 and 5, the most important contribution of the experiential analysis was the differentiation between bounded and unbounded translocation. I hypothesized that the difference between these two motion situations would be linguistically reflected and that this should shed further light on focal topics in motion semantics.

To calibrate the experience of motion against language, a framework for analyzing language was required. I argued that Talmy's semantic analysis is insufficient by focusing mainly on the two semantic categories of Path and Manner, neither of which is clearly defined in Talmian motion typology. Instead, I used and adapted the framework of Holistic Spatial Semantics that involved eight semantic categories, all with clear definitions: Figure, Landmark, Region, Frame of Reference, Path, Direction, Motion and Manner. These categories where predicted to be necessary and sufficient for capturing the meaning of translocative sentences in all languages, through mapping to languages-specific resources in patterns of distribution and conflation. As far as the analysis of motion in Swedish, French and Thai is concerned, this prediction was largely confirmed.

In Part III, we turned to non-actual motion. In accordance with the claims made by Talmy and Langacker, there is indeed a strong cross-linguistic tendency to use motion expressions for non-spatial kinds of change, or even to express the configuration of a static entity. Through the concept of *non-actual motion*, introduced to keep experiential motivations and conventional semantics apart, I returned in Chapter 6 to the issue of motion and experience. In this chapter I criticized previous analyses on two grounds: for overgeneralizing beyond their scope of validity and for conflating linguistic expressions with experiential motivations. I argued that non-actual motion is a multi-faceted phenomenon in experience that is grounded in at

least three different dynamic qualities of consciousness: (i) enactive perception, (ii) mental scanning and (iii) imagination (visualizing). The support for these was based on phenomenological analysis, providing the basis for re-interpreting and qualifying the analyses of Talmy (2000a), Langacker (2006) and Matlock (2004a). Through their quest for a unitary explanation, it was argued that these analyses lose sight of what is specific of the phenomenon in question. Given the multifaceted nature of motion in experience and language (i.e. in the life-world), the analysis of non-actual motion should likewise be pluralistic.

3. Empirical findings

Through the differentiation between bounded and unbounded translocation, and the corresponding semantic differentiation between the categories of Path and Direction we were able to investigate how languages treat this difference. The three languages on which the analysis focused, Swedish, French and Thai, all displayed the difference between Direction and Path. While the French speakers displayed a strong preference for keeping Manner and Path in separate clauses, they were less inclined to keep Direction separate from either Manner or Path. Thai ordered Motion-verbs systematically with Manner, Path and viewpoint-centered Direction verbs. As could be expected from a so-called S-language (Slobin 2004), the difference was not as clearly marked in Swedish. In sum, the findings supported the proposed taxonomy of motion within the domain of non-caused translocative motion situations. It is, however, a task for the future to continue testing out the additional non-translocative types of motion situations.

Semantically, we found that all three languages expressed all the proposed categories of Holistic Spatial Semantics, but with different form classes in different patterns of conflation and distribution. We also detected some language-specific constraints regarding which information can be combined. For instance, the French speakers preferred not to combine Manner-verbs with Path-information in prepositions, the Swedish participants used Path-verbs only rarely and most Path-verbs in the Thai data conflated with change in Region between INSIDE and OUTSIDE. Under particular circumstances, the typical French pattern was overcome and Manner-verbs combined with prepositions expressing BEGIN and END values for Path. From the perspective of Holistic Spatial Semantics, this means that the typical treatment of Romance languages as verb-framed (V-languages) should be rethought in relation to the contexts in which the expected pattern does not occur, and more detailed analyses of how additional form-classes contribute to express motion should be conducted.

For semantic typology, it is of great importance to take overt and covert patterns of conflation and distribution into account. The three languages were found to differ

not so much in *what* can be expressed, but *how* it is expressed. This is related to a recurrent question in typology: is it feasible to speak about language types? With respect to motion, Croft *et al*. (2010) suggest that we should speak about construction types instead. Beavers *et al*. (2009) claim that Talmy's typology is "an epiphenomenon" emergent from other, and presumably more basic, features of grammar. Are such claims valid? I conducted the present study on three languages that have been suggested to exemplify the three main types in motion typology (Slobin 2004). From a quantitative perspective, there is support for Talmy's suggestions of different languages having different "characteristic mode of expression", qualified with Slobin's proposal to treat serial-verb languages as equipollently-framed (E-languages). As shown in Chapter 5, the speakers of French, Swedish and Thai behaved differently and generally followed the predicted patterns of verb, satellite- and equipollent-framing, respectively. That is, the speakers were found to exhibit (aspects of) different "rhetorical styles": French speakers focused on Path, expressed in verbs and prepositions, Swedish speakers on Manner in the main verb and Path in adverbs and prepositions, whereas the Thai participants typically expressed Manner, Path and (viewpoint-centered) Direction in serial-verb constructions. However, this is not to say that these patterns are set in stone. French has a strong preference against combining Manner-verbs with Path-associates in the same clause, but as pointed out above, not on all occasions. Such patterns, together with the unclear status of languages such as Thai, has led some, for instance Slobin (2006) and Ibarretxte-Antuñano (2009), to consider languages as ordered on continua of Path and Manner salience, rather than belonging to discrete types. The risk with a too quantitatively driven approach is, however, that we only get a picture of patterns without including the semantic domain in its entirety. That is, what people typically say does not straightforwardly reflect what can be said in a given language. Methodologically, this implies that motion typology should be investigated both through native-speaker intuition and through elicitation-based studies such as those described in this book.

The second empirical contribution of phenomenological and experiential analyses concerned the separation between different possible motivations for expressions of non-actual motion, such as *The road runs through the tunnel*. A set of pictures was carefully designed to systematically differentiate between them. It was found that Swedish, French and Thai speakers were most prone to use non-actual motion descriptions for stimuli from a first-person perspective when the represented figures afforded human translocation, supporting the role of enactive perception as motivating the use of non-actual motion sentences.

