

Spatial Deixis in Chintang

Aspects of a Grammar of Space

vorgelegt von
Tyko Dirksmeyer

im Mai 2008

als wissenschaftliche Arbeit
zur Erlangung des akademischen Grades
“Magister Artium” (M.A.)
(Magisterarbeit)

am Institut für Linguistik
der Philologischen Fakultät
der Universität Leipzig

Gutachter:

Prof. Dr. Balthasar Bickel
Institut für Linguistik
Universität Leipzig
Beethovenstraße 15
04107 Leipzig

Prof. Dr. Bernard Comrie
Arbeitsbereich Linguistik
Max-Planck-Institut für evolutionäre Anthropologie
Deutscher Platz 6
04103 Leipzig

Contents

Acknowledgements	xi
Preface	xiii
1 Introduction	1
1.1 Theoretical context	1
1.2 Aims and scope of this study	3
1.3 Structure of the study	3
1.4 The Chintang language and its speakers	4
1.4.1 Previous work on Chintang	5
1.4.2 Grammatical basics	5
1.5 Methodology	7
1.5.1 Space game	8
1.5.2 Topological relations questionnaire	9
1.5.3 Demonstrative questionnaire	9
I Theoretical Foundations	11
2 Space through time and in language	13
2.1 Historical conceptions of space	13
2.2 Relativity research in Nijmegen	19
2.3 Inventory of primitives	20
2.4 Semantic typology of space in language	21
3 Deixis	27
4 Transposition	33
II Empirical Findings	37
5 Non-angular spatial specifications	39
5.1 General deictics	39
5.1.1 Spatial uses	39
5.1.2 Non-spatial uses	42
5.2 Toponymy	44
5.3 Topology	45

6	Frames of reference	53
6.1	Intrinsic	53
6.2	Absolute	54
6.2.1	Mapping operations	57
6.2.2	Altitudinal locative cases	62
6.2.3	The vertical dimension proper	63
6.3	Relative	65
7	Motion	67
8	Deictic transposition in Chintang and Belhare	69
8.1	Deictic transposition in Belhare	69
8.2	Chintang parallels	72
8.2.1	Altitudinal <i>a-</i> and <i>u-</i> terms	72
8.2.2	Altitudinal <i>ba-</i> terms	72
8.3	Parallel structures in Chintang and Belhare?	75
8.4	Evidence	76
8.5	Function of <i>a-</i> and <i>u-</i>	78
8.6	Selecting a different G	80
8.7	Transposition in Chintang?	81
9	Conclusions	83
9.1	Chintang and the larger picture	83
9.2	Outlook and perspectives for further research	85
	Appendix	91
A	Space Game	91
A.1	Subjects	92
A.2	Materials	92
A.2.1	Original task	92
A.2.2	Adaptation	93
A.3	Procedure	97
A.3.1	Original task	97
A.3.2	Adaptation	97
A.4	Instructions	98
B	Topological relations questionnaire	103
C	Demonstrative questionnaire	109
D	Summary in German	119
	References	121

List of Tables

1.1	Chintang independent personal pronouns and possessive prefixes	6
1.2	Some Chintang cases and their morphological markers	7
5.1	General demonstratives and some of their case inflections in Chintang	39
6.1	Spatial demonstratives in Chintang	56
6.2	Altitudinal locative case markers	62
7.1	Altitudinal deictic motion verbs	67
8.1	Case inflection of Belhare demonstratives	70
8.2	Altitudinal locative case inflection in Belhare	71
8.3	Spatial case paradigm for the altitudinal <i>ba</i> -terms	73
A.1	Instructions for the player acting as director in the space game	100
A.2	Instructions for the player acting as matcher in the space game	101

List of Figures

2.1	Major semantic subfields in spatial language	22
2.2	Frames of reference	24
5.1	Named parts of objects	48
5.2	Named parts of objects under rotation	50
6.1	Sectors projected off a Ground object	54
6.2	Absolute demonstrative roots	55
8.1	Reference from the deictic origin in Belhare	69
8.2	Reference with a transposed zero-point in Belhare	71
8.3	Applicability of altitudinal <i>ba</i> - terms	74
8.4	A possible description in Chintang	75
8.5	A closer look at some possible descriptions	77
8.6	Selecting a Ground other than the speaker	80
A.1	Route 1 of the space game	95
A.2	Route 2 of the space game	95
A.3	Route 3 of the space game	96
A.4	Consultants playing the space game	96
B.1	Scenes 1–12 of the topological relations picture series	103
B.2	Scenes 13–24 of the topological relations picture series	104
B.3	Scenes 25–36 of the topological relations picture series	105
B.4	Scenes 37–48 of the topological relations picture series	106
B.5	Scenes 49–60 of the topological relations picture series	107
B.6	Scenes 61–71 of the topological relations picture series	108

List of Abbreviations

A	most agent-like argument
ABL	ablative
ADD	additive focus
ADDR	addressee
ASSOC	associative
BLC	basic locative construction
COM	comitative
DEM	demonstrative
DIR	directive
DIST	distal
DU	dual
e	exclusive
EMPH	emphatic
ERG	ergative
F	Figure
G	Ground
GEN	genitive
HON	honorific
i	inclusive
IMP	imperative
INF	infinitive
INSTR	instrumental
IPFV	imperfective
LAT	lative
MED	mediative
N-	non-, e.g. NSG non-singular (i.e., dual or plural)
NTVZ	nativizer (adapts loanwords)

NP	noun phrase
P	most patient-like argument
PL	plural
PNG	Papua New Guinea
PRF	perfect
PRON	pronoun
PROX	proximal
PST	past
S	sole argument of an intransitive predicate
SG	singular
SPKR	speaker
TR	transposed
V	viewpoint of the observer
VDC	village development committee
X	origin of a coordinate system

Interlinear glosses comply with the Leipzig Glossing Rules.

Examples are referenced in the format *session.XXX*, with XXX representing the utterance number within the session.

Session names may serve as a hint to the text genre they are taken from: labels beginning with *ctn_spa* represent space game sessions (cf. p. 8), labels including the sequence *toprel* refer to the topological relations picture series (cf. p. 9), labels of the form *demq* refer to the demonstrative questionnaire (cf. p. 9), labels beginning with *CLLDCh* indicate sessions from the child language subcorpus (usually naturally situated discourse between children or children and adults; I have, however, only cited utterances from adult speakers here), and all other labels mark all other kinds of texts, mostly narratives, but also (prompted) discourse.

All files in the corpus, together with full session metadata, can be retrieved from the DoBeS archive at the Max Planck Institute for Psycholinguistics in Nijmegen (or will be available there as soon as translation, morphosyntactic analysis, interlinear glossing, media alignment and annotation are completed to an extent that allows submission).

Acknowledgements

The project reported in this thesis, small though it is, would not have been possible without the support of numerous individuals and institutions.

First and foremost, thanks are due to my native speaker consultants, Manoj Rai, Janaki Rai, Rikhi Maya Rai, Lash Kumari Rai, Ganesh Rai and Durga Kumari Rai, who readily shared knowledge of and intuitions about their language with me, and patiently answered my questions despite being busy with work and exams of their own.

Even where no explicit source is cited, the information owes its presentation to the Chintang and Puma Documentation Project (CPDP), funded by Volkswagenstiftung as part of the DoBeS program (Grant N^o II/79 092, 2004–2008, PI Balthasar Bickel). Financial support from the German Academic Exchange Service (DAAD), the University of Leipzig’s Philologische Fakultät, and from my parents made it possible for me to collect data in the field, for which I am deeply grateful.

I am also indebted to Dr. Asifa Majid and Erica Renckens at the Max Planck Institute for Psycholinguistics in Nijmegen for granting me access to the Language and Cognition Group’s stimuli archive and permission to use their unpublished materials. Years of hard work on the part of my academic teachers gave me the tools necessary to make some sense out of the literature and embark on my venture. One “extraordinary and plenipotentiary” educator, Prof. Novel Kishore Rai, introduced me to the Nepali language and provided untiring support in every matter thereafter. Laxmi Nath Shrestha taught me Nepali with an ease that is rare in post-childhood language acquisition. The administration of नेपाल र एशियाली अनुसन्धान केन्द्र (Centre for Nepalese and Asian Studies, CNAS) made their premises and facilities available for me to conduct the space game.

A big nonverbal धन्यवाद goes to the महर्जन (Maharjan) family for their unequalled Newari hospitality during my stays in Kirtipur, to बनिता महर्जन (Binita Maharjan) for her assistance in producing the Nepali translation of the space game instructions, and various family members, friends and acquaintances for their willingness to test the instructions.

I owe untold thanks to Luise Dorenbusch for persistently providing inspiration, motivation, food for thought and belly, and props that proved otherwise unobtainable. To Florian Hintz for making timely physical submission of this thesis possible despite my being thousands of kilometers away and immersed in bureaucracy of an entirely different kind. To Claudia Schmidt at the Max Planck Institute for Evolutionary Anthropology in Leipzig for taking over the back-office work in preparation of the Leipzig Spring School on Linguistic Diversity 2008 while I was in Nepal. And to the staff at the Embassy of the Federal Republic of Germany to the Republic of Uzbekistan for bearing my occasional absent-mindedness while I was thinking of space in Chintang instead of development cooperation, security policy, and other branches of diplomacy that I should have been concentrating on instead.

A silent word of gratitude may also be extended to Apple Computers, Inc. for producing equipment that can turn even harsh external conditions into a 21st century workplace, and a slightly louder one (because it does not carry–unintended–commercial overtones) to \LaTeX , more precisely Jonathan Kew’s Unicode-enabled \XeTeX , for supplying me with moments of puzzlement, triumph, and eventually relief and peace of mind.

It goes without saying that responsibility for all remaining shortcomings rests solely with myself.

Tyko Dirksmeyer
Tashkent, May 20, 2008

Preface

The idea for writing a thesis on this topic grew out of a class on “Contemporary research on linguistic relativity” taught by Balthasar Bickel at the University of Leipzig in the summer semester of 2006.

I found that my philosophical interests in language and cross-cultural conceptual schemes, which had already driven me to Ghana a long time ago, and my linguistic inclinations towards typologizing linguistic diversity as well as to documentation and description of endangered languages converge here. I was surprised to learn that some clever people had devised subtle methods which made bold claims of the camps on both sides of the “relativity divide” empirically testable, and that this grounding of philosophical and quasi-philosophical speculation in down-to-earth reality yielded astonishing insights into the nature of the human mind.

For my thesis, I had the ambition to write something that would not limit itself to mere synopsis and exegesis of pre-existing scholarly literature only in order to fulfill a university requirement and then catch dust in the department’s archive. I aimed at contributing to an ongoing language documentation project by analyzing original primary data in order to further comprehension of (one domain of) an underdescribed language. The danger with this is, however, that I cannot simply retreat to arguing against one established position by citing authorities advocating another established position, but that I have to take my own stance in relating original primary data to pre-established theoretical conceptions. In what follows,¹ I have taken care to assert only what I think is sufficiently warranted, based on thorough validation, and to indicate due skepticism where appropriate.² Nevertheless, I may be mistaken beyond remedy, and it is not unlikely that other observers will come up with better analyses of the data, or with more data suggesting different generalizations. However, inductive conclusions are necessarily tentative, and questioning previous tenets in order to exclude possible worlds and arrive at a fuller understanding of reality lies at the very heart of the scientific enterprise.

¹“below”, as it were, to use a spatial metaphor—the overall implication of reading a continuous text from top to bottom obviously unimpeded (for the purpose of linguistic encoding) by the occasional practical necessity of turning a page and continuing at the top of the next.

²Constraints on the time available for writing this thesis compel me to also report issues which I could not yet pursue in more detail.

LINGUISTICS is arguably the most hotly contested property in the academic realm. It is soaked with the blood of poets, theologians, philosophers, philologists, psychologists, biologists, and neurologists, along with whatever blood can be got out of grammarians.

Each discipline has at one time or another set its flag in the territory, knowing that its internal orthodoxies would be partly determined by whoever owned the language question.

(Rymer 1992: 48)

1 Introduction

1.1 Theoretical context

The broad context in which this study is to be situated is set by the question of linguistic relativity, or the so-called (Sapir-)Whorf hypothesis. In the much-cited formulation by Benjamin Lee Whorf, the central issue reads like this:

We dissect nature along lines laid down by our native language. The categories and types that we isolate from the world of phenomena we do not find there because they stare every observer in the face; on the contrary, the world is presented in a kaleidoscope flux of impressions which has to be organized by our minds—and this means largely by the linguistic systems of our minds.

We cut nature up, organize it into concepts, and ascribe significances as we do, largely because we are parties to an agreement to organize it in this way—an agreement that holds throughout our speech community and is codified in the patterns of our language [...]

[A]ll observers are not led by the same physical evidence to the same picture of the universe, unless their linguistic backgrounds are similar, or can in some way be calibrated.

(Whorf 1956: 213f.)

In a nutshell, I take these words to imply the following two theses (a version of the “relativity principle” demoted to the status of a hypothesis, and assuming a probabilistic correlation rather than absolute determination):

- (1) a. Different languages may encode the same state of the world in different ways determined by different semantic concepts, which may be unique to them and not shared by any other language.
- b. Linguistic categorization influences non-linguistic categorization for purposes of perception, sorting, recall, and other cognitive activities.

Whether or not linguistic relativity exists has been a topic of fierce debate ever since the principle was first proposed, and has been a subject of intensive scientific inquiry in recent years after the

question has been “re-thought” (Gumperz and Levinson 1996), reformulated, and tested empirically. While proponents of the principle in its strong form deny that there can ever be understanding across language (and culture) barriers, opponents emphasize the importance of general principles that guide human cognition as well as the formation of language(s) and grammar(s), which are so universal, so fundamental and so easily applied by children that they have been taken to be innate (among many others, cf. e.g. Chomsky 1967, 1972, 1986; Bickerton 1981, 1984). Cross-linguistic and cross-cultural investigation through approaches such as the one outlined below has unearthed a wide variety of viable strategies for apprehension and representation of the “outside” world, but has also shown that diversity is not unlimited and shaped by common basic elements of experience.

It is (1a) that underlies the venture reported in this thesis. Since linguistics is a science that has language not only as its object, but also as its medium of study, it is doubly susceptible to the linguistic categories available to analysis—and to their limitations. Therefore, the following statement by Albert Einstein, though originally made with physics in mind, applies to linguistics to an even greater degree:³

The eyes of the scientist are directed upon those phenomena which are accessible to observation, upon their apperception and conceptual formulation. In the attempt to achieve a conceptual formulation of the confusingly immense body of observational data, the scientist makes use of a whole arsenal of concepts which he imbibed practically with his mother’s milk; and seldom if ever is he aware of the eternally problematic character of his concepts. He uses this conceptual material, or, speaking more exactly, these conceptual tools of thought, as something obviously, immutably given; something having an objective value of truth which is hardly ever, and in any case not seriously, to be doubted. How could he do otherwise? How would the ascent of a mountain be possible, if the use of hands, legs, and tools had to be sanctioned step by step on the basis of the science of mechanics? And yet in the interests of science it is necessary over and over again to engage in the critique of these fundamental concepts, in order that we may not unconsciously be ruled by them. This becomes evident especially in those situations involving development of ideas in which the consistent use of the traditional fundamental concepts leads us to paradoxes difficult to resolve.

(Einstein 1954: xif.)

Thus, for our purposes, it is necessary to subject languages to close, unbiased scrutiny, as they might function in ways different from what the observer is used to, and it is equally necessary to scrutinize the tools used in this analysis, as adhering to established categories might make the observer blind to certain properties of his subject matter.

³I apologize for quoting such lengthy passages verbatim, but I could not have rephrased it in any better way.

1.2 Aims and scope of this study

Within this very broad framework, the thesis at hand is concerned with just one minute fraction in a narrowly delimited subfield, the description of the semantic system underlying the expressions in one domain of expression, “spatial deixis”, of one particular language, Chintang.

The initial motivation for studying the linguistic coding of space in Chintang was the suspicion that it might harbor grammaticalized deictic transposition in demonstratives akin to neighbouring Belhare (as described by Bickel 2001, see section 8.1 below). The research reported here set out to explore whether and to what extent such an operation can really be observed.

However, investigation of an operation of such conceptual complexity cannot be fruitful without at least a basic understanding of how space is generally encoded in the language under study. Hence, a substantial portion of this thesis is dedicated to describing prolegomena, general characteristics of the expression of space in Chintang, many of which are not deictic in the sense that their “interpretation in simple sentences makes essential reference to properties of the extralinguistic context of the utterance in which they occur” (Anderson and Keenan 1985: 259, see chapter 3). Furthermore, the very nature of the subject defies easy classification into Levinson’s (2003: 65f.) typology (cf. sections 2.3 and 2.4), as should become clear in the process.

The subtitle of this paper is indicative of the ambition of mine to deliver an impression of the “grammar of space” (cf. Levinson and Wilkins 2006) of Chintang. Given the resources available to me, this work cannot in the least claim to be comprehensive in any way, and can therefore at best present “aspects”: Chintang is a language for which initial documentation is still in progress, and many issues worthy of closer examination are not covered by the present approach and remain to be studied in more detail. However, to my knowledge, nothing like a systematic description of spatial expressions in Chintang has been undertaken so far. As the pursuit of questions relating to deixis and transposition calls for such a basic understanding, a sketch of some properties of a Chintang grammar of space will emerge as a byproduct, so to speak. Thus, besides addressing the question whether deictic transposition exists in Chintang, the present work aims at providing an introduction to the linguistic coding of space in Chintang, touching upon a few selected issues and consciously evading others, which each deserve further in-depth study. It should be read against the background of the transposition question, and strives to deliver no more than a somewhat “round” description for this purpose rather than an all-exhaustive analysis.

1.3 Structure of the study

The very general context outlined before (the relativity question, or its subpart (1a) which could be termed “semantic relativity”) will have to be restricted to examination of just one domain in

this context, the linguistic representation of space. Part I of this thesis will set and delimit the general framework: Some notes on historical conceptions of space, a justification why space should be worth studying with respect to linguistic relativity, and an introduction of the necessary theoretical concepts will be provided. Part II then zooms in, as it were, to the investigation of semantic structures in Chintang spatial expressions and their relation to similar formal and functional structures in Belhare, ultimately trying to accommodate the empirical data in the framework set by the macro-perspective, inspired by and modeled on the collection of descriptions in Levinson and Wilkins (2006), and as a conclusion striving to locate the semantic structures underlying coding of space in Chintang as a whole within the cross-linguistic typological framework.

Considering the resources at my disposal, the empirical inquiry will have to be narrowed down even further to cover only nominal elements expressing space and spatial relations. Verbs in Chintang are indubitably no less interesting and/or relevant to the study of space, but they are so vastly complex that their investigation is not only beyond the temporal horizon for this thesis, but also outside my current grasp of the language.

Before proceeding to the zooming process, then, it is time to briefly introduce its target, the Chintang language.

1.4 The Chintang language and its speakers

Chintang belongs to the Eastern branch of the Kiranti subfamily of Sino-Tibetan. More concretely, it finds itself classified in the Yakkha group, together with Athpare, Belhare, Chiling and Yakkha proper (cf. van Driem 1991, 2001; Opgenort 2004).⁴ It is currently spoken as a first language by about 3500 people, primarily in the Chintang VDC⁵ of Dhankuta district, Sagarmāthā zone, Eastern Nepāl region. The Chintang villages sit on a ridge in a very hilly terrain at altitudes between about 900 and 1300 meters above sea level. Primary source of subsistence is farming, the Chintang pride themselves on the fact that oranges from the region are famous all over Nepal (besides the dubious fame of being known everywhere as the place of the Chintang Massacre, a violent clash with the Nepalese government in the early second half of the 20th century). The language is being documented by the “Chintang and Puma Documentation Project” (CPDP), a joint effort of the linguistics departments at the University of Leipzig, Germany and at Tribhuvan University, Kathmandu, funded by Volkswagen Foundation as part of the DoBeS initiative.

⁴van Driem (2001) classifies Chintang as Central Kiranti, but subsequent research has left this position untenable.

⁵A “Village Development Committee” (VDC) is a municipal administrative unit. Rural Nepal currently comprises between 3915 and 4050 VDCs (depending on the source) in 75 districts, which form 14 administrative zones in 5 development regions. One VDC is, in turn, partitioned into 9 “wards”.

These days, all Chintang speakers are at least bilingual, Chintang is being rapidly supplanted by dominant languages of the area (neighboring Bantawa and Nepali, the national *lingua franca*). Widespread multilingualism always makes it difficult to identify a form as “genuinely Chintang”. The CPDP corpus records etymological and codeswitching information as far as possible. For the present purposes, however, in an attempt to make glosses not any more confusing than necessary, I will not give the source language line here, and will only point out instances of codeswitching where relevant to the respective issue in question.

1.4.1 Previous work on Chintang

Prior to the advent of a CPDP “advance party” in 2004, Chintang was not even perceived as a language in its own right. Speakers thought of themselves as speaking a variety of Athpare which turned out to be not mutually intelligible with “Athpare proper” (Novel Kishore Rai, personal communication). Given this recency of identification as a language, thorough documentation is underway, but published work does not yet abound, and has all proceeded from within CPDP so far. It includes a brief discussion of triplication and ideophones (Bickel *et al.* 2005a), suggesting that triplication in Chintang is a process separate from recursive reduplication (in contrast to instances of triplication in other languages which have been analyzed in this way), and that, unlike in other languages, it may operate on bases of various syntactic classes, and invariably yields an adverb as the outcome. There exists also an analysis of ritual language as constituting a lect distinct from other speech registers (Bickel *et al.* 2005b), and a recent paper demonstrating that prefixes in Chintang may be ordered freely, contravening customary criteria for establishing wordhood of a string of segments (Bickel *et al.* 2007).

Other than published written work, a descriptive grammar is being compiled as a PhD project (Paudyal in prep.), to which the reader is referred for grammatical information beyond the very rough sketch below, and Chintang has featured in various conference presentations and master’s theses, one of which (Poppitz 2008) was concerned with case and case composition, to which I shall make occasional reference.

Rai *et al.* (2005) have collected a few space-related lexical items for a conference presentation, but to my knowledge, no individual semantic domain in Chintang has received any systematic treatment so far. Thus, the present work is a first attempt into this direction.

1.4.2 Grammatical basics

Despite the notion of a “grammar of space”, the work at hand is largely concerned with lexical semantics. For this reason, a complete introduction of the intricate internal workings of Chintang is neither possible nor necessary here (for that, see Paudyal in prep.), and I will restrict myself to

giving just a very minimal inventory of necessities for the purpose at hand. Right now, it shall suffice to say that Chintang may be termed a polysynthetic language, for especially verbs tend to compound lexical stems, each with their own inflectional entourage. Preferred constituent order is SOV, as is common in the area, and noun phrases are equally head-final. Verbs inflect for subject and object in person and number (singular, dual and plural), various tenses and aspects, and affirmative and negative polarity—yielding paradigms with a good one thousand forms per verb.

As the pronominal system plays a role at various points in the discussion below, a short overview of relevant items is provided in Table 1.1.

	PRON	POSS
1 SG	<i>akka</i>	<i>a-</i>
2 SG	<i>hana</i>	<i>i-</i>
3 SG	<i>hungo</i> ⁶	<i>u-</i>
1 DU.i	<i>(k)anci</i>	<i>(k)anci-</i>
1 DU.e	<i>(k)anca</i>	<i>(k)anca-</i>
2 DU	<i>hanci</i>	<i>hanci-</i>
1 PL.i	<i>(k)ani</i>	<i>(k)ani-</i>
1 PL.e	<i>(k)ana</i>	<i>(k)ana-</i>
2 PL	<i>hani</i>	<i>hani-</i>
3 NSG	<i>hunce</i>	<i>hunci-</i>

Table 1.1: Chintang independent personal pronouns and possessive prefixes

On lexical nouns, Chintang marks at least 14 cases (some with markers stacked on top of each other, see Table 1.2 on the facing page) as well as non-obligatory number (usually only singular vs. non-singular, i.e., dual or plural as evident from verb inflection). Some of the cases have peculiar uses (what is glossed GEN here may in fact be analyzed as a more general enclitic dependent marker), or peculiarities behind their designation (ASSOC rather than COM, since it also covers relations such as ‘fighting with a rooster’ (also in the sense of ‘have a gamecock fight for oneself’), being with inanimate objects or in certain states, and it grammatically forms collectives rather than agents in company of someone), which will be pointed out along the way where relevant, as will all other additional grammar points. I am also not going to provide a detailed account of morphophonology—instead, the unanalyzed data in the glosses will be accompanied by an extra line with the underlying forms of the morphemes as identified by the CPDP team.

⁶cf. p. 42 for a discussion of the nature of this element

$-\emptyset$	ABS	absolutive
$-\eta a \sim -y a \sim -w a \sim -m a$	ERG	ergative
$-k o$	GEN	genitive
$-p e \eta \sim -b e \eta$	LOC	locative
$-b a$		
$-i$		
$-k b e-$		
$-\eta a \sim -y a \sim -w a \sim -m a$ $-l a m(m a)$	MED	mediative (‘by way of’, ‘via’)
$-p a t t i$	LAT	lative
$-p e \eta + -\eta a$ (plus alternants)	LOC+MED	ablative (‘from’)
$-n i \eta$	ASSOC	associative
$-\eta a \sim -y a \sim -w a \sim -m a$	INSTR	instrumental

Table 1.2: Some Chintang cases and their morphological markers⁷

1.5 Methodology

Although, thanks to CPDP, research on Chintang can rely on a substantial text corpus from a wide variety of genres (several hundred thousand words total, i.e., including language acquisition data), identifying exact semantic structures requires elicitation under controlled conditions. The data reported below were therefore collected by myself during two field trips to Nepal in September 2007 and February/March 2008. Owing to unfavorable political and meteorological conditions, on-site fieldwork in Chintang VDC proved impossible at and during the time available. Thus, my consultants were six Chintang speakers residing in Kathmandu and employed by the Chintang and Puma Documentation Project (CPDP) as informants on regular payroll or transcribers. Due to their involvement in the project, they knew a lot more about linguistics than “naïve” informants in Chintang VDC would have, independent of their educational background, which was otherwise fairly diverse (but included university-level education for all consultants).

⁷There are good arguments for analyzing some of the allomorph sets listed under different cases here as belonging to one and the same very abstract underlying case. Detailed analysis of grammatical markers, however, is not my current concern, so I shall adhere to the traditional terminology in the following.

Thus, they quickly got a general idea of what I was interested in,⁸ but at times it proved difficult to ascertain whether they really used their native linguistic intuition to respond to my questions, or rather snippets from Toolbox files and project conventions. I took care to design suitably innocent elicitation contexts and attempted to provoke targeted emotionalized group discussions among the speakers as to the acceptability and exact semantics of certain forms in order to get at more intuitive information, and all findings reported below have been checked for consistency with the corpus. Yet, whenever I speak of “the Chintang language” below, these peculiarities of data gathering need to be kept in mind.

Despite my being in Nepal for two four-week periods, the time available for actual elicitation was surprisingly short. One might assume that city conditions would facilitate access to speakers compared to a remote rural setting, but this proved not to be the case: Forced strikes and fuel shortage cut transport opportunities, consultants fell sick or were so immersed in work, studying or other business that they had little time to spare for answering my questions. Nonetheless, in addition to free elicitation in many small homeopathic doses to the extent possible, and to testing my hypotheses “in the wild” whenever a Chintang speaker was around, I strived to get a somewhat comprehensive idea of spatial expressions and therefor also used the following elicitation tools, all developed at the Language and Cognition Group (formerly Cognitive Anthropology Research Group) of the Max Planck Institute for Psycholinguistics in Nijmegen.