As with actual motion, speakers of Swedish, French and Thai differed in how they expressed non-actual motion. To a large extent, such sentences were found to follow the same patterns as for expressing actual motion, but with qualitative Manner-information demoted in favor of focus on Path and state-transition. To the extent that Manner-verbs occurred, they were always potentially translocative and

bleached. This held across the board for Swedish and French speakers, but not for the Thai participants where Figures associated with slow and fast travel elicited Manner-verbs expressing corresponding velocities. That is, *doen* ('walk') was used for trails and paths, but *wîng* ('run') for highways. Apart from this very interesting observation, the Thai participants generally used fewer Motion-verbs per clause than for descriptions of actual motion. These findings suggest that there is a close bond between actual motion and non-actual motion in language. In other words, motion-related experiences contribute to semantics but that these experiences adapt to language-specific conventions. At a more general level, the interplay between motivating experiences and conventional language is what Zlatev, Blomberg and Magnusson (2012) call *language-consciousness interactionism*. This notion is used to convey the idea that while linguistic meaning is ultimately dependent on conscious speakers who constantly (re)create language, this is far from unconstrained, and language in return affects experience through its own principles, one of which is conventionality. As was argued in Chapter 2, the significations of linguistic forms are sufficiently general and schematic to cover ranges of designations. Language can, and will, therefore unite and bring together that which is distinct and separate in experience. On the one hand, it does so in the name of transmission, communication and iteration of meaning. On the other hand, it also follows that language must bury and hide – in a word sediment – its founding motivations.

4. "To begin again…"?

All things come to an end. With a scientific book, it progresses towards a goal and a conclusion. However, this goal – the end of the line – may also be seen as an opportunity for new beginnings. With this book, I hope to have not only provided answers, but also to have opened up for new departures. On such a future journey we should bring the following questions onboard.

All types of motion situations recognized by the taxonomy should be further tested on a balanced sample of typologically, areally and genealogically diverse languages. This would involve an interplay between empirical-typological questions and conceptual refinements. Typologically, to what extent would a survey of motion situations suggest additional refinement of the motion typology? Would languages cluster similarly for all kinds of motion situations or would we be required to speak of different typologies for different kinds of motion? In this regard, the most important question is to extend the study of non-translocative motion. With respect to translocative motion, it will be interesting to systematically include different kinds of boundaries and also motion along the vertical axis. With these questions investigated, would the experiential analysis of motion situations require conceptual adaptation and elaboration?

With respect to non-actual motion, the field is even more open. The intriguing but often simplified analysis of metaphorical language in cognitive linguistics requires even more attention, empirically, theoretically and conceptually. This work would require an extended treatment of other situations where motion expressions are used. How would they be treated from the point of view of non-actual motion? Are the experiential motivations discussed in Chapter 6, perhaps in a modified form, applicable to other kinds of non-actual motion as well? A fully-fledged theory of non-actual motion in language is yet to take form. What type of expressions are instances of non-actual motion and what further classifications are required? Non-actual motion sentences were defined as sentences that do not express actual motion. This was a deliberately general definition of the subject matter. The main discussion concerned a very specific type, namely motion expressions to describe static extensions in space. However, there are many other types of situations where motion expressions are used. Would it be possible to subsume them under the concept of non-actual motion? If so, what types of distinctions would be required within this concept?

As with actual motion, these conceptual and theoretical questions interact with further empirical exploration. The most immediate question for empirical research is to elicit descriptions of non-linear entities in different languages. With such material, it would be possible to elicit more elaborate motion descriptions involving manner-verbs that, *ex hypothesi*, would require more imagination of motion. At the other end of the spectrum are sentences expressing non-actual Path, without a Motion-verb. Is, and if so how, non-actual motion expressed in languages such as Yucatec Maya and Jaminjung where motion is semantically demoted in translocative situations? With more languages and a material that includes non-linear objects, the implicational hierarchy proposed in Chapter 7 could be tested, and possibly elaborated.

With these questions ahead of us, the end of this journey starts a new one.

Bibliography

Akita, K. (2013). Constraints on the semantic extension of onomatopoeia. *Public Journal of Semiotics 5*(1): p. 21-37.

Amagawa, T. (1997). Subjective motion in English and Japanese: A case study of *run* and *hashiru*. *Tsukuba English Studies 16*: p. 33-50.

Aske, J. (1989). Path predicates in English and Spanish: A closer look. *Berkeley Linguistic Society Papers 15*: p. 1-14.

Austin, J. L. (1962). *How to do Things with Words: The William James Lectures delivered at Harvard University in 1955*. Oxford: Clarendon Press.

Bally, C. (1932). *Linguistique générale et linguistique française*. Paris: Vendôme.

Barsalou, L. W. (2009). Simulation, situated conceptualization and prediction. *Philosophical Transactions of the Royal Society of London, Biological Sciences* 364: p. 1281–1289.

Beavers, J., Levin, B. and Tham, S.W. (2010). The typology of motion expressions revisited. *Journal of Linguistics 46*: p. 331-377.

Benveniste, È. (1971). *Problems in General Linguistics*. (Trans. M. E. Beek). Coral Gables: University of Miami Press. Original work published 1966 as *Problèmes de linguistique générale*.

Bergen, B. K., Lindsay, S., Matlock, T. and Narayanan, S. (2007). Spatial and linguistic aspects of visual imagery in sentence comprehension. *Cognitive Science 31*: p. 733-764.

Berlin, B. and Kay, P. (1969). *Basic Color Terms: Their Universality and Evolution*. Berkeley: University of California Press.

Berthele, R. (2013). Disentangling manner and path. Evidence from varieties of German and Romance. In J. Goschler and A. Stefanowitsch (eds.), *Variation and Change in the Encoding of Motion Events* (pp. 55-75). Amsterdam: John Benjamins.

Blomberg, J. and Zlatev, J. (2009). Linguistic relativity, mediation and the categorization of motion. In J. Zlatev, M. Andrén, M. Johansson Falck and C. Lundmark (eds.), *Studies in Language and Cognition* (pp. 46-61). Newcastle upon Tyne: Cambridge Scholars Publishing.

Blomberg, J. and Zlatev, J. (2013). Actual and non-actual motion: Why experientialist semantics needs phenomenology (and vice versa). *Phenomenology and the Cognitive Sciences*: doi: 10.1007/s11097-013-9299-x.

Bohnemeyer, J. (2010). The language-specificity of conceptual structure: path, fictive motion, and time relations. In B. Malt and P. Wolff (eds.), *Words and the Mind: How Words Capture Human Experience* (pp. 111-137). Oxford: Oxford University Press.

Bohnemeyer, J. (2011). Spatial frames of reference in Yucatec: Referential promiscuity and task-specificity. *Language Sciences 33*(6): p. 892-914.

Bohnemeyer, J., Eisenbeiss, S. and Narahimsan, B. (2006). Ways to go: Methodological considerations in Whorfian studies on motion events. *Essex Research Reports in Linguistics 50*: p. 1-20.

Bohnemeyer, J., Enfield, N., Essegbey, J., Ibarretxe-Antuñano, I., Kita, S., Lupke, F. and Ameka, F. (2007). Principles of event segmentation in language: The case of motion events. *Language 83*(3): p. 495-532.