1.5.1 Space game

From the series of matching games designed to elicit various aspects of spatial representation, I selected one that focused on route descriptions in a model landscape, and amended it by certain modifications. Details are provided in appendix A. As the number of consultants I had available yielded only three pairs of players, and as each pair did only two to three modified routes, there is little sense in reporting concrete, hard results of overall coding preferences (as much as I would like to), because such a report would not stand any quantitative test. But the space game sessions, recorded on video, transcribed by native speakers and subsequently glossed and analyzed by myself in close consultation with speakers and other Chintang experts, do provide an invaluable qualitative source of data, which I used as a point of departure for gaining a general overview and as a guide for further free elicitation.

⁸A few imperfections due to the unfamiliar situation of the space game could not be avoided, as indicated where appropriate.

1.5.2 Topological relations questionnaire

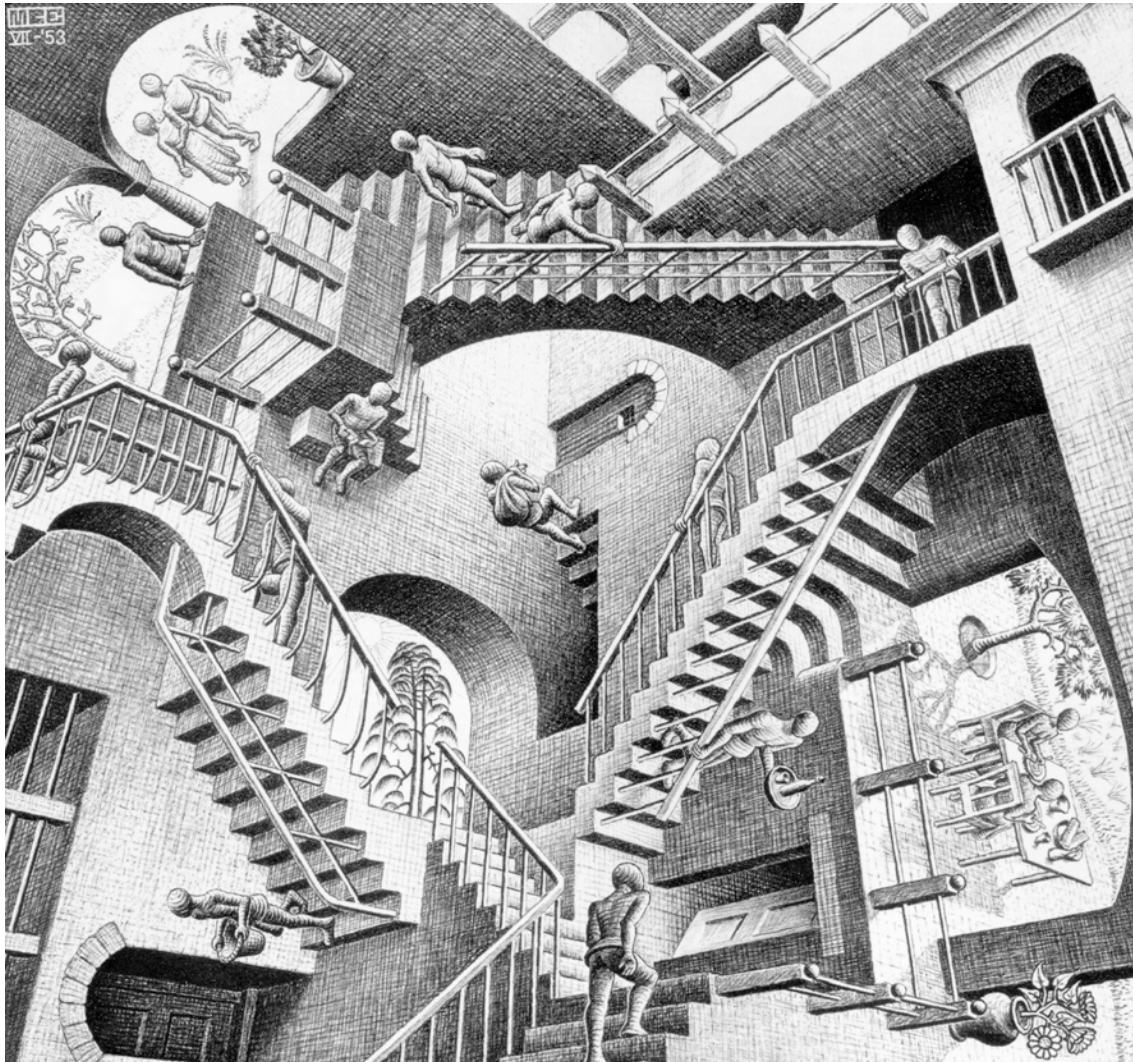
The topological relations questionnaire, originally designed by Melissa Bowerman, comprises 71 line drawings of scenes with objects in contiguity or near-coincidence. The task consists in describing the relation of one object (indicated by a pointing arrow) to the other (in English, one would do this by using a preposition appropriate to the type of relation between the objects, such as *in*, *on* or *at*), and it aims at uncovering the semantic distinctions and categorization patterns underlying the description. The pictures of the scenes are supplied in appendix B.

1.5.3 Demonstrative questionnaire

The demonstrative questionnaire, designed by David Wilkins, provides 25 scenes varying relations (spatial configuration, distance, visibility, accessibility/reachability, etc.) between speaker, addressee, environment and some object to be talked about, and aims at eliciting deictic contrasts in demonstratives (“this” and “that” in comparative perspective). As the relevant conditions are difficult to grasp abstractly, the scenes need to be acted out and then varied with respect to certain parameters. The demonstrative questionnaire is reproduced as appendix C.

Part I

Theoretical Foundations



M. C. Escher (1953): *Relativity*

2 Space through time and in language

The empirical base of this study on Chintang has been outlined in the previous sections. Before we proceed to the empirical data provided by that language, the two other elements in the title of this thesis demand some elaboration: “space” (this chapter) and “deixis” (chapter 3), in order to set the stage for the following appreciation of the Chintang data. A few words on the notion of “transposition” follow (chapter 4) to guide the investigation in section 8.1.

2.1 Historical conceptions of space

Space has enthralled human thinkers throughout all of recorded Western intellectual history. It took millenia, however, to arrive at a notion of space as abstract as the one used in contemporary physics. As with many other philosophical debates, discussion about the nature of space oscillated between poles that could roughly and on a level of meta-abstraction be termed “absolute” versus “relative” to some other entity in various respects, an issue that arose in various temporal guises and with various lines of inquiry into different aspects of the subject. Of course, such a gross simplification cannot do justice to the many ideas that were put forward over the centuries, but a detailed account of philosophical evolution is not the focus of this thesis (for that, see e.g. Casey 1998 and Jammer 1954, to whom much of this section is owed). Nonetheless, a short excursus into thinking and talking about space seems in order, not least because many strands of philosophical reasoning have been inspired by the way concepts are enshrined in language. Thus, a bit of history of ideas may serve as background to the following empirical exploration of one minute fraction of this large topic, and the question of “relative” vs. “absolute” space may serve as the handrail for such a tour of history.

Space has the curious property of being everywhere and yet nowhere. As Thomas Hobbes has put it: “No man therefore can conceive anything, but he must conceive it in some place, and endued with some determinate magnitude.” (*Leviathan*, ch. 3, § 12) The remaining question is, then: Of what kind is that “place”? In other words: Every material object is located in space, but that location itself is not graspable, making space an ideal subject of philosophical speculation. The formulation from *Leviathan* is indicative of another general observation, namely that before pondering the question of the nature of space in general and in the very abstract, contemplation usually set out from the notion of the place of some concrete object:

Now as to the concept of space, it seems that this was preceded by the psychologically simpler concept of place. Place is first of all a (small) portion of the earth's surface identified by a name. The thing whose "place" is being specified is a "material object" or body.

(Einstein 1954: xiii)

This has been viewed as a general trait of naïve reasoning which ultimately finds a reflex also in language, implying that "most languages probably have locutions for 'place' (i.e., the location where things are or belong), but few have expressions for 'space'" (Levinson 2003: 6) as the abstract, general concept of the all-encompassing three-dimensional surroundings that the English word *space* evokes.

In Pre-Socratic Greek thought, various ideas were already on the market as to what the nature of space is. The schools of Parmenides and Melissus held that space had material substance (and is therefore "relative" to matter), for it is extended, and as such cannot consist of nothing, as nothing cannot have extent (an idea which recurred much later in Descartes' distinction between *res cogitans* and *res extensa*). Opposition came from Epicurean atomists, who argued that material entities are finite, whereas space has to be an infinite void (or "absolute" in our terms), because irrespective of how large one conceives of the extent of space, it is always possible to throw a javelin beyond it. Zeno sided with the Epicureans in opposing a materialist conception: If everything is in a place, and the place is a material entity, then the place itself needs to be in a place like anything else—so what should the place of the place be, if not something absolute, immaterial?

Plato (in his cosmological dialogue *Timaeus*), also propounded a material view of space: As the demiurge had crafted the universe from the four elements, "empty" space still consisted of air—a complete vacuum being alien to ancient Greek everyday experience. Plato's student Aristotle, in his *Physics* (*Physics* 4.1; 208a27–209a31), pioneered "frame of reference" research in a way, as he recognized that directions can be set both relatively with regard to a human observer and the orientation of the four sides of his body, or absolutely, anchored in terms of the cosmos as a whole, with 'up' towards the celestial spheres and 'down' towards the center of the earth. He again emphasized the importance of places as relative to particular objects, but tried to overcome the limitations of materialism by viewing the 'place' of an object not as its displacement volume by some other substance such as air, but by the adjacent or inner boundary of the matter containing the object. He thus denied the existence of "empty" space, as all places were ultimately nested in the places of larger objects, up to the final sphere delimited by the boundaries of the universe. In this way, his conception highlighted the importance of a point of reference or Ground (see section 2.3 below): Consider a boat at anchor in a flowing river. It is contained by water, and if this defines its place, the place is always changing, because the surrounding matter, the water, constantly changes. This defies our intuition that the boat stays in the same place, so Aristotle

disallowed moving entities for definition of places and stated that it is the boundaries of the next stationary containing object that one should turn to in order to determine the place of something contained, in this case: the riverbank.

Despite this conflict-prone pseudo-solution of the problem by stipulation, the material view of place dominated medieval thinking, as there was hardly any substantial criticism of the authority of “the Philosopher”, as Aristotle was simply and reverently called, even though the inconsistencies in his position were noted and discussed.

Only during the Renaissance, with Patritius, Giordano Bruno or Pierre Gassendi building on rediscovered ancient works that had been handed down in the Arabic and Jewish traditions, was space thought of again as an infinite, “absolute”, three-dimensional void. According to Einstein (1954: xiv), it was not until after the Renaissance and Descartes’ carefully setting apart the concrete (material) and the abstract (mental) that the apprehension of an abstract notion of space independent of the place or “box space” of individual material objects gained general currency. As one of the first, Gassendi drew a clear distinction between the two conceptions in his “*Syntagma philosophicum*” (published in 1658):

Two sorts of dimensions are to be distinguished, of which the first may be called corporeal and the second spatial. For example, the length, width and depth of some water contained in a vase would be corporeal; but the length, width, and depth that we would conceive as existing between the walls of the vase if the water and every other body were excluded from it would be spatial.

(cited after Brush 1972: 385)

Isaac Newton further elaborated the distinction between “absolute” and “relative” space. In his view, absolute space is constant, “immovable”, and bears no relation to anything external (Scholium to the *Principia*, § 2), but is inaccessible to our senses. Therefore we require relative space, defined by the places of objects and the relations between them, as a mere heuristic convenience for everyday life:

But because the parts of space cannot be seen, or distinguished from one another by our senses, therefore in their stead we use sensible measures of them. For from the positions and distances of things from any body considered as immovable, we define [definimus] all places; and then with respect to such places, we estimate all motions, considering bodies as transferred from some of those places into others. And so, instead of absolute places and motions, we use relative ones; and that without any inconvenience in common affairs; but in philosophical disquisitions, we ought to abstract from our senses, and consider things themselves, distinct from what are only sensible measures of them.

(Newton 1934: § 7)

Gottfried Wilhelm Leibniz rejected the notion of an imperceptible absolute space as unnecessary metaphysics for which there was no evidence, and had a fierce argument about this with Newton's protégé Samuel Clarke. Leibniz held that space is no more than the relations between objects with regard to each other, without reference to anything external, and that choosing one point of reference rather than another (as in the Aristotelian riverboat example) is just an arbitrary convention without any further significance. Relating objects with respect to other objects (in an intrinsic frame of reference, see section 2.4 and chapter 6 below) is in fact "reflected in much ordinary spatial language" (Levinson 2003: 8), particularly in familiar European languages, so that the Leibnizian relativistic conception may therefore be seen as a true predecessor of modern theories maintaining the relativity of space.

A strict opponent of viewing relativity as the whole story was Immanuel Kant, who connected the apprehension of space to his *Kategorien* (categories, Kant 1781), i.e., to a priori knowledge as a *Bedingung der Möglichkeit*, a necessary precondition for structuring experience and gaining any empirical insights at all, and as such far removed from being empirically attainable itself. He pointed out that there are some properties of spatial objects or regions (*Gegenden*) that cannot be explained in the framework of relative space alone, by no more than spatial relations of objects to each other (Kant 1768), and demonstrated his point on three-dimensional enantiomorphs (like left and right hands). Within each of such mirror-image objects, the corresponding parts bear the exact same relation to the rest of the object—the index finger of a left hand, for example, is spatially related to the thumb of the same hand in exactly the same way as the index finger of a right hand is related to the thumb of that right hand. If this was all that there is to it, then it should not be possible to decide whether one is dealing with a left or a right hand, as the two enantiomorphs would basically be identical. With identical objects, however, one would be able to perfectly align one with the other by rotation, and, abstracting away from material substance, to merge both shapes into one single instance of the same object, as it were. With hands and other enantiomorphs, this is obviously not possible, so Kant concluded that there has to be some property of the enantiomorphs which is responsible for the distinction between them and which cannot be captured within the confines of relative space. That property is direction or orientation, and it necessitates a framework larger and more abstract than the objects in question, namely absolute space.

While this aspect of Kant's work is still concerned with the nature of reality as such, the "epistemological turn" with its focus on the "relativity" of individual perception he helped to initiate with his *Critiques* in various fields of philosophy was paralleled by a (delayed) turn to perception and subjectivity in space research, despite Kant's demonstration of the overall importance of an abstract, absolute referential framework. As the Newtonian conception of absolute space slowly

fell into disfavor during the 19th century, subsequent thinkers have again emphasized the epistemologically privileged status of relative space, as in William James's squirrel example (analogous to Aristotle's riverboat): Imagine a squirrel climbing the trunk of a tree, and a man chasing it on the ground. Whichever way around the tree the man moves—the squirrel will move around the trunk in the same direction, so that man and squirrel always remain on opposite sides of the trunk. The man makes several attempts to move to the squirrel's side, but the squirrel moves to the opposite side at equal speed. The question is, then: "He goes round the tree, sure enough, and the squirrel is on the tree; but does he go round the squirrel?" (James 1907: 41)

James himself concludes that, in an absolute sense, the answer must be yes, but that humans prefer to think in the categories of their own (relative or intrinsic) experience, and hence the sensible ("pragmatic") answer should be no, as the man never gets to the back of the squirrel, and hence one would also not usually *say* that he goes "around" it. The relativistic or subjective attitude gained further currency in diverse branches of research dealing with individual subjects, from psychology to brain science, and culminated in positions like that of Poincaré, who asserted that "Absolute space is nonsense, and it is necessary for us to begin by referring space to a system of axes invariably bound to the body." (Poincaré 1946: 257) The conceptual priority of egocentric, anthropomorphic ideas of space is central to Cassirer (1923), and Piaget and Inhelder (1956) underline that egocentrism of spatial thinking is also ontogenetically prior to absolute conceptions and requires significant time and effort to overcome.

As indicated already by the wording of James, the epistemological turn was followed by what could be termed a "linguistic turn" (Rorty 1967) in space research as well. It inspired the idea that in order to elucidate the concepts behind space, one should look at their embodiment in ordinary language (cf. e.g. Bierwisch 1967; Jackendoff 1983). Miller and Johnson-Laird (1976) attempted to tie the perceptual and the linguistic strings together and arrive at a cross-disciplinary view of the conception of space, even though departing from perceptual psychology. They admit that cognitive theory should allow for both absolute and relative conceptions of space, but insist that "the perceptual space to be characterized by a theory of perception must be relative in character." (Miller and Johnson-Laird 1976: 58) They state that because percepts are constantly changing as we move through our environment, it is a conceptual, not a perceptual achievement that we assemble a mental representation of our surroundings. What remains stable in perception is the spatial relations between the fixed objects in our environment (their places, or Leibnizian relative space, so to speak), and it is only this that saves us from engulfment in a sea of ever-changing subjective impressions. Miller and Johnson-Laird's appreciation oscillates between subjective perceptual impressions and relative spatial relations between objects eventually leading to a somewhat absolute conceptual image of space, thus yielding a wild mixture of strands of theory that I was not able

to view as a halfway coherent system. They even reject Fillmore's (1971) claim that the coordinates of "perceptual space" are established by the vertical axis defined by gravity plus anatomic properties (front and back, bilateral symmetry) of the perceiver—while they grant that absolute anchoring in the perception of gravity may be possible, they deem the other, body-oriented coordinates difficult to establish because of the constantly changing orientation of the perceiver. Applying their hybrid approach to the expression of spatial relations in language, they arrive at the following conclusion:

The Newtonian conception of space as an infinite, continuous, stationary, three-dimensional box enables a speaker to label locations by their coordinate values as precisely as he might wish (given a point of origin). Needless to say, this way of labeling space is not the usual practice in everyday affairs. Ordinary languages are designed to deal with relativistic space; with space relative to objects that occupy it. Relativistic space provides three orthogonal coordinates, just as Newtonian space does, but no fixed units of angle or distance are involved, nor is there any need for coordinates to extend without limit in any direction.

(Miller and Johnson-Laird 1976: 380)

Despite their view being limited to well-known languages of European origin (which proves to be misguided in the face of evidence from a broader, world-wide perspective, see below), it reflects the standard mode of thinking in much of the cognitive sciences still today (cf. Jackendoff 1983; Landau and Jackendoff 1993; Li and Gleitman 2002). In short, the claim is that absolute space is not suited for everyday purposes, and hence finds no expression in ordinary language, as it plays no role in conceptualization. While absolute space may be useful for specialized purposes, the only viable kind of space to be used in everyday language and cognition is relative, and this, to introduce an added terminological twist, is an absolute universal. From semantic universalism of this type, it is but a small step to nativism, where even some semantic structures have been viewed as being so basic they might just as well be innate (cf. e.g. Bickerton 1981).

The debate between universalists and relativists (in terms of semantics now, not necessarily advocates of relative space) in the Whorfian tradition was a more or less metaphysical one for several decades, with the mainstream being oriented towards universalism and "generativism" in the wake of Chomsky (1957), but without any sound evidence to prove the point of either side. It was not until the early 1990s that methodological progress allowed the generation of testable hypotheses from the bold claims on both sides of the "relativity divide", and permitted subjection of these hypotheses to thorough empirical scrutiny by refined experimental methods (cf. e.g. the pioneering work of Lucy 1992). The question of linguistic relativity was subsequently "re-thought" (Gumperz and Levinson 1996) and became attractive as a subject of empirical scientific research beyond mere philosophical speculation.

2.2 Relativity research in Nijmegen

A prominent center of relativity research emerged in the form of the Language and Cognition Group (formerly Cognitive Anthropology Group, CARG) at the Max Planck Institute for Psycholinguistics in Nijmegen, The Netherlands. Space, or more precisely its representation in language and cognition, was chosen here as a prime domain of inquiry, for relativity, if it existed, was least expected in an area so basic to human existence, and so universally available to experience independent of other (environmental and cultural) factors. In fact, given the necessity to orient oneself in space in order to survive at all, some sort of representation of space must have been available to remote ancestors and distant relatives of *homo sapiens sapiens* long before language and culture came into existence. Thus, if linguistic coding in this domain revealed cross-cultural relativity, and if linguistic differences were paralleled by differences in cognition, this would provide a strong argument against universalism and innateness.

At CARG it was opined that only a detailed exploration of the representation of space in language and cognition in a wide variety of different languages and cultures could provide the empirical base necessary to assess universalist claims. Hence, subtle methods of investigating the semantics of language as well as aspects of linguistic and non-linguistic cognition were devised and applied at field sites around the globe and in highly diverse cultural settings. This research resulted in the insight that languages differ considerably in their coding even of a domain as basic as space, and that this linguistic diversity was paralleled not by a deterministic way of thinking as in the original Whorfian model, but by a statistical tendency to align certain non-linguistic modes of representation (categorization, memory etc.) with the structures found in language. It thus supports a modernized, non-dogmatic, maybe even “enlightened” version of Neo-Whorfianism, cf. Levinson (2003) for a summary of nearly one and a half decades of research on space in language and cognition, and Levinson and Wilkins (2006) for a collection of descriptions on how vastly different languages handle the same semantic domain.

Through their interdisciplinary approach, the Nijmegen group developed a conceptual framework and the theoretical tools to tackle the variety of systems of spatial representation they encountered across language(s) and cognition. The framework has become a *de facto* standard, and it is this line of research that I shall adopt for describing and analyzing the linguistic expression of space in Chintang, as I consider it to possess merits that competing frameworks lack:

First, the approach of Levinson *et al.* clarifies a lot of terminological confusion by providing a single, coherent, comprehensive set of labels for parameters that can accommodate all the distinctions made in various other frameworks before. It states explicit criteria for classification of representational systems, and while these may turn out to be not all unproblematic, they at least set a clear standard for researchers to agree on what they are talking about.

Second, it is designed from the very outset to be cross-linguistically viable, and it is based on the actual observed variation in the world's languages. It seeks to identify and explicate all relevant variables, the sources of potential variation, without a pre-established bias towards well-described languages, and it strives to avoid conflation of parameters that happen to be correlated in one language or another.

Third, it is a determinedly interdisciplinary enterprise, intended to be applicable to philosophical as well as psychological and linguistic inquiries into the subject matter. It looks at linguistic and cognitive representations of space to an equal measure and independently of each other, but through comparable methods, allowing a unified view of the data from both strands of investigation.

And finally, all inferences to general principles proceed from hard, systematically gathered empirical data beyond mere theoretical speculation, intuition and introspection, thus advancing research in this domain from the philosophical realm into that of exact science.

2.3 Inventory of primitives

According to the Nijmegen approach, in order to describe a semantic system governing the use of sets of linguistic expressions for spatial relations,⁹ the following primitives are necessary and provide potential sources of variation (Levinson 2003: 39ff.).¹⁰

Relating entities in space requires at least two objects: One that is to be located, and one that serves as a point of reference with respect to which the other object is located. The former may be called **Figure (F)**,¹¹ the latter **Ground (G)**, adopting terms from Gestalt psychology (Köhler 1929; Koffka 1935) taken up in the study spearheading modern comparative semantic analysis of spatial representation in language by Talmy (1983).¹² For an idealized description in terms of points rather than three-dimensional entities, the volumetric centers F_C and G_C of the Figure and the Ground may be substituted for the entire objects.

These elements need to be distinguished from the **viewpoint of the observer (V)**, which may, but need not, coincide with either F or G, and the viewpoint may or may not be that of the **speaker (ego)**.

⁹as well as parallel cognitive processes

¹⁰This is a comprehensive listing of primitives that proved relevant for describing the total diversity of systems (i.e., capturing any distinction any system makes) which the Language and Cognition Group encountered. An individual system may not require or distinguish the full set of primitives.

¹¹For disambiguation in the remainder of this thesis: The only formal marking of *Figure* in the sense of 'entity being located' shall be the capitalized initial to indicate the use of a technical term. *Figure* in the sense of 'illustration' shall, in addition, always be followed by an alphanumeric index referring to the illustration in question.

¹²These terms are equivalent to "Trajector" and "Landmark", "Theme" and "Relatum", or "Referent" and "Relatum" (and various others) in competing approaches.

As soon as the F and G objects in question are somewhat removed from each other in space and one wants to give a specific direction from G in which F is located, systems may provide **labeled angles** in a **coordinate system** in order to specify a “search domain” in which F is to be looked for if G is given. These angles (with labels such as *front*, *left* or *north*, for example) then denote sectors around the **origin (X)** of the coordinate system (which may or may not coincide with other points such as G or V). It is worth noting, however, that the angles need not necessarily form a fixed template of oppositions or require a coordinate system with orthogonal axes. As the labeled angles in the abstract coordinate system can in principle be aligned with the concrete surroundings of X in different ways, an **anchoring system** may serve to identify an **anchoring point (A)** and/or a **slope (SL)** through which the angles are locked into the environment, for example through a **landmark (L)**.

The following section includes illustrations of how the values of these primitive variables may be used to define types of spatial systems.

2.4 Semantic typology of space in language

Based on which of the above primitives are employed in what manner (in other words, how the values of the variables are set), the semantic domain of space may be divided into subdomains as indicated in Figure 2.1 on the next page. These subdomains can be thought of as representing different types of possible semantic systems underlying the answer to the question “Where is F?”.

The first relevant distinction is whether the F in question is moving or in a static location. As motion can only be broached in the present description of Chintang (chapter 7) for reasons outlined in section ?? above, it has been divided off here. With sound comparative data, one would traditionally expect at least descriptions of Source and Goal as well as Manner and Path (Talmy 1985, 2007) under this heading.

As for static location, Levinson’s (2003: 66) next major distinction is whether the description of the location of F employs a coordinate system with labeled angles or not. If it does not, one may further distinguish whether F is said to be located in a region or at a particular place. The former case comprises **deixis** (in the narrow Levinsonian understanding, see chapter 3), the way of locating F with respect to a G which is usually identical to ego (the “deictic center”) as either *here*, in the region near G=ego, or *there*, in a region away from G=ego, but provided only in radial terms without angular specification, and hence so imprecise that it often requires an accompanying gesture for identification.

A more specific way of relating an F to a G is by referring to G with a unique designation, a place-name. One could, for example, say *F is at Pearl Harbor*, and if the addressee knows the name and

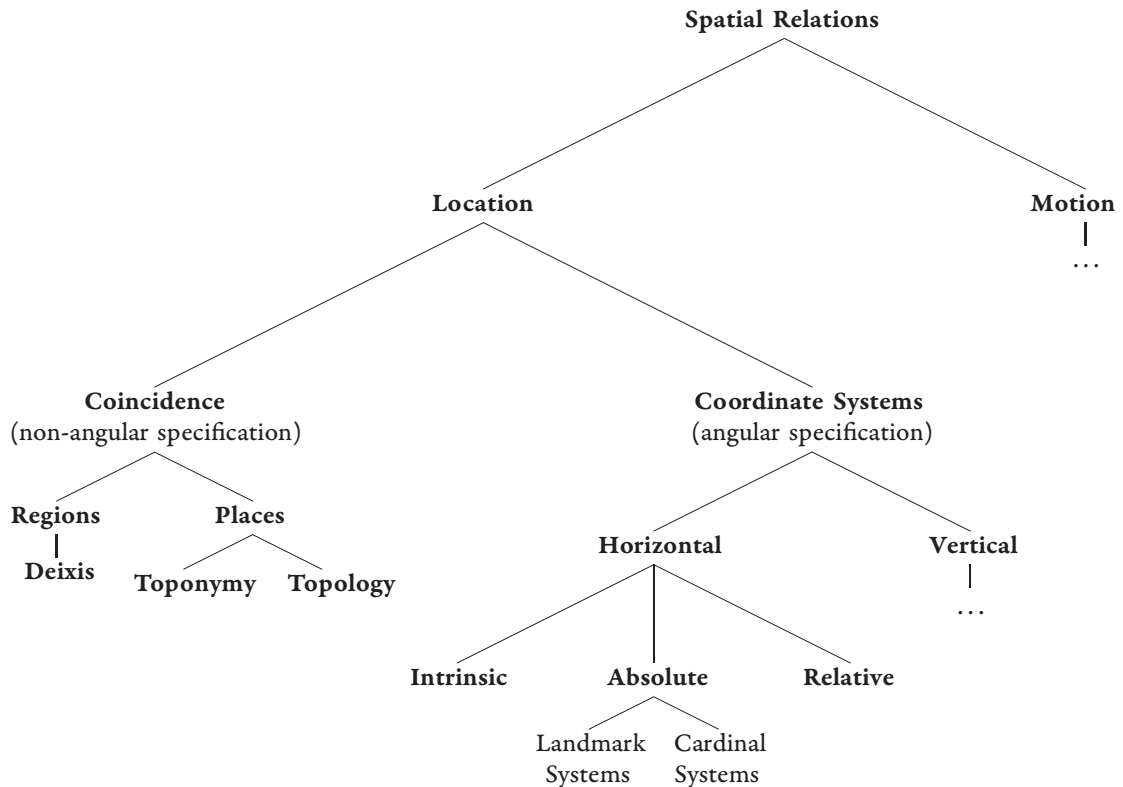


Figure 2.1: Major semantic subfields in spatial language

(Levinson 2003: 66)

location of the G referent, he will also be able to identify the region where F is to be looked for. The exact size of the portion of space to be searched in pursuit of F (and thus the specificity of the linguistic expression) is then determined by the extension of the place-name. For transparent reasons, this location strategy is usually termed **toponymy**, ‘place-naming’.