Bohnemeyer, J. and Stolz, C. (2006). Spatial reference in Yukatek Maya: A survey. In S.C. Levinson and D.P. Wilkins (eds.) *Grammars of Space: Explorations in Cognitive Diversity* (pp. 273-310). Cambridge: Cambridge University Press.

Brandt, L. (2009). Subjectivity in the act of representing: The case for subjective motion and change. *Phenomenology and the Cognitive Sciences 8*(4): p. 573-601.

Brandt, L. (2013). *The Communicative Mind: A Linguistic Exploration of Conceptual Integration and Meaning Construction*. Newcastle upon Tyne: Cambridge Scholars Publishing.

Bretones, C., Cristóbal, M., and Ibarretxe-Antuñano, I. (2001). The construction *salir-de* in Spanish. How Spanish speakers conceptualise exiting events. Paper presented at the *First Construction Grammar Conference*.

Brugman, C. (1988). *The Story of Over: Polysemy, Semantics and the Structure of the Lexicon*. New York: Garland Press.

Bühler, K. (1990). *Theory of Language: The Representational Function of Language*. (Trans. D. Fraser Goodwin). Amsterdam: John Benjamins. Original work published 1934 as *Sprachtheorie*.

Bundgaard, P. A. (2010). Husserl and language. In D. Schmicking and S. Gallagher (eds.), *Handbook of Phenomenology and Cognitive Science* (pp. 368–399). Dortrecht: Springer.

Burenhult, N. (2008). Spatial coordinate systems in demonstrative meaning. *Linguistic Typology 12*: p. 99-142.

Chen, L. and Guo, J. S. (2008). Motion events in Chinese novels: Evidence for an equipollently-framed language. *Journal of Pragmatics 41*: p: 1749-1766.

Choi, S. and Bowerman, M. (1991). Learning to express motion events in English and Korean: The influence of language-specific lexicalization patterns. *Cognition 41*: p. 83–121.

Chomsky, N. (1965). *Aspects of the Theory of Syntax*. Cambridge: MIT Press.

Clark, H. H. (1996). *Using Language*. Cambridge: Cambridge University Press.

Coşeriu, E. (1985). Linguistic competence: What is it really? *The Modern Language Review 80*(4): p. xxv-xxxv.

Coşeriu, E. (2000). Structural semantics and cognitive semantics. *Logos and Language 1*(1): p. 19-43.

Croft, W. (2003). *Typology and Universals*. Cambridge: Cambridge University Press.

Croft, W., Barðdal, J., Hollmann, W., Sotirova, V., and Taoka, C. (2010). Revising Talmy's typological classification of complex events. In H. Boas (eds.), *Contrastive Construction Grammar* (pp. 201-235). Amsterdam: John Benjamins.

De Saussure, F. (1959). *Course in General Linguistics*. (Trans. W. Baskin) New York, Philosophical Library. Original work published 1916 as *Course de linguistique générale* (edited by C. Bally and A. Sechehaye).

Demi, S. (2009). *The Geometry of Fictive Motion and Location in English and Italian*. Ph.D. Disseration, Pisa University.

Dennet, D. C. (2003). Who's on first? Heterophenomenology explained. *Journal of Consciousness Studies 10*(9-10): p. 19-30.

Evans, N. (2010). *Dying Words: Endangered Languages and What They Have to Tell Us*. Singapore: Wiley-Blackwell.

Fillmore, C. J. (1997). *Lectures on Deixis*. Stanford: CLSI Publications.

Fortis, J.M., Grinevald, C., Kopecka, A., and Vittrant, A. (2011). L'expression de la trajectoire: perspectives typologiques. *Les Cahiers de Faits de Langues 3*: p. 33-41.

Frege, G. (1984). On sense and reference. In B. McGuiness (ed.), *Gottlob Frege: Collected Papers on Mathematics, Logic, and Philosophy*. (pp. 157-177). Oxford: Basil Blackwell. Original work published 1892 as Über Sinn und Bedeutung, *Zeitschrift für Philosophie und philosophische Kritik C*: p. 25–50.

Gallagher, S. (2007). Logical and phenomenological arguments against simulation theory. In D. Hutto and M. Ratcliffe (eds.), *Folk Psychology Re-assessed* (pp. 63-78). Dordrecht: Springer.

Gallagher, S. and Zahavi, D. (2008). *The Phenomenological Mind. An Introduction to Philosophy of Mind and Cognitive science*. London: Routledge.

Gibson, J. J. (1977). The theory of affordances. In R. Shaw and J. Bransford (eds.), *Perceiving, Acting, and Knowing* (pp. 127-143). Hoboken: John Wiley & Sons Inc.

Gibson, J. J. (1979). *The Ecological Approach to Visual Perception*. Boston: Houghton Mifflin.

Gibson, J.J. (1982). *Reasons for Realism: Selected Essays of James J. Gibson*. Hillsdale: Lawrence Erlbaum.

Greenberg, J. (1963). *Universals of Language*. Cambridge: Cambridge University Press.

Gurwitsch, A. (1964). *The Field of Consciousness*. Pittsburgh: Duquesne University Press. Original work published 1957 as *Théorie du champ de la conscience*.

Haglund, J. and Blomberg, J. (2010). Meaning-Sharing Network. *Hortus Semiotics 6: Semiotics of Nature*. http://www.ut.ee/hortussemioticus/6_2010/haglund_blomberg.html. Retrieved 140325.

Heidegger, M. (1962). *Being and Time*. (Trans. J. Macquariie and E. Robinson). London: SCM Press. Original work 1927 published as *Sein und Zeit*.

Heine, B. and Kuteva, T. (2002). *World Lexicon of Grammaticalization*. Cambridge: Cambrdige University Press.

Hills, D. (2012). Metaphor. In E.N. Zalta (ed.), *The Stanford Encyclopedia of Philosophy*.

Hoffman, D. (2011). *Descriptions of Motion and Travel in Jaminjung and Kriol*. Ph.D. dissertation, University of Manchester.

Holenstein, E. (1976). *Roman Jakobson's Approach to Language: Phenomenological Structuralism*. Bloomington and London: Indiana University Press.

Husserl, E. (1970a). *The Crisis of European Sciences and Transcendental Phenomenology. An Introduction to Phenomenological Philosophy*. (Trans. D. Carr). Evanston: Northwestern University Press. Original work published 1936 as *Die Krisis der europäischen*

Wissenschaften und die transzendentale Phänomenologie: Eine Einleitung in die phänomenologische Philosophie.

Husserl, E. (1970b). *Origin of Geometry*. (Trans. D. Carr). In *The Crisis of European Sciences and Transcendental phenomenology. An Introduction to Phenomenological Philosophy*. Evanston: Northwestern University Press. Original work published 1936 as *Ursprung der Geometrie*.

Husserl, E. (1970c). *Logical Investigations*. (Trans. J. N. Findlay) London: Routledge and Paul Kegan. Original work published 1900/1901 as *Logische Untersuchungen*.

Husserl, E. (1975). *Experience and Judgement*. (Trans. J. S. Churchill and K. Ameriks) Evanston: Routledge. Original work published 1939 as *Erfahrung und Urteil*.

Husserl, E. (1982). *Ideas Pertaining to a Pure Phenomenology and to a Phenomenological Philosophy*. (Trans. F. Kersten) The Hague: Martinus Nijhoff Publishers. Original work published 1913 as *Ideen zu einer reinen Phänomenologie und phänomenologischen Philosophie. Erstes Buch: Allgemeine Einführung in die reine Phänomenologie*.

Husserl, E. (2005). Phantasy, Image Consciousness and Memory (1898-1925). Dortrecht: Springer. Original work published 1980 as *Phantasie, Bildbewusstsein, Errinnerung. Zur Phänomenologie der anschaulichen Vergegenwärtigungen. Texte aus dem Nachlass (1898-1925)*.

Iacobini, C. and Masini, F. (2006). The emergence of verb-particle constructions in Italian: locative and actional meanings. *Morphology 16*(2): p. 155-188.

Ibarretxe Antuñano, I. (2009). Path salience in motion events. In J. Guo, E. Lieven, N. Budwig, S. Erwin-Tripp, K. Nakamura and S. Őzçalişkan (eds.), *Crosslinguistic Approaches to the Psychology of Language: Research in the Tradition of Dan Isaac Slobin* (pp. 403-414). New York: Psychology Press.

Indrambarya, K. (1995). Are there prepositions in Thai? In M.J. Alves (ed.), *Papers from the Third Annual Meeting of the Southeast Asian Linguistics Society* (pp. 101-118). Tempe: Arizona State University, Program for Southeast Asian Studies.

Ishibashi, M., Kopecka, A. & Vuillermet, M. (2006). *Trajectoire: matériel visuel pour élicitation des données linguistiques*. Fédération de Recherche en Typologie et Universaux Linguistiques.

Itkonen, E. (2003). *What is Language? A Study in the Philosophy of Linguistics*. University of Turku: Publications in General Linguistics 8.

Itkonen, E. (2006). Three fallacies that recur in linguistic argumentation. In T. Haukioja (ed.), *Papers on Language Theory*, *University of Turku*: p. 122–126.

Itkonen, E. (2008a). The central role of normativity in language and linguistics. In J. Zlatev, T. Racine, C. Sinha and E. Itkonen. *The Shared Mind: Perspectives on Intersubjectivity* (pp. 279–305). Amsterdam, John Benjamins.

Itkonen, E. (2008b). Concerning the role of consciousness in linguistics. *Journal of Consciousness Studies 15*(6): p. 15-33.

Jack, A. I. and Roepstorff, A. (2003). Trusting the subject, Vol 1. The use of introspective evidence in cognitive science. *Journal of Consciousness Studies 10*(9-10).

Jackendoff, R. (1983). *Semantics and Cognition*. Cambridge: MIT Press.

Jackendoff, R. (1990). *Semantic Structures*. Cambridge: MIT Press.
Jackendoff, R. (1996). The architecture of the linguistic-spatial interface. In P. Bloom, M. Peterson, L. Nadel and M. Garrett (eds.), *Language and Space* (pp. 1-30). Cambridge: MIT Press.
Jaeger, T. F. (2008). Categorical data analysis: Away from ANOVAs (transformation or not) and towards Logit Mixed Models. *Journal of Memory and Language 59*(4): p. 434-446.
Jensen de López, K. (2002). *Baskets and Body-Parts: A Cross-cultural and Cross-linguistic Investigation of Children's Development of Spatial Cognition and Language*. Ph.D disseration, Aarhus University.
Kanchanawan, N. (2006). Romanization, transliteration and transcription for the globalization of the Thai language. *The Journal of the Royal Institute of Thailand 31*(3): p. 832-841.
Kemmel, S. (2010) *About Cognitive Linguistics: Historical Background*. Available at: http://www.cognitivelinguistics.org/cl.shtml. Retrieved 140326.
Kessakul, R. (2001). Two faces of linguistic encoding in Thai motion events: Evidence from Thai spoken narrative discourse compared with Japanese. In G. W. Thurgood (ed.), *Papers from the Ninth Annual Meeting of the Southeast Asian Linguistics Society* (pp. 73-90). Tempe: Arizona State University, Program for Southeast Asian Studies.
Kita, S. (1999). Japanese enter/exit verbs without motion semantics. *Studies in Language 23*(2): p. 307-330.
Koenig, J-P. and Muansuwan, N. (2000). How to end without ever finishing: Thai semi-perfectivity. *Journal of Semantics 17*: p. 147-184.
Lakoff, G. (1987). *Women, Fire and Dangerous things. What Categories Reveal about the Mind*. Chicago and London: University of Chicago Press.
Lakoff, G. and Johnson, M. (1980). *Metaphors we Live by*. Chicago and London: University of Chicago Press.
Lakoff, G. and Johnson, M. (1999). *Philosophy in the Flesh. The Embodied Mind and its Challenge to Western Thought*. New York: Basic Books.
Landau, B. and Jackendoff, R. (1993). What and where in spatial language and spatial cognition. *Behavioural and Brain Sciences 16*: p. 217–265.
Langacker, R. W. (1986). An introduction to cognitive grammar. *Cognitive Science 10*: p. 1-40.
Langacker, R. W. (1987). *Foundations of Cognitive Grammar*, *vol. 1: Theoretical Prerequisites*. Stanford: Stanford University Press.
Langacker, R. W. (1990). *Concept, Image, and Symbol: The Cognitive Basis of Grammar*. Berlin and New York: Mouton de Gruyter.
Langacker, R. W. (1996). A constraint on progressive generics. In A. Goldberg (ed.), *Conceptual Structure, Discourse and Language* (289-302). Stanford: CSLI Publications.
Langacker, R. W. (1999). Virtual reality. *Studies in the Linguistic Sciences 29*(2): p 77-103.
Langacker, R. W. (2001). Dynamicity in grammar. *Axiomathes 12*: p. 7-33.