Topology here is the way of locating F in coincidence with, contiguity with, or propinquity to a G that need not be individually named, but can be referred to with a term that allows identification in the context of the utterance. The nearness of F and G permits more detailed specification of the kind of approximated coincidence that holds between F and G, for instance contact, containment or support, as expressed by the English prepositions *at*, *in*, *on*, *between* and the like.

If F and G are further removed from each other and a detailed specification of the search domain is called for, the systems outlined so far do not suffice. In such cases, various coordinate systems are put to use in what has come to be known as **frames of reference**, which can in principle feature in spatial relations on the vertical as well as on the horizontal. As the same kinds of systems are used on both dimensions (cf. section 6.2.1) and practical demand for orientation

on the surface of the earth gives preference to the (more or less, cf. section 6.2) horizontal plane, the vertical dimension has been divided off in Figure 2.1 for the sake of, well, space, and may be understood to function in analogy to what is sketched below.

Although languages differ greatly in their exact ways of conveying spatial relations between non-contiguous objects, the research group in Nijmegen has identified exactly three frames of reference under which all systems could be categorized, with variation then being limited to details within these frames. The frames of reference, like the other systems of spatial reference, may be distinguished on the basis of their values for the parameters listed above, by their properties under rotation, as well as by their support for logical inferences.

As indicated in section 2.3, they all have in common that they employ a coordinate system in which a set of labeled angles is used to denote a sector projected off the Ground in which F is said to be located.

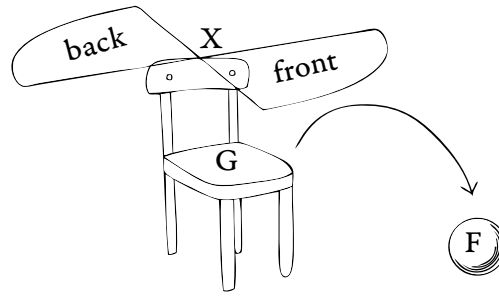
An **intrinsic** spatial relation R is, in the words of Levinson (2003: 42f.), “a binary spatial relation, with arguments F and G, where R typically names a part of G.”¹³ The coordinate system is centered (with X) at G_C , and anchored through an A in a named facet of G. In this coordinate system, a line or angle (typically labeled R) is projected from G in the direction in which F is asserted to be found. In other words: Intrinsic features are ascribed to the Ground object, and the search domain extends from the side of one of these named features, such as ‘front’, ‘back’ or ‘side’, for example. The linguistic description of the scene is independent of the viewpoint of the observer and changes only when the G object is rotated around its volumetric center, but stays the same when G and F are rotated around G_C together. Figure 2.2a on the following page exemplifies the intrinsic configuration *the ball is in front of the chair*.¹⁴ The intrinsic frame of reference supports neither transitive inferences (it is not necessarily the case that if F is at the front of G_1 , and G_1 is at the front of G_2 , then F is also at the front of G_2) nor converse inferences (if F is at the front of G, then it is not necessarily the case that G is at the back of F).

Absolute relations are equally binary and have the coordinate system centered on G ($X=G$) as well.¹⁵ The coordinates are, however, anchored by a conceptual “slope” SL oriented with regard to a salient landmark in the environment (a mountain, a river, a constellation of celestial bodies, the prevailing direction of the wind, etc.) or an abstract cardinal direction such as ‘north’, and the projected regions are often labeled after these absolute directions. As the anchoring slopes may be given in very different forms in different cultural settings, the resulting coordinate system need not be Cartesian. G may be any object whatsoever, including ego (or another deictic center,

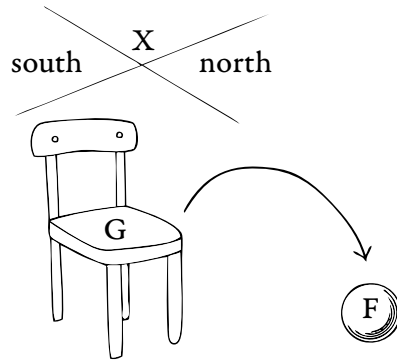
¹³ F may also be a part of G (Levinson 2003: 43).

¹⁴ With X slightly removed from its usual position at G for the sake of easier presentation.

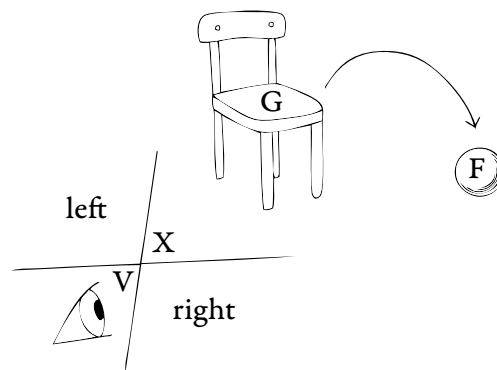
¹⁵ With the exception of expressions such as “the geese fly north in summer” (Levinson 2003: 332), which are “purely” absolute and do not make reference to a G at all.



(a) intrinsic



(b) absolute



(c) relative

Figure 2.2: Frames of reference

(Levinson 2001: 575)

cf. chapter 4), and F may be a part of G. Figure 2.2b illustrates the absolute configuration *the ball is north of the chair*. The linguistic description is independent of the viewpoint and remains constant under rotation of G, but changes when F and G are rotated around G_C together. The absolute frame of reference supports both transitive and converse inferences between F and G.

In contrast to the relations mentioned above, the **relative** frame of reference provides a ternary relation between F, G, and a V distinct from both, the latter of which often is, but need not be, ego. The (primary) coordinate system is always centered on V ($X=V$), but a secondary coordinate system originating in G may be projected. Anchoring proceeds through the bearings of V, which may be mapped onto the secondary coordinate system by means of simple translation (keeping the “absolute” orientation of the coordinates and just transferring the origin), rotation, or reflection (transferred to G as if through a mirror). Figure 2.2c on the preceding page illustrates the relative configuration *the ball is to the right of the chair*. As with the absolute frame of reference, linguistic description is constant under rotation of G, but changes when F and G are rotated around G_C together. In addition, the description changes when the position of V changes. If V is held constant throughout, relative relations support both transitive and converse inferences.

The possibility of representing one and the same scene in different frames of reference raises the question of intertranslatability between these representations, or “Molyneux’s question” (Levinson 2003: 56).¹⁶ Due to the different parameters necessary for the description, and the different logical properties of the frames of reference, not all possible ways of re-coding are available if the necessary parameters have not been stored along with the representation of the scene (which, in turn, is unlikely for reasons of economy if they are not needed, e.g. for purposes of linguistic description).

As the semantic typology outlined above applies to individual constructions rather than to entire languages, a language may avail itself of more than one frame of reference (and most languages do), although different frames of reference may feature with different degrees of prominence in a given language, and not all languages make use of all three. The linguistic constructions instantiating different frames of reference overall tend to be formally differentiated as well, although overlaps and extensions are common.

¹⁶After Irish scientist and politician William Molyneux. In a letter to British philosopher John Locke in 1688, Molyneux asked whether man born blind and thus possessing only haptic representations of objects would recognize the same objects visually if he was suddenly endowed with eyesight.

3 Deixis

A deictic term (after Greek *δείκνυμι* ‘to point, to indicate’), as laid out by Bühler (1934) and adhered to by many linguists thereafter, is one whose reference depends on the context of the utterance in which it occurs, and varies with that context. In Bühler’s words, it is a pointing word (*Zeigwort*) or “signal” that points to an entity in the deictic field (*Zeigfeld*) opened up by the utterance context. Resolving its reference requires knowledge of its position and orientation in the deictic field, as opposed to a naming word (*Nennwort*) or “symbol”, which references an entity from a symbolic field (*Symbolfeld*) by a convention independent of a concrete situation, only by syntagmatic relation to other symbols in its environment.¹⁷ Deictic expressions usually have their origin (or *origo*, or deictic center) in what Bühler (1934: 102) referred to as the “I-here-now” triad (*hier-jetzt-ich*), that is, reference of deictic terms is normally resolved as viewed from the place of the speaker at the time of the utterance. Knowledge of these circumstantial parameters is essential to establishing reference of deictic linguistic forms in the *Zeigfeld*. Without this knowledge, only their syntagmatic relations can be decoded in the *Symbolfeld*, hovering unanchored over large sets of potential referents, while such generality of reference is usually not intended. In more modern terminology, knowing the semantics of an expression is not enough to establish its reference, unless this knowledge is pragmatically anchored. Or, as Fillmore has put it:

The worst possible case I can imagine for a totally unanchored occasion-sentence¹⁸ is that of finding afloat in the ocean a bottle containing a note which reads, “Meet me here at noon tomorrow with a stick about this big.”

(Fillmore 1997: 60)

The elements of the Bühlerian triad indicate the principal types of deixis that have been distinguished throughout the literature (cf. e.g. Bühler 1934; Fillmore 1997; Lyons 1977, 1995; Anderson and Keenan 1985): Person deixis, temporal deixis, and spatial deixis.

¹⁷Another classification of sign types, introduced by Peirce (1932), subsequently also gained significant currency, particularly among philosophers of language. Peirce distinguished between *symbols* (whose reference depends on an arbitrary linguistic convention alone), *indexes* (whose reference depends on world knowledge to identify an entity in its surroundings which bears an implicational relationship to the sign) and *icons* (whose reference depends on a similarity relation between the sign and the referent). As a consequence of the extensional overlap between Bühler’s “deictic” and Peirce’s “indexical” terms, the categories of deixis and indexicality have often been confounded, despite their very different intensional characterization. Thus, the outright identification of “deictic” and “indexical” terms as made e.g. by Miller and Johnson-Laird (1976: 395) may be premature, depending on what one takes to be the theory behind them.

¹⁸i.e., one intended to refer to a particular situation (“occasion”) rather than expressing a general statement

Person deixis points to the identity of the interlocutors, and comprises the indication of first (the speaker), second (the addressee) and third (anybody else) grammatical person. As the roles of speaker and addressee rapidly change during normal conversation, so does the reference of terms like *I*, *you* or *she* in English, and the referential equivalents of these terms in other languages. As a cross-linguistic complication, languages may vary in their assignment of “semantic” persons (or conversational roles of interlocutors) to the semantics of particular linguistic forms: Chintang, for instance, distinguishes inclusive (speaker plus addressee plus maybe others) and exclusive (speaker with some other person(s) but not the addressee) first persons in the dual and plural numbers, a distinction which is absent from English.

Another major type of deixis concerns temporal reference, that is, reference to an entity in time as viewed from the origo, usually the time of the utterance. Time, unlike grammatical person, does not always come in discrete units, but rather as a continuum, in which one may distinguish points of time and periods of time in a more “absolute” (*in December*) or a more “relative” (*in a fortnight*) way: Both examples depend on the temporal context of the utterance in a broad or narrow sense: to determine the year of reference, as December is a recurrent item in the calendar (although one may as well specify a yet more “absolute” time as *in December 2009*), or to determine an exact day two weeks into the future from the time of speaking (the reference of which changes every day).¹⁹ As time is usually construed as a one-dimensional continuum, it is fairly straightforward to relate a punctual event as happening *before*, *after* or *at the same time as* the time of speaking.

Finally, the type of deixis that lies at the heart of this paper, spatial deixis, relates entities to each other in a continuum generally assumed to comprise three dimensions. The origo, again, is usually with the speaker, but many languages also have grammaticalized means of expressing location based on the position of the addressee at the time of speaking (cf. Bühler’s “*iste*” deixis, and Anderson and Keenan 1985: 277ff.). While one is first led to think of spatial deixis in terms of demonstratives (*this vs. that*) or adverbs (*here vs. there*), deictic elements can also be found in the meaning of verb stems (*come* as motion towards the origo, and *go* as motion away from it even in English, more complex distinctions can be found e.g. in Tzotzil (Mayan, Mexico, Haviland 1996), or inflectional morphemes as in Abaza (Northwest Caucasian, Russian Federation, Allen 1956) encoding complex relations between the speech act location and the location of the narrated event at various points in time. Other than encoding various degrees of spatial distance from the speech event as determined by the position of speaker, addressee, or both, systems are attested that make distinctions on additional dimensions like visibility of the referent (e.g. in Kwakiutl, Northern Wakashan, Canada, Boas 1947), previous mention of the referent in discourse (e.g. in

¹⁹An obvious counterexample illustrates the flimsy application of the labels “absolute” and “relative” here: While *in December* may point to the past or the future as viewed from the origo, *in a fortnight* can only point into the future, and in this respect may be said to be more “absolute” in its reference.