Langacker, R. W. (2006). Subjectification, grammaticization, and conceptual archetypes. In A. Athanasiadou, C. Canakis and B. Cornille (eds.), *Subjectification: Various Paths to Subjectivity* (pp. 17-41). The Hague: Mouton de Gruyter.

Levelt, W. J. M. (1996). Perspective taking and ellipis in spatial description. In P. Bloom, M. Peterson, L. Nadel and M. Garrett (eds.), *Language and Space* (pp. 77-108). Cambridge: MIT Press.

Levinas, E. (1969). *Totality and Infinity: An Essay on Exteriority*. (Trans. A. Lingis). Pittsburgh: Duquesne University Press. Original work published 1961 as *Totalité et infini: Essai sur l'extériorité*.

Levinson, S. C. (1996). Frames of reference and Molyneux's question: Cross-linguistic evidence. In P. Bloom, M. Peterson, L. Nadel and M. Garrett (eds.), *Language and Space*. (pp. 109-169). Cambridge: MIT Press.

Levinson, S. C. (2003). *Space in Language and Cognition: Explorations in Cognitive Diversity*, Cambridge: Cambridge University Press.

Levinson, S. C. and Wilkins, D. P. (2006). *Grammars of Space: Explorations in Cognitive Diversity*. Cambridge: Cambridge University Press.

Lucy, J. A. (1992). *Language Diversity and Thought*. Cambridge: Cambridge University Press.

Malblanc, A. (1961). *Stylistique comparee francais et allemand*. Paris: Didier.

Matlock, T. (2004a). Fictive motion as cognitive simulation. *Memory & Cognition 32(8)*: p. 1389-1400.

Matlock, T. (2004b). The conceptual motivation of fictive motion. In G. Radden and K-U. Panther (eds.), *Studies in Linguistic Motivation* (pp. 221-248). Berlin: Mouton de Gruyter.

Matlock, T. (2010). Abstract motion is no longer abstract. *Language & Cognition 2*(2): p. 243-260.

Matsumoto, Y. (1996). Subjective motion in English and Japanese. *Cognitive Linguistics 7*(2): p. 183-226.

Matsumoto, Y. (2003). Typologies of lexicalization patterns and event integration: Clarifications and reformulations. In S. Chiba et al. (eds.), *Empirical and Theoretical Investigations into Language: A Festschrift for Masaru Kajita* (pp. 403-418). Tokyo: Kaitakusha.

Mayer, M. (1969). *Frog, where are you?* New York: Dial Books for Young Readers.

Merleau-Ponty, M. (1962). *Phenomenology of Perception*. New York: Humanities Press. Original work published 1946 as *Phénoménologie de la perception*.

Miller, G. A. and Johnson-Laird, P. (1976). *Language and Perception*. Cambridge: Belknap Press.

Moran, D. (2005). *Edmund Husserl: Founder of Phenomenology*. Cambridge, UK: Polity Press.

Naigles, L., Eisenberg, A. R., Kako, E.T., Highter, M. and McGraw, N. (1998). Speaking of motion: Verb use in English and Spanish. *Language and Cognitive Processes 13*: p. 521-549.

Noss, R. (1964). *Thai Reference Grammar*. Washington, D.C: Foreign Service Institute.

Overgaard, S. (2012). Visual perception and self-movement: Another look. In A. Foolen, U. M. Lüdtke, T. P. Racine and J. Zlatev (eds.), *Moving Ourselves – Moving Others: Motion and Emotion in Intersubjectivity, Consciousness, and Language* (pp. 81-103). Amsterdam: John Benjamins.

Pecher, D. and Zwaan, R. A. (2005). The role of perception and action in memory, language, and thinking. Grounding cognition. In D. Pecher and R. A. Zwaan (eds.), *The Role of Perception and Action in Memory, Language, and Thinking* (pp. 1-8). Cambridge: Cambridge University Press.

Pederson, E., Danziger, E., Wilkins, D., Levinson, S. C., Kita, S., and Senft, G. (1998). Semantic typology and spatial conceptualization. *Language 74*(3): p. 557-589.

Piaget, J., and Inhelder, B. (1956). *The Child's Conception of Space*. London: Routledge.

Pulvermüller, F. (2005). Brain mechanisms linking language and action. *Nature Reviews Neuroscience 6*(7): p. 576-582.

Regier, T. (1996). *The Human Semantic Potential: Spatial Language and Constrained Connectionism*. Cambridge: MIT Press.

Richardson, D. and Matlock, T. (2007). The integration of figurative language and static depictions: An eye movement study of fictive motion. *Cognition 102*(1): p. 129-138.

Ricœur, P. (1992). *Oneself as Another*. (Trans K. Blamey). Chicago and London, Chicago University Press. Original work published 1990 as *Soi-même comme un autre*.

Riemer, N. (2010). *Introducing Semantics*. Cambridge and New York: Cambridge University Press.

Rock, I. (1992). Comment on Asch and Witkin's ''Studies in Space Orientation II''. *Journal of Experimental Psychology 121*(4): p. 404-406.

Rojo, A. and Valenzuela, J. (2004). Fictive motion in English and Spanish. *International Journal of English Studies 3(2)*: p. 123-149.

Rojo, A. and Valenzuela, J. (2009). Fictive motion in Spanish: Travellable, non-travellable and path-related manner information. In J. Valenzuela, A. Rojo and C. Soriano (eds.), *Trends in Cognitive Linguistics: Theoretical and Applied Models* (pp. 221-239). Frankfurt am Main: Peter Lang.

Rosch, E. (1975). Cognitive representation of semantic categories. *Journal of Experimental Psychology 104*(3): p.192-223.

Ryle, G. (1949). *The Concept of Mind*. London: Hutchinson.

Sartre, J-P. (1956). *Being and Nothingness*. (Trans. H. Bernet). New York: Philosophical Library. Original work published 1943 as *L'être et le néant*.

Saunders, B. (1995). Disinterring basic color terms: A study in the mystique of cognitivism. *History of the Human Sciences 8(7)*: p. 19-38.

Schultze-Berndt, E. (2006). Sketch of a Jaminjung grammar of space. S. C. Levinson and D. P. Wilkins (eds.), *Grammars of Space: Explorations in Cognitive Diversity* (pp. 63-114). Cambridge: Cambridge University Press.

Schutz, A. (1967). The Phenomenology of the Social World. (Trans. G.Walsh and F. Lehnert). Evanston: Northwestern University Press. Original work published 1932 as *Der sinnhafte Aufbau der sozialen Welt: Eine Einleitung in die verstehenden Soziologie*

Schutz, A. and Luckmann, T. (1974). *The Structures of the Life-World*. Evanston: Northwestern University Press.