Hausa, West Chadic, Nigeria, Welmers 1973: 287), or, and this shall be particularly relevant to the discussion of Chintang, physical features of the environment: Daga (Dagan, PNG, Murane 1974), for instance, distinguishes demonstratives not only with regard to distance, but also based on the altitude of the referent's position relative to the speaker. Similarly, Abkhaz (Northwest Caucasian, Abkhazia, Dumézil 1975) marks the direction of an action as 'upwards' or 'downwards' from the speaker. While height is a prominent landmark, it is not the only one that may feature in deixis: Dyrbal (Pama-Nyungan, Australia, Dixon 1972) has an altitudinal distinction, but also a set of deictic markers contrasting 'upriver' and 'downriver'. River-based systems are equally found e.g. in Karok (isolate?, California, Bright 1957) and Yurok (Ritwan?, California, Robins 1958), and that its flow need not be the only determinant for directional expressions is evidenced by Jaminjung (Jaminjungan, Australia, Schultze-Berndt 2006), where 'towards the river' and 'away from the river' are also encoded.

Expressions with spatial deictic reference cross-linguistically tend to be extended to other, non-spatial domains as well (Anderson and Keenan 1985: 278). Thus, the spatial demonstrative *this* in locutions like *this year*, *in this way* evokes the notion of nearness to the origo beyond mere literal, physical, spatial proximity, also encompassing temporal or "psychological" notions of distance, even though one cannot point to such referents in the same way one can accompany spatial reference of *this* with a pointing gesture.

In a similar vein, Fillmore (1997: 62f.) distinguishes three different uses of deictic terms with respect to the concreteness of their pointing: "Gestural" use, in his terms (or *demonstratio ad oculos*, speaking with Bühler), refers to the most basic application, where a pointing gesture is accompanied by the use of a "linguistic gesture" in the form of a deictic expression. Lyons (1995: 304) points out that the linguistic expression in these cases might as well be substituted by the gesture alone. Instead of indicating a particular painting at an exhibition and saying *That's beautiful*, one might as well use the pointing gesture alone and just say *beautiful*—the act would still identify a referent and predicate over it. According to Levinson (2003: 70), the gesture more than compensates for the semantic vagueness of the deictic linguistic item, as a gesture can give finer degrees of specification than any linguistic expression.

In the second kind of use, labeled "anaphoric" (also already distinguished by Bühler), resolving the reference of deictics depends on knowing with which other entity in the surrounding discourse they are coreferential. For instance, the deictic adverb *there* in *I drove my car to the parking lot and left it there* refers to the place previously mentioned in the discourse,²⁰ namely the parking

²⁰Fillmore fails to provide details on the exact relation between this kind of *use* of a spatial deictic on the one hand and discourse deixis on the other, which he identifies as a separate *type* of deixis, see below. I would assume that his anaphoric use requires a previously mentioned discourse-external referent, while discourse deixis refers immanently to portions of the discourse itself, as in *That was what I wanted to say*.

lot, and no current relation between the referent and the speaker is required (although it is not unreasonable to assume that the use of the distal in the example implies that the car is in a location different from the speaker at the time of speaking).

“Symbolic” use of deictics, the third kind, requires general knowledge about certain aspects of the speech situation, but is also independent of current perception. Although Fillmore does not explicate this notion in detail, it seems plausible that he had a use in the Bühlerian *Symbolfeld* in mind, with meaning resulting from general semantic considerations rather than concrete pragmatic contextualization. The symbolic use is exemplified by *there* in *Is Johnny there?* in a classical telephone conversation: Irrespective of where I call, and whether I know the exact location of my interlocutor at all (or just his telephone number), *there* in this context is understood as ‘in the place where you are’, the conversationally relevant place opposed to the ‘here’ of the speaker.

Lyons (1995: 304) recognizes a twofold distinction similar to the one just made: “Locutionary” deixis, rooted in the time and the place of the utterance, would encompass Fillmore’s gestural use. “Cognitive” deixis, as Lyons calls the other kind that has its origo in the time and place of a mental act of more or less conscious awareness or reflection, could accommodate Fillmore’s anaphoric use. Symbolic use of deictics is not a matter of deixis for Lyons (cf. below).

Apart from occasional re-grouping and re-labeling of certain aspects, the exact definition of deixis does not appear to have made any significant progress in the five decades between Bühler (1934) and Anderson and Keenan (1985). The latter define deictic expressions as “those linguistic elements whose interpretation in simple sentences makes essential reference to properties of the extralinguistic context in which they occur” (Anderson and Keenan 1985: 259), and they leave the definition admittedly vague²¹ in order to accommodate a broad range of phenomena. What is a significant advance from all of their predecessors,²² however, is that they focus on a systematic typological survey of formal patterns in which deixis may be encoded in various languages. They make a strong point in emphasizing that deictic function is in principle independent of its being instantiated in particular linguistic forms, so that deictic information can be conveyed through pronouns, verbs, adverbs or inflectional marking, for example, while conversely not all uses of deictic expressions are deictic: English *you* may refer to the addressee of an utterance, in which case reference is context-dependent, but it may just as well be used impersonally, as in *When you’re hot, you’re hot*, where reference is generic and does not depend on any particular contextual property (Anderson and Keenan 1985: 260). A similar case results from the use of third person pronouns for reference to the addressee, often used as a sign of social distance. In the variety of German

²¹For instance, they do not explicate what they mean by “essential” reference, and often leave implicit exactly which properties are generally relevant, and to what extent.

²²Except Bühler, who provided examples from other languages whenever he could find them, but even then they were limited to the Indo-European language family.

spoken 300 years ago, for example, a superior could have addressed an inferior directly by something like *Was hat Er zu sagen?*, literally ‘What does he have to say?’. The plural form of the third person has since been extended to cover general polite address of a second person referent (singular or plural) in contemporary German, so there is nothing awkward in saying *Könnten Sie mir sagen, wie ich zum Bahnhof komme?* ‘Could you.HON tell me how I get to the railway station?’ (literally, at least from a diachronic point of view, ‘Could they tell me how I get to the railway station?’, while synchronically there is no hint of reference to any third person). Not only is this not awkward, quite on the contrary, it is perfectly appropriate, and might be hypothesized to reflect a general cross-linguistic tendency to avoid direct reference for reasons of politeness. Although these are not examples from spatial deixis, they demonstrate that primacy in determining meaning should be with language use in a given situation (and thus there is no way around pragmatics, cf. Levinson 2000), which is a level to be distinguished clearly from the linguistic form and even its canonical “semantics” (see also Hanks 1990, 1996 for the emphasis on referential or communicative practice in the context into which language use is embedded). This observation is worth keeping in mind for the discussion of certain deictics in Belhare and Chintang in section 8.1. The examples also manifest a further type of deixis, social deixis, which indicates the social relations that obtain between interlocutors, such as social distance.

Speaking of types of deixis again, and paralleling the imprecise definitions of deixis, there is no consensus at all as to what the extension of the term “deixis” should be. In addition to the three basic types (person, temporal, spatial), Fillmore (1997: 61) includes discourse deixis (pointing to preceding and following parts of the linguistic interaction) and social deixis (indicating the social relations that obtain between the interlocutors) as major subtypes. Anderson and Keenan (1985: 260) include sex of the referent, as well as social relations between speaker and addressee or speaker and referent, as genuinely deictic features, but encoded by person deictics. Lyons (1995) permits only spatio-temporal and some person deictics under the category of “pure deixis”, which for him accommodates only those devices merely identifying a referent in relation to the spatio-temporal location of the locutionary act and its participants. English third-person pronouns, for example, do not qualify as “pure deictics” in his sense, as they encode other, “clearly non-deictic” (Lyons 1995: 307) information not needed to identify referents from the zero-point in the locutionary act, namely gender or “socio-expressive” notions like social distance. He maintains, however, that “most utterances [...] in all languages are indexical or deictic, in that the truth-value of the propositions that they express is determined by the spatio-temporal dimensions of the deictic context.” (Lyons 1995: 305) On the other end of the spectrum, Levinson (2003: 69ff.), conscious of the classical definitions and restricting himself to the analysis of the spatial domain, confines use of the label “deixis” to those occasions where spatial information is indicated without angular

specification and without any of the points except the Ground (which in deixis is determined by the location of the speech act participants) having a unique designation—all other uses can be accommodated elsewhere in the system (cf. sections 2.3 and 2.4). In this view, it is the absence of frame-of-reference information that motivates or even necessitates accompanying gesture to ensure felicitous specification of a Figure.

Given this broad disagreement about the applicability of the term “deixis” to one phenomenon or the other, and given the fact that this notional thicket is largely a matter of arbitrary terminological choices, there is little point in arguing in favor of one interpretation to the exclusion of others, and on this basis label any particular construction as deictic or not. Rather, the empirical analysis of Chintang will have to rely on the underlying criteria outlined above to determine what items are deictic in what sense and to what extent. For the time being, I shall assume that enough of the Chintang expressions discussed below are sufficiently deictic to justify the title of this thesis.

4 Transposition

While it is frequently the case that systems for expressing spatial relations are based on the speaker and his perceptual environment at the time of speaking, there is no necessity for this to be so — despite claims about the primacy of egocentrism in language and perception of space (cf. Miller and Johnson-Laird 1976).

Bühler (1934: 102ff.), in the tradition of Aristotle and Kant, already noted that the point of orientation (*Orientierungspunkt*, the Ground in the terminology adopted here) need not be the speaker, but may as well be with some other object. Orientations are then translated (*übersetzt*) to that object, so that for instance a gymnastics instructor facing a group of athletes may give instructions in terms of ‘left’, ‘right’, ‘forward’, and ‘backward’ *as if* he was talking from their point of view. In the same way, objects may be said to have ‘front’, ‘back’, ‘left’, and ‘right’ sides just like a human observer himself. In the Levinsonian system, these distinctions can easily be captured as non-egocentric applications of terms for e.g. body parts within the relative and intrinsic frames of reference, with X and/or G transferred to an object other than the speaker.

Shifts like these (cf. Jakobson 1971) also survive extensions of spatial reference to other domains, such as temporal affairs: Time can be thought of as flowing past us from the future into the past (giving rise to expressions like *coming week* as opposed to *the years gone by*), or one may conceptualize time as stable, with the world moving through it, as in *the week ahead* (Anderson and Keenan 1985: 296). These paradoxical metaphors are highly reminiscent of Aristotle’s boat moored in the river (section 2.1), and may also be accommodated into the system outlined in section 2.3 as different selections of Grounds, or a switch from the relative to the intrinsic frame of reference.

For referring from or to points outside the immediate perceptual context of the utterance, Bühler uses the designation *Deixis am Phantasma* (phantasmal deixis). Thus, an actor on a stage can refer to a Figure as being *there* even though it is not perceptible, or not even existent in material reality, but may have existence within the play. Not only the Figure, also the Ground (or the deictic center, including the Viewpoint) may be imaginary, as in a dream, for instance: Outside an ongoing dream, none of its contents (neither Figures nor imagined deictic centers) are available to deictics in Fillmore’s “gestural” use any longer. Quoted speech is a prime example for complete detachment from the “I-here-now”, where the speaker may say *I will go there* without necessarily meaning either himself, nor a point of time later than the utterance, nor a location other than the

one he is occupying at the time of speaking.²³

More analytically challenging than complete detachment is that subtype of *Deixis am Phantasma* where some aspects of referring to the Figure are still determined by the actual spatiotemporal context of the utterance, while others are not, so that one may regard this as deixis from a secondary deictic center dependent on a primary one (usually the “I-here-now” of the speaker). Bühler called the semantic operations behind such applications **transpositions** (*Versetzungen*), another line of thought (represented by Anderson and Keenan 1985: 301ff.) terms the same phenomenon “relativized” deixis, yet another “secondary” deixis (Lyons 1995: 310f.), “decentered” deixis, or “deictic projections” (Lyons 1977: 579).

A very simple example of transposed deixis in the temporal realm poses the English past perfect tense.²⁴ It defines a ternary relation between event time, reference time and speech time (Reichenbach 1947; Hornstein 1990), and asserts that (in a plain declarative sentence) the proposition expressed held at an event time before the reference time (the secondary deictic center), which itself lies in the past as viewed from speech time (time of the utterance, the primary deictic center). *John had never gone to Andijan* therefore asserts that prior to some point before the utterance’s “now”, John never set foot in Andijan—while this may well have changed between that reference point in the past and the time of uttering the sentence, so that a simple, non-transposed qualification such as *John never went to Andijan* or *John has never gone to Andijan* may have a different truth value at the time of speaking than the past perfect version.

Languages differ as to what forms they allow to carry a transposed reading, or in other words, how they lexicalize or grammaticalize transposition—what restrictions they impose on linguistic entities with respect to transposed meaning. To take the *I will go there* example again: If we are to embed this into an assertive a here-and-now context, we might use indirect speech rather than just report a direct, verbatim quotation, thus transforming a structure like (2a) into something like (2b).

- (2) a. “I will go”, Dan said.
b. Dan said that he would go.

In order to accomplish this, we need to apply two transformations to the sentence expressing the content of what Dan said: First, the personal pronoun is changed in order to indicate that now the speaker is at the primary deictic center rather than Dan. Second, the grammar of English

²³Although it may of course be argued that in quoting, he is merely mentioning words rather than using them, so that in “*I will go*”, *Dan said* (cf. example (2)), there is no actual deictic element besides maybe pointing to the individual Dan as a third grammatical person.

²⁴Distinguishing tense and aspect properties would lead us too far afield here, therefore I shall assume with traditional school grammar that the past perfect is a grammatical tense.

requires us to change the verb form to fit the subordinate clause induced by the transposition.²⁵ A language like Hebrew, by contrast, imposes the first, but not the second requirement for the same transposition process:

- (3) a. “*Ani elex*” *Dan amar*
 I go:FUT:1SG Dan said
 ‘“I will go” Dan said.’
- b. *Dan amar she-hu yelex*
 Dan said that-he go:FUT
 ‘Dan said that he would go.’
- (Anderson and Keenan 1985: 303)

It is true that the verb form also changes from (3a) to (3b), but this change is owed only to agreement in grammatical person with the changed subject. Unlike English *would* (on the intended reading), Hebrew *yelex* may just as well feature in main clauses. Formal requirements such as these can therefore serve as an indicator to trace deictic (and thus functional) transposition operations on the linguistic surface.