Seager, W. and Allen-Hermanson, S. (2013). Panpsychism. In E. N. Zalta (ed.), *The Stanford Encyclopedia of Philosophy*.

Sinha, C. and Kuteva, T. (1995). Distributed spatial semantics. *Nordic Journal of Linguistics 18*(2): p. 167-199.

Sjöström, S. (1990). *Spatial Relations - Towards a Theory of Spatial Verbs, Propositions and Pronomial Adverbs in Swedish*. Ph.D. dissertation, Göteborgs Universitet.

Slobin, D. I. (1996). From thought and language to thinking for speaking. In J. J Gumperz and S.C. Levinson (eds.), *Rethinking Linguistic Relativity* (pp. 70-96). Cambridge: Cambridge University Press.

Slobin, D. I. (2000). Verbalized events: A dynamic approach to linguistic relativity and determinism. In S. Niemeier and R. Dirven (eds.), *Evidence for Linguistic Relativity* (pp. 107-138). Amsterdam: John Benjamins.

Slobin, D. I. (2003). Language and thought online: Cognitive consequences of linguistic relativity. In D. Gentner and S. Goldin-Meadow (eds.), *Language in Mind: Advances in the Study of Language and Though*t (pp. 157-192). Cambridge: MIT Press.

Slobin, D. I. (2004). The many ways to search for a frog: linguistic typology and the expression of motion events. In S. Strömqvist and L. Verhoeven (eds.), *Relating Events in Narrative: Typological and Contextual Perspectives* (pp. 219-257). Mahway: Lawrence Erlbaum Associates.

Slobin, D. I. (2006). What makes Manner of Motion salient? Explorations in linguistic typology, discourse, and cognition. In M. Hickmann and S. Robert (eds.), *Space in Languages: Linguistic Systems and Cognitive Categories* (pp. 59-81). Amsterdam and Philadelphia: John Benjamins.

Slobin, D. I. and Hoiting, N. (1994). Reference to movement in spoken and signed languages: Typological considerations. *Proceedings of the Twentieth Annual Meeting of the Berkeley Linguistics Society* (pp. 487-505).

Sloetjes, H. and Wittenburg, P. (2008). Annotation by category – ELAN and ISO DCR. *Proceedings of the 6th International Conference on Language Resources and Evaluation*.

Sokolwski, R. (2000). *Introduction to Phenomenology*. Cambridge: Cambridge University Press.

Sonesson, G. (1989). *Pictorial Concepts: Inquiries into the Semiotic Heritage and its Relevance for the Analysis of the Visual World*. Lund: Aris/Lund University Press.

Sonesson, G. (2007). From the meaning of embodiment to the embodiment of meaning. In T. Zimke, J, Zlatv and R.M. Frank (eds.), *Body, Language and Mind. Vol 1. Embodiment* (pp. 85-128). Berlin and New York: Mouton de Gruyter.

Sonesson, G. (2010). Semiosis and the elusive final interpretant of understanding. *Semiotica 179:* p. 145-258.

Sonesson, G. (2011). The mind in the picture and the picture in the mind: A phenomenological approach to cognitive semiotics. *Lexia 07/08*: p. 167-182.

Sonesson, G. (2012). The foundation of cognitive semiotics in the phenomenology of signs and meanings. *Intellectica 58*: p. 207-239.

Steinbock, A. J. (1995). *Home and Beyond – Generative Phenomenology after Husserl*. Evanston: Northwestern University Press.

Stosic, D. and Sarda, L. (2009). The many ways to be located: The expression of fictive motion in French and Serbian. In M. Brala Vukovic and L. Gruic Grmusa (eds.), *Space and Time in Language and Literature* (pp. 39-60). Newcastle upon Tyne: Cambridge Scholars Publishing.

Svorou, S. (1994). *The Grammar of Space*. Amsterdam: John Benjamins.

Takahashi, K. (2001). *Expressions of Emanation Fictive Motion Events in Thai*. Ph.D. dissertation, Chulalongkorn University.

Talmy, L. (1975). Semantics and syntax of motion. In J. P. Kimball (ed.), *Syntax and Semantics* (pp. 181-238). New York: Academic Press.

Talmy, L. (1983). How language structures space. In J. H. L. Pick and L. P. Acredolo (eds.), *Spatial Orientation: Theory, Research, and Application* (pp. 225-282). New York: Plenum Press.

Talmy, L. (1985). Lexicalization patterns: Semantic structure in lexical forms. *Language Typology and Syntactic Description 3*: p. 57-149.

Talmy, L. (1988). Force dynamics in language and cognition. *Cognitive Science 12*(1): p. 49-100.

Talmy, L. (1991). Path to realization: A typology of event conflation In L. A. Sutton, C. Johnson and R. Shields (eds.), *Papers of the Seventeenth Annual Meeting of the Berkeley Linguistics Society* (pp. 480-520). Berkeley: Berkeley Linguistics Society.

Talmy, L. (2000a). *Toward a Cognitive Semantics, Vol. 1*. Cambridge: MIT Press.

Talmy, L. (2000b). *Toward a Cognitive Semantics, Vol. 2*. Cambridge: MIT Press.

Talmy, L. (2009). Main verb properties and equipollent framing. In J. Guo, E. Lieven, N. Budwig, S. Erwin-Tripp, K. Nakamura and S. Őzçalişkan (eds.), *Crosslinguistic Approaches to the Psychology of Language: Research in the Tradition of Dan Isaac Slobin* (pp. 389-402). New York: Psychology Press.

Tesnière, L. (1959). *Éléments de Syntaxe Structurale*. Paris: Klincksieck.

Thompson, E. (2001). *Between Ourselves: Second-person Issues in the Study of Consciousness*. Exeter: Imprint Academic. Originally published 2000 as *Journal of Consciousness Studies 8*(5-7).

Thompson, E. (2007). *Mind in Life: Biology, Phenomenology and the Sciences of the Mind*. London: Belknap Press.

Tyler, A. and Evans, V. (2001). Reconsidering Prepositional Polysemy Networks: The Case of Over. *Language 77(4)*: p. 724-765.

Vandeloise, C. (1991). *Spatial Prepositions. A Case Study from French*. (Trans. A.K.R. Bosch) Chicago and London: University of Chicago Press. Originally published 1986 as *L'espace en francais*.

Vendler, Z. (1957). Verbs and times. *The Philosophical Review 66*(2): p. 143-160.