For an English transposition example involving spatial deixis, consider the following (from Lyons 1977: 578f.): The speaker is making a long-distance telephone call from London to New York. He may, for example, choose to adopt the addressee’s temporal circumstances in order to select an appropriate greeting, so he might say *Good morning*, whereas he would have said *Good afternoon* if he had based his decision on the time at his own location. He may say *We are going to New York next week*, or *We are coming to New York*, with both verbs indicating motion towards the current location of his addressee, but in the former case based on the speaker’s point of view, in the latter on that of the addressee. He may do the same with *We are going there next week*, with *there* referring to New York, and both the verb and the adverb chosen from the speaker’s own perspective.²⁶ Alternatively, many speakers of English can also say *We are coming there next week*, with the origo of reference of the verb transposed to the addressee’s location (the secondary deictic center), but the adverb maintaining the location of the speaker (the primary deictic center) as its referential base. What he cannot say, however, is *We are coming here next week* in this context, as this would violate the rules governing the use of *here*. The sentence is perfectly grammatical, and the speaker could use it if he meant that he and his loved ones would return to the place he is calling from in the week following the conversation, but *here*, unlike *come*, does not allow transposition of the deictic center to the location of the addressee, and therefore is not applicable in our context.

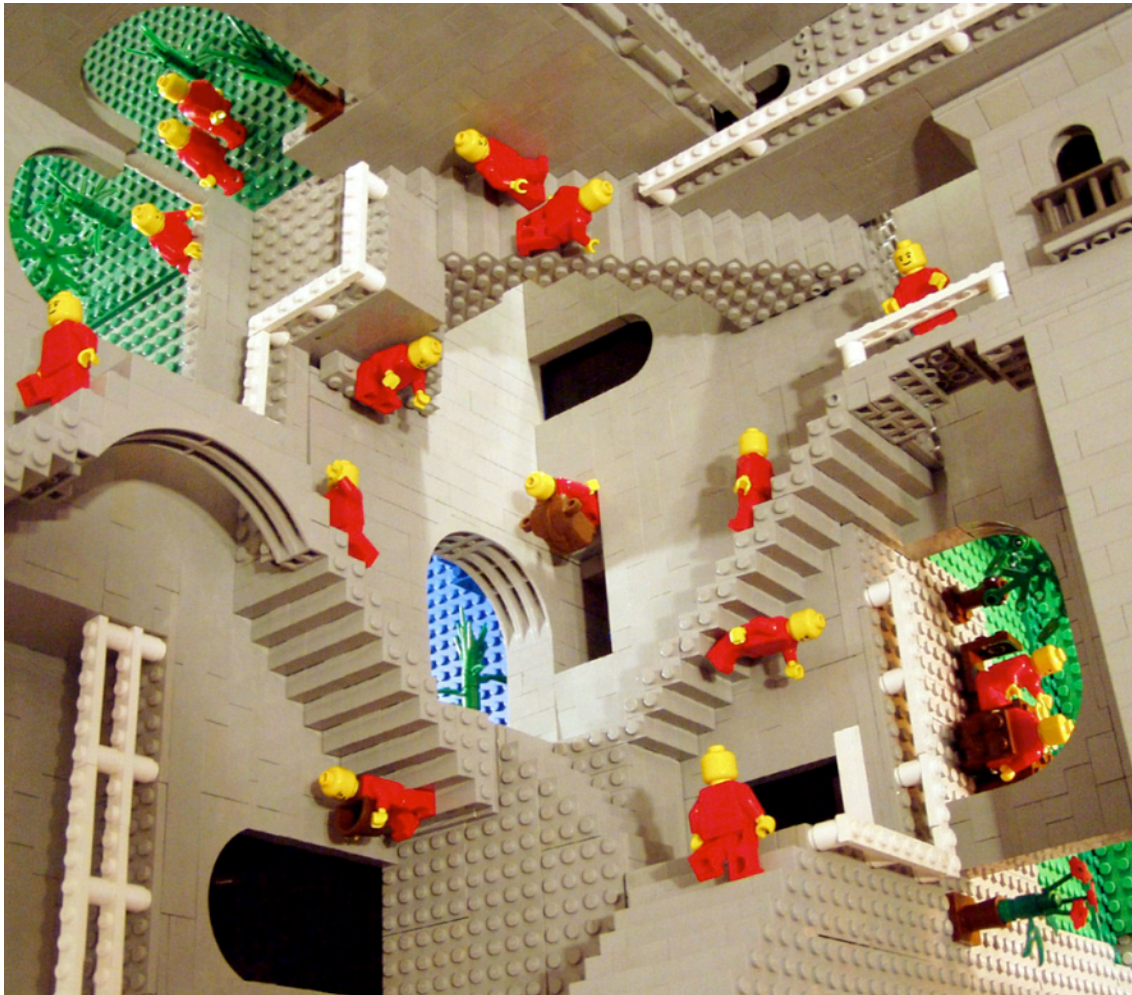
²⁵Unless the time of Dan’s going is still in the future for the utterer of (2b) at the time of speaking, in which case *will* is still available.

²⁶This wording would, however, facilitate an interpretation in which the exact destination of the following week’s journey does not coincide with the addressee’s present location.

Similarly, in an example like (2), Dan's saying "I will **go there**" would have to be transformed into "Dan said he would **come here**" in reported speech if Dan's goal at his time of speaking was identical to the location of the speaker of the transformed utterance at his time of speaking, as the transposed deictic center necessitates the use of different linguistic forms for deixis to the same place. It is formal and functional differences such as these that will be the subject of the empirical discussion of transposition in Belhare and Chintang in section 8.1. But before that, the following sections shall provide a general overview of the linguistic devices of Chintang that encode spatial relations, and attempt to relate their semantics to the system outlined in sections 2.3 and 2.4.

Part II

Empirical Findings



Andrew Lipson and Daniel Shiu (2003): *Escher's 'Relativity' in LEGO*[®]

5 Non-angular spatial specifications

5.1 General deictics

5.1.1 Spatial uses

Chintang has two general-purpose demonstrative roots that can have spatial reference (cf. Table 5.1), *ba* and *buN* (with a final nasality feature that yields a nasal homorganic with the following obstruent, nasalization of the following vowel, or neutral [ŋ]).^{27,28} In their spatial function, they are deictic in the sense that they have their origin at the deictic center, usually the “I-here-now” of the speaker, and their reference follows radial vectors around the deictic center without further angular specification (Levinson 2003: 65ff.).

	DEM.PROX	DEM
plain	<i>ba</i>	<i>buN</i>
(GEN)	<i>bago</i>	<i>hungo</i>
LOC	<i>bai</i>	<i>hungoi</i>
	<i>bagobeʔ</i>	<i>hungobeʔ</i>
		<i>humbeʔ</i>
MED/ERG/INSTR	<i>bagoiʔŋa</i>	<i>hungoiʔŋa</i>
DIR	<i>bagoʔni</i>	<i>hungoʔni</i>
ABL	<i>bagobeʔŋa</i>	<i>hungobeʔŋa</i>
		<i>humbeʔŋa</i>
	<i>bagoiʔŋa</i>	<i>hungoiʔŋa</i>
LAT	<i>baipatti</i>	<i>hungopatti</i>

Table 5.1: General demonstratives and some of their case inflections in Chintang

²⁷In case of the bare demonstrative stems (“plain” forms in Table 5.1), the “following segment” may be the initial of the next grammatical word, warranting an analysis of *buN* as a phonological proclitic. In terms of stress assignment, both *buN* and *ba* can carry primary stress and thus be phonological words of their own when in contrastive gestural use (cf. Fillmore 1997: 62, Lyons 1995: 303).

²⁸*ba* alternates with *bba* freely in today’s Chintang as spoken by my consultants, but speakers say that traditionally *bba* was associated with the Sambugaũ dialect, whereas *ba* used to be associated with Mulgaũ.

As bare stems (“plain” forms in Table 5.1), both of these function as determiners to a noun phrase head. In the narrative in (4), a farmer has just found a crab and puts it into his handkerchief:

- (4) *ab ba khebakniŋ kamcha abo numma paryo*
ab ba khebak-niŋ kam abo numd-ma par-yo
 FILLER DEM.PROX crab-ASSOC friend now do-INF be-PST
mokina mitte pho
mo kina mitt-e pho
 PTCL SEQ think-PST REP

‘[I] should become friends with this crab, [he] thought.’ (khebak_tale.016-017)

In the story in (5), the hill has been referred to in the preceding sentences at least as extensively as the crab in the above example, yet the non-proximal demonstrative is used:

- (5) *hun dāda pberi cekma puŋse*
buN dāda pberi cekt-ma puŋs-e
 DEM hill again speak-INF start-PST

‘The hill began to speak again.’ (mouse_story.134)

The different choice of demonstrative is due neither to the syntactic function of the argument NP nor to reasons of discourse or information structure (cf. below), but to specification of spatial distance of the referent to the deictic center, or of intimacy. While the farmer is in physical contact with the crab, the third-person narrator of (5), though not necessarily far away from the referent, is not touching the hill, and hence uses the non-proximal form. The *ba* forms indicate close contact with the deictic center, which in the purely spatial realm amounts to the referent being touched or at least easily touchable by the speaker. Referents outside arm’s reach generally cannot be *ba* for most speakers.

The stem extension on what is glossed as GEN in Table 5.1, though diachronically probably thus formed (cf. Table 1.2 on p. 7), is synchronically best analyzed simply as a general dependent marker. In synchronic terms, there is no difference between *ba khim* and *bago khim*, both can be translated as ‘this house’.²⁹ *bago* and *huŋgo* alone may head their own noun phrases, which would then translate as ‘this one’ and ‘that one’, respectively. The deictics inflected for the other cases translate as spatial adverbs (‘there’, ‘away from here’, ‘hither’ etc.), and the locative inflection with *-i* instead of *-pe?* yields an intensified sense of immediacy or increased emotional commitment, so *bai* could translate as ‘right here’ (or is often rendered as an interjection), and so forth.

The reference of *ba* is either always accompanied by touch or a manual point anyway (usually palm down, with only the index finger extended), or so unambiguous because there is only one

²⁹and analogously for *buN*

object close enough to the speaker and relevant enough to current discourse that an accompanying gesture is superfluous. First mention of a referent by *buN* alone (i.e., not as a determiner to a nominal head which could serve to single out only one object of its kind in the perceptible environment) requires additional pointing in the same manner for identification, but once reference is established, the “linguistic” point suffices.³⁰

In the first five scenes of the demonstrative questionnaire (see p. 109f.), *ba* is available for a Figure in physical contact with the speaker’s body (scenes 1 and 3),³¹ such as in (6),

- (6) *bago* *akeŋ* *tuknota*
ba-ko *a-keŋ* *tuk-no=ta*
 DEM-GEN 1SG.POSS-tooth hurt-NPST=PTCL
 ‘This tooth hurts.’ (demqJR.01)

in which case *buN* is not good. (I take it that this contrast is pragmatically based, see below.) Conversely, *buN* is okay for scenes 2, 4, and 5, in which the Figure is with the addressee, but within reach of the speaker. In these cases, *ba* is also possible, and becomes better the closer the pointing finger approaches F; it is ideal (to the pragmatic exclusion of *buN*) if the finger touches F. If the Figure is on the shoulder of the addressee facing away from the speaker, so that it is outside the speaker’s reach, even *yo* (see section 6.2) is applicable, as is *buN*, but not *ba*.

While *ba* is specified for proximity, *buN* is apparently semantically distance-neutral (neither requiring nor precluding either proximity or distance, and hence glossed here as DEM only), acquiring its distal meaning only through pragmatic contrast with *ba*. When referring to multiple objects in sequence, *ba* can only be assigned once (e.g., to the object closest to the speaker, or to the one named first), provided that the object is close enough to be referred to with *ba* at all. On the other hand, *buN* is available to all remaining objects, also to those located at the same distance to the deictic origin as the one labeled *ba*. When the speaker does not want to single out one of the referents as nearer than the others, they may just as well all be *buN* irrespective of their actual distance.

This pragmatic contrast of reachability may be exploited to generate implicatures like in

- (7) *buŋgo* *kun̄kun̄ma seda!*
buN-ko *kun̄kun̄ma set-a*
 DEM-GEN mosquito kill-IMP
 ‘Kill that mosquito!’

³⁰This may then as well be counted as anaphoric deixis, cf. below.

³¹As outlined above, ‘tooth’ in scene 1 is not unambiguous and therefore requires a pointing gesture, while *bago kun̄kun̄ma* ‘this mosquito’ in a scene like 3 is—in the absence of other mosquitoes—unambiguous, and therefore the proximity to the speaker suffices without accompanying point to justify the use of *ba*.

which is appropriate even if the mosquito in question is in contact with the speaker's body. While a situation of bodily contact would license and justify *ba* as in (6), its non-use here signals that the mosquito is conceptualized as out of reach of the speaker, and that therefore he requests help from the addressee. Describing the mosquito as *ba* would be perfectly acceptable in itself, but would make the addressee frown in the context of (7) because he would be wondering why the speaker does not just kill it himself if it is close enough to be *ba*, i.e., touchable by the speaker. The impression of being out of reach can be amplified even more by using the absolute term *mogo* in the above example (see section 6.2).

The deictic center may not only be the actual “I-here-now” of the speaker at the time of speaking: Both examples (4) and (5) above testify to *Deixis am Phantasma* with complete detachment of the origo from the actual perceptual environment of the speaker. No form of *ba* or *huN*, however, may be used with a Ground that is not deictic in the sense that the Ground speaks for itself in first person (be that speaking direct or indirect/“phantasmal”).