Vinay, J-P. and Darbelnet, J. (1995). *Comparative Stylistics of French and English: A Methodology for Translation*. (Trans. J.C. Sager and M-J. Hamel). Amsterdam and

Philadelphia: John Benjamins. Original work 1958 published as *Stylistique comparée du français et de l'anglais*.

Wälchli, B. (2001). A typology of displacement (with special reference to Latvian). *Sprachtypologie & Universalienforchung 54*(3): p. 298-323.

Whorf, B. L. (1956). *Language, Thought, and Reality*. Cambridge: MIT Press.

Wierzbicka, A. (2008). Why there are no 'colour universals' in language and thought. *Journal of the Royal Anthropological Institute 14(2)*: p. 407-425.

Wittgenstein, L. (1953). *Philosophical Investigations*. (Trans. G.E.M. Anscombe) Oxford: Basil Blackwell.

Woelert, P. (2011). Human cognition, space, and the sedimentation of meaning. *Phenomenology and the Cognitive Sciences 10*(1): p. 113-137.

Xu, Z. (2013). An empirical study of motion expressions in Mandarin Chinese. *English Language and Literature Studies 3(*4): p. 53-68.

Zahavi, D. (2003). *Husserl's Phenomenology*. Stanford: Stanford University Press.

Zlatev, J. (1997). *Situated Embodiment: Studies in the Emergence of Spatial Meaning*. Stockholm: Gotab.

Zlatev, J. (2003). Holistic spatial semantics of Thai. In E. Casad and G. Palmer (eds.), *Cognitive Linguistics and Non-Indo-European Languages* (pp. 305-336). Berlin and New York: Mouton De Gruyter.

Zlatev, J. (2007). Spatial semantics. In D. Geeraerts and H. Cuyckens (eds.), *The Oxford Handbook of Cognitive Linguistics* (pp. 318-350). Oxford and New York: Oxford University Press.

Zlatev, J. (2008). The dependence of language on consciousness. *Journal of Consciousness Studies 15*(6)*:* p. 34-62.

Zlatev, J. and Blomberg, J. (2011). Fictive motion: Experiential motivations and typological constraints. Oral presentation at *SALC III*, Copenhagen.

Zlatev, J., Blomberg, J. and David, C. (2010). Translocation, language and the categorization of motion. V. Evans. and P. Chilton (eds.), *Language, Cognition, and Space: The State of the Art and New Directions* (pp. 389-418). London: Equinox.

Zlatev, J., Blomberg, J. and Magnusson, U. (2012). Metaphors and subjective experience: motion-emotion metaphors in English, Swedish, Bulgarian and Thai. In A. Foolen, U.M. Lüdtke, T.P. Racine and J. Zlatev (eds.), *Moving Ourselves—Moving Others: Motion and Emotion in Intersubjectivity, Consciousness, and Language* (pp. 423-450). Amsterdam: John Benjamins.

Zlatev, J. and Yangklang, P. (2004). A third way of travel: the place of Thai in motion-event typology. In S. Strömqvist and L. Verhoeven (eds.), *Relating Events in Narrative: Typological & Contextual perspective*s. (pp. 159-190). Mahway: Lawrence Ernbaum Associates.

Appendices

Appendix I

Classification of all scenes in *Trajectoire* according to the following five parameters and corresponding values:

- *Motion* (+Translocative, -Translocative, n/a)
- *Manner* (Walk, Marked, n/a)
- *Bounded* (Beginning, Middle, End, Place, n/a)
- Boundary-Crossing (Yes, No, n/a)
- *Perspective* (side, back, front, n/a)

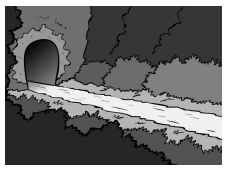
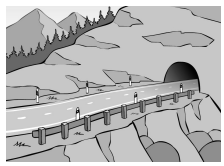
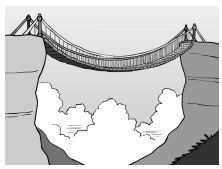
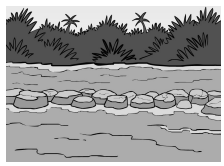
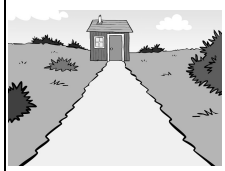
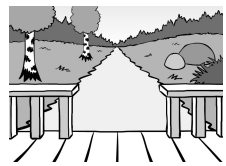
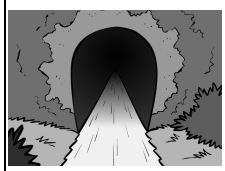
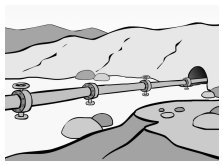
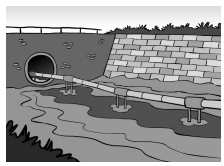
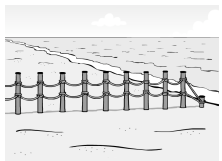
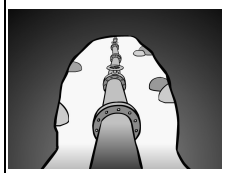
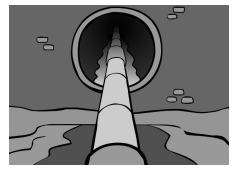
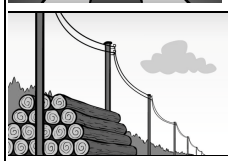
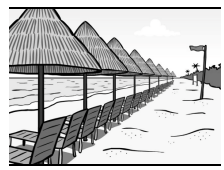
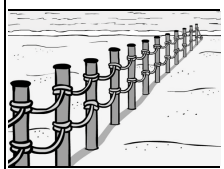
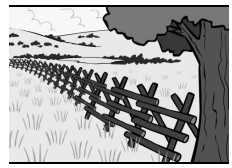
ID	Motion	Manner	Bounded	B-C	Persp
001_Filler_M_pick_fruit_back	-Trlv	n/a	Place	n/a	n/a
002_Filler_M_sleep_side	n/a	n/a	Place	n/a	n/a
003_Filler_M_read_book	n/a	n/a	Place	n/a	n/a
004_Filler_M_eat_banana	-Trlv	n/a	n/a	n/a	n/a
005_Filler_M_feed_ducks	-Trlv	n/a	Place	n/a	n/a
006_Filler_M_drink_water	-Trlv	n/a	Place	n/a	n/a
007_Filler_M_puton_jumper	-Trlv	n/a	Place	n/a	n/a
008_Filler_M_takeoff_jumper	-Trlv	n/a	Place	n/a	n/a
009_Filler_M_footpass_ball_to_F	Trlv	n/a	Beg, End	No	side
011_Filler_F_give_banana	Trlv	n/a	Beg, End	No	side
012_Filler_F_takeoff_cardigan	-Trlv	n/a	Place	n/a	n/a
014_Filler_F_puton_flipflop	-Trlv	n/a	Place	n/a	n/a
015_Filler_F_sitdown_blanket	-Trlv	n/a	Place	n/a	n/a
016_Filler_F_fold_cloth	-Trlv	n/a	Place	n/a	n/a
017_Filler_F_takeoff_flipflop	-Trlv	n/a	Place	n/a	n/a
018_Filler_F_footpass_ball_to_M	Trlv	n/a	Beg, End	No	side
019_Filler_F_comb_hair	-Trlv	n/a	n/a	n/a	n/a
020_Filler_F_plait_hair	-Trlv	n/a	n/a	n/a	n/a
021_Filler_F_pour_water	-Trlv	n/a	Place	n/a	n/a
022_Path_F_walk_down_into_cave_front	Trlv	Walk	End	Yes	front
023_Path_F_walk_outof_cave_front	Trlv	Walk	Beg	Yes	front

024_Path_F_walk_out_take_walk_into_cave_back	Trlv	Walk	Beg, Mid, End	Yes	back
025_Path_F_walk_outof_cave_back	Trlv	Walk	Beg	Yes	back
026_Path_M_walk_into_woods_back	Trlv	Walk	End	Yes	back
027_Path_F_walk_outof_woods_sideRL	Trlv	Walk	Beg	Yes	side
028_Path_C_walk_outof_cave_to_sea_sideLR	Trlv	Walk	Beg	Yes	side
029_Path_F_walk_outof_cave_up_stairs_back	Trlv	Walk	Beg	Yes	back
030_Path_C_walk_outof_cave_toward_C_sideLR	Trlv	Walk	Beg, End	Yes	side
031_Path_M_run_outof_sea_sideRL	Trlv	Marked	Beg	Yes	side
032_Path_F_walk_awayfrom_tree_front	Trlv	Walk	Beg	No	front
033_Path_F_run_awayfrom_tree_front	Trlv	Marked	Beg	No	front
034_Path_C_jump_from_stone_run_front	Trlv	Marked	Beg	No	front
035_Path_M_walk_awayfrom_F_front	Trlv	Walk	Beg	No	front
036_Path_M_walk_toward_F_back	Trlv	Walk	End	No	back
037_Path_M_run_up_from_river_back	Trlv	Marked	n/a	No	back
038_Path_F_walk_outof_field_sideRL	Trlv	Walk	Beg	Yes	side
039_Path_M_walk_behind_tree_sideLR	Trlv	Walk	Mid	No	side
040_Path_F_walk_front_tree_sideRL	Trlv	Walk	Mid	No	side
041_Path_3_walk_under_branch _behind_tree_front	Trlv	Walk	n/a	No	front
042_Path_C_run_behind_stone_sideLR	Trlv	Marked	Mid	No	side
043_Path_F_run_behind_tree_sideRL	Trlv	Marked	Mid	No	side
044_Path_F_run_front_tree-sideLR	Trlv	Marked	Mid	No	side
045_Path_3_ walk_across _bridge_back	Trlv	Walk	Mid	No	back
046_Path_M_walk_across_bridge_walk_front_back	Trlv	Walk	Mid	No	back
047_Path_F_ walk_across bridge_front_man sideLR	Trlv	Walk	Mid	No	side
048_Path_F_ walk_across _path_sideLR	Trlv	Walk	Beg, Mid	Yes	side
049_Path_M_ walk_across _path_sideRL	Trlv	Walk	Mid	No	side
050_Path_C_cross_water_sideRL	Trlv	Walk	Mid	No	side
051_Path_F_cross_field_front	Trlv	Walk	n/a	No	front
052_Path_F_cross_field_back	Trlv	Walk	n/a	No	back
053_Path_F_walk_into_cave_back	Trlv	Walk	End	Yes	back
054_Path_F_walk_into_cave_front	Trlv	Walk	End	Yes	front
055_Path_M_walk_out of_woods_front	Trlv	Walk	Beg	Yes	front
056_Path_M_walk_into_bush_back	Trlv	Walk	End	Yes	back
057_Path_F_walk_into_woods_sideLR	Trlv	Walk	End	Yes	side
058_Path_C_walk_into_cave_sideRL	Trlv	Walk	End	Yes	side
059_Path_C_run_into_sea_sideRL	Trlv	Marked	End	Yes	side

060_Path_M_walk_out_cave_pass_walk_into_ cave_side	Trlv	Walk	Beg, Mid, End	Yes	side
061_Path_F_walk_toward_tree_back	Trlv	Walk	End	No	back
062_Path_C_run_toward_stone_jump_on_stone_ RL	Trlv	Marked	End	No	side
063_Path_C_run_toward_stone_jump_over_ stone_front	trlv	Marked	Mid	No	front
064_Path_C_jump_from_cliff_into_water_sideLR	trlv	Marked	End	Yes	side
065_Path_C_walk_up_path_side_LR	trlv	Walk	n/a	No	side
066_Path_5_walk_toward_lake_across road back	trlv	Walk	Mid	No	back
067_Path_C_walk_down_path_front	trlv	Walk	n/a	No	front
068_Path_M_walk_front_people_into cave back	trlv	Walk	Mid, End	Yes	back
069_Path_F_walk_into_field_sideLR	trlv	Walk	End	Yes	side
070_Path_F_walk_up_stairs_front	trlv	Walk	Beg	No	front
071_Path_F_walk_up_stairs_back	trlv	Walk	Place	No	back
072_Path_M_jump_over_tronc_back	trlv	Marked	Mid	No	back
073_Path_F_walk_down_to_lake_back	trlv	Walk	End	No	back
074_Path_F_walk_up_from_lake_front	trlv	Walk	Beg	No	front
075_Path_C_jump_from_rock_to_rock_side	trlv	Marked	Beg, End	No	side
076_Path_C_walk_down_rock_front	trlv	Walk	n/a	No	front

Appendix II

All stimuli in the Non-actual motion study, ordered according to the two-by-design of Afford/Non-afford motion crossed with Perspective: First- and Third-person.

Third-person perspective	First-person perspective
Affords motion	**Affords motion**
     	     
Does not afford motion	**Does not afford motion**
     	     

The warm-up pictures

The control pictures