5.1.2 Non-spatial uses

Spatial distance is not the only relevant measure for determining the applicability of *ba* and *huN*, as is evident from (8),

- (8) *ba* *apanatice* *dasjana ulisanse*
ba *a-panati-ce* *das jana u-lis-a-ŋs-e*
 DEM.PROX 1SG.POSS-great-grandson-NSG ten CLF 3NSG.S/A-be-PST-PRF-PST
 ‘I have these ten great-grandchildren.’ (khim_ring.025)

where the speaker has just enumerated her relatives without all of them being present at the time of speaking. In theory, speakers say, a *huN* form would also be fine with such an enumeration, but family ties justify a proximal, and it would be odd not to use one here. Alternatively, one might think of this use of *ba* as anaphoric in Fillmore's sense (see chapter 3), but even if the coreferential entity has featured in the discourse just before, *ba* is much less prone to anaphoric use than *huN*. In fact, in the rare cases where a separate linguistic item (other than verbal cross-referencing) is used to indicate a third person referent anaphorically, *huN* (usually as *hungo*) is the prime choice, as in (9):

- (9) *bakhi* *lisakha* *hungo*
bakhi *lis-a=kha* *hungo*
 in.this.way be-PST=PTCL DEM
 ‘It was like this.’ (ctn-talk02.079)

hunɡo here can be interpreted either as referring back to the wedding that the addressee has just been told about, or (as a discourse deictic) as referring to the speaker’s telling the addressee about the wedding just before.

As just shown, the demonstrative roots also take the bound morpheme *-kbi*, which could be termed a “similative” but is not attested with hosts other than the following: *-kbi* occurs in *likbi* ‘as, like’, a postposed general simile marker to nominal (*nam likbi* ‘like the sun’, *hana likbi* ‘like you.SG’), verbal (*bidapidi likbi* ‘like saying goodbye’),³² and adverbial (*asinda likbi* ‘like yesterday’) elements alike, and the corresponding interrogative *bokbi* ‘how, like what’. With the demonstrative roots, it yields the adverbials *bakbi* ‘like this, in this way’ and *hunɡkbi* ‘like that, thus’, which both frequently also take an additional associative marker *-niŋ*. Choice of the root is subject to the same conceptualization strategies as for spatial reference above: The proximal in (10) accompanies the vivid re-telling of how the speaker herself made sure not to lose her valuable luggage on a trip, while the mother in (11) distances herself from the bad words of the child by not using the proximal.

- (10) *kampiutar bakhiniŋ* *labe* *kina mahā*
kampiutar bakhi-niŋ *lapt-e* *kina maba?*
 computer in.this.way-ASSOC hold-PST SEQ not
 ‘... and [I] held the computer like this, right?’ (dkt-ktm-trip.0161)
 (demonstrating gesturally how she clung to it)

- (11) *cektiniŋkha* *hunɡkbi*
cekt-i-niŋ=kba *hunɡkbi*
 say-1/2.PL.S/P-NEG=PTCL like.that
 ‘We should not say such things.’ (CLLDCh3Ro4So4.075)
 (scolding a child for using swearwords)

Furthermore, the use of *huN* for temporal reference is also attested, usually in the ablative and translating as ‘then, after that’, as in (12) and (13):

- (12) *humbe?ŋa* *ligadake*
huN-pe?ŋa *lig-a-batt-yakt-e*
 DEM-LOC-MED enter-PST-TEL-IPFV-PST
 ‘then he entered [the tent]’ (rana_pilgrim.155)
 (having defecated and cleaned himself)

³²This is not a nominalized verb form: *bidapidi* *likhita?*
bida *pid-i* *likbi=ta*
 farewell give-1/2.PL.S/P alike=PTCL
 ‘[It is] as if we were saying goodbye.’ (ctn_talko2.126)

- (13) *buŋgoi?yã* *bakbra taŋyaŋ* *maipini?kninŋ*
buN-ko-i-ŋa *bakbra taŋ=yaŋ* *mai-pit-no-ninŋ*
 DEM-GEN-LOC-MED goat head=ADD NEG-give-NPST-NEG
 ‘After that, they don’t even leave the head of the goat.’ (kothari_talk.092)

(The temple caretaker complains that after the devotees have sacrificed their goat, they do not even leave the head to him any more, like they used and ought to do.)

Note that the inflectional morphology on the demonstrative is productive: It does not matter whether the ablative effect is achieved through the *-i* or the *-pe?* locative allomorph, and whether this compound case is attached to the bare demonstrative or an extended stem. It is not certain, however, that the above examples present cases of temporal deixis: They might indicate points in time, but the ‘from that’ or ‘from there’ meaning they convey might just as well refer to previous parts of the narration, and hence would have to be classified as anaphors or discourse deictics. Analyzing these uses of *buN* as anaphoric (in parallel to third person anaphora, cf. above) would be supported by the finding that no analogous construction with *ba* (to yield something like ‘from now on’) can be retrieved either from the corpus or through elicitation. A further observation which might be counted in favor of an anaphora analysis is that similar “cataphora”, analogous forms for pointing to future events, e.g. through directive case inflection, do not exist, as one would expect temporal deixis (in principle) to function in both directions of the timeline.

5.2 Toponymy

As for spatial reference independent of a deictic center: To locate a Figure entity at a Ground designated by a unique name, one would canonically inflect the G for locative case (if the locations of F and G are conceived as overlapping or contiguous, lative case otherwise) and predicate with the verb *yuyma*,³³ as in (14).

- (14) *appa* *chintanbe?* *yuyno*
a-pa *chintan-pe?* *yuy-no*
 1SG.POSS-father C.-LOC be-NPST
 ‘My father is in Chintang.’

This structure, F G-LOC *yuyma*, constitutes *the* “basic locative construction” (BLC, Levinson and Wilkins 2006: 15) of Chintang, the most common and most general structure of the answer to the question ‘Where is F?’. In fact, it is so basic that it extends over a very broad range of referent situations, as indicated in the following section.

³³Like Nepali, Chintang has two existential (or copular) verbs. *lima* roughly corresponds to the Nepali “equational” *हो* *ho*, while *yuyma* canonically translates as the Nepali “locational” *छ* *cha*.

5.3 Topology

Giving every potential Ground object an individual name is a tedious task, so one might rather like to generalize over classes of entities and treat all members of a class alike for purposes of spatial description. In Chintang, all F objects can comfortably (and in a fully grammatical way) be related to all G objects by the same construction as in (14) above, i.e., by F G-LOC *yujno*. The exact details of the relation then have to be inferred pragmatically, from relations that canonically hold between the referents. The construction is semantically general enough to cover ‘in’, ‘on’ and ‘at’ relations alike, and in fact 70 out of the 71 scenes in the topological relations picture series can be described in this way for everyday purposes; scene 26 presents the sole exception due to a lexical gap, see example (21) on p. 51.³⁴

If one does want to be more specific, however, there are in principle two ways out of this generality. The first strategy is to use a different predicate indicating how the situation came about that brought F and G into this relation. Thus, instead of using the description with the locative and the copula verb for the ‘in’, ‘on’ and ‘through’ relations in (15a), (16a) and (17a) below, one might as well (or even preferably) use a “lexical” predicate, as in (15b), (16b) and (17b), which form equally legitimate answers to the question *hokke* F *yujno*? ‘Where is F?’, despite the questions’ suggesting a general locative form and the respondents’ being instructed to locate the F with respect to the G in the picture.

- (15) a. *bedi utburumbe? yujno*
bēdi u-thurum-pe? yuj-no
 cigarette 3SG.POSS-mouth-LOC be-NPST
 ‘The cigarette is in his mouth.’ (toprelRMR.39)
- b. *ma?mi? bedi thujno*
ma?mi bēdi thuj-no
 man cigarette drink-NPST
 ‘The man is smoking the cigarette.’ (toprelJR.39)

³⁴Expressing a ‘between’ relation, which the picture series does not test explicitly, requires a little twist and a construction similar to the ones discussed below: The two items between which the Figure is located form a collective, expressed by associative case on both of the items, and the Figure is then said to be ‘in its middle’ (the collective counts as grammatically singular, and hence receives singular agreement marking), as in

gainij bakbrani?ko umajhabe?
gai-nij bakbra-nij=ko u-majh-a-pe?
 cow-ASSOC goat-ASSOC=GEN 3SG.POSS-middle-NTVZ-LOC
 ‘between the cow and the goat’

- (16) a. *taŋbeʔ topi yuŋno*
taŋ-peʔ topi yuŋ-no
 head-LOC cap be-NPST
 ‘The hat is on the head.’ (toprelRMR.05)
- b. *maʔmiʔ topi wadaŋse*
maʔmi topi wat-a-ŋs-e
 man cap apply-PST-PRF-PST
 ‘The man has put the hat on.’ (toprelJR.05)
- (17) a. *tikphibeʔ syao yuŋno*
tikphi-peʔ syao yuŋ-no
 arrow-LOC apple be-NPST
 ‘The apple is on the skewer.’ (toprelRMR.70)
- b. *thitta maʔmiʔŋa latbiŋa syao roktoŋse*
thitta maʔmi-ŋa latthi-ŋa syao rokt-u-ŋs-e
 one person-ERG stick-MED apple poke-3P-PRF-PST
 ‘Someone has pierced the apple with a stick.’ (toprelJR.70)³⁵

Here, again, the understood exact spatial configuration between F and G depends on pragmatic inference from situations to which the predicate normally applies. When faced with an explicit choice of coding strategies in elicitation, the majority of my consultants preferred this (b) way of relating contiguous objects in naturally situated discourse over the general locative construction as outlined above, on account of the intuition that it tells them “more” about the scene in question,³⁶ despite the outsider’s observation that it did not contain any more spatial information on the level of semantics: The predicates used in (15b) and (16b), by and of themselves, are not dedicated locative predicates, their semantics lack the spatial and configurational sophistication found in other languages such as Tzeltal (Brown 1994) or Yéʼli Dnye (Levinson 1999).

Pragmatic inferences to stereotypical spatial configurations as such are not as cross-linguistically odd as they may seem at first glance if one thinks of spatial relations primarily in terms of prepositions: Senft (2006) reports a similar preference for Kilivila, and an answer like *I took them with me* in response to the question *Where are my car keys?* is not even totally awkward in most va-

³⁵That coding strategy choice correlates with speaker in these examples is an artifact of example selection.

³⁶The validity of such an intuitive claim for actual discourse would have to be tested, of course, e.g. in a matching game involving descriptions of topological relations. The resources at my disposal did not yet permit me to run such a test, and the space game we played was not specifically targeted at a systematic comparison of “bringing about” relations, as it did not vary the participants or potential agents who could bring about spatial relations, for instance. Since relations such as these have not been specifically coded for in the corpus and the range of possible predicates to express these relations is potentially infinite, an analysis of the extant data would require screening hundreds of hours of video footage, which I also have not managed yet.

rieties of English I am familiar with if the circumstances permit such an answer and if it satisfies the informational need of the asker. In English, however, even if I specify what I did to the car keys by a lexical predicate, I frequently give it a prepositional complement or adjunct: *with me* above, or headed by a more clearly topological expression as in *I put them in your purse* and the like. Chintang does not have spatial adpositions, but relational nouns may serve a similar purpose, as shall be outlined now.

The second specification strategy, less preferred for ordinary discourse and used only when speakers have to be very precise in detailing a spatial configuration verbally (like when they are made to play a space game, where no common perceptual field is available and not even gestures can guide pragmatic inference), is to provide part of an object as a Ground to which the Figure bears a relation. The basic construction for this is F Object-GEN POSS-Part-LOC *yuyno*, as in (18), if the Figure is taken as given in discourse (e.g. already topical because somebody has asked for its position).³⁷

- (18) *syao khoreko ukoybe? yuyno*
syao khore-ko u-koy-pe? yuy-no
 apple bowl-GEN 3SG.POSS-inside-LOC be-NPST
 ‘The apple is in the bowl.’ (toprelRMR.02a)

If the speaker is describing a spatial configuration without being prompted (i.e., introducing new information about a Figure to the addressee), the Figure tends to appear after the Ground in immediately preverbal position, which suggests a focus position there, in line with cross-linguistic observations on other languages with a preference for SOV constituent order (cf. Kim 1988) and assumptions about the relation between topicality and subjecthood (e.g. in Lambrecht 1994).³⁸

The object-part terms appear as relational nouns (requiring an ordinary doubly-marked possessive construction on both head and dependent, as elsewhere in the language and the family) in careful speech and in one-by-one elicitation. Under conversational circumstances, the *-ko* on the dependent is frequently dropped, and as speech accelerates, the POSS marker on the head noun is also elided and leaves both elements to fuse into a single phonological word, yielding a construction like

³⁷ For the sake of coherence, all of the object-part terms I encountered shall be introduced under this heading, although in an orthodox Levinsonian construal (cf. footnote 13), some of them should probably be classified as belonging to the intrinsic frame of reference (section 6.1) already.

³⁸ Thus, strictly speaking, (16a) should rather be translated as ‘There is a HAT on the head’, and (17a) as ‘There is an APPLE on the skewer’, respectively. As I am not primarily concerned with information structure but with coding of spatial relations, I have provided the consultants’ first response in the above examples. Whenever I succeeded in suggesting to take the F as a given (as intended by the original design of the questionnaire and the general question ‘Where is F?’ underlying the spatial relations typology), the syntactic sequence of the response conformed to the BLC reported above.

- (19) *syao kborekoṅbe? yuṅno*
syao kbore-koṅ-be? yuṅ-no
 apple bowl-inside-LOC be-NPST

‘The apple is in the bowl.’

(toprelRMR.02)

with *koṅ* quasi-grammaticalized to what might be termed an inessive marker. Unlike *kbore* here, *koṅ* cannot stand all alone—without a host to cliticize to, it requires obligatory possessive marking, as do all part expressions (an observation indicated by leading dashes in the following). As a side note on *-koṅ*, since it appears to be the one part-term construction most readily preferred to a non-specific BLC: *-koṅ* only applies ideally when the “enclosing potential” of G is exhausted in the relevant dimensions with respect to F. Thus, scene 60 of the topological relations series qualifies as *-koṅ* because the house is completely surrounded by the fence on the horizontal plane, and fencing something in is obviously conceived of as a two-dimensional enterprise. By contrast, the cork in scene 62 is not *-koṅ* because it is not inside the bottle—with a container like this, three-dimensional enclosure of F would be required. But “exhaustion of G’s enclosing potential” need not mean “full enclosure of the volume of F”: The arrow piercing the apple in scene 30 is also *-koṅ*, although it protrudes on both sides. Would it stand out on only one side, calling it *-koṅ* would not be so good, as it is not clear to the perceiver that it is really ‘in and all the way through’ the apple rather than just attached to it in some way. The bag in scenes 14 and 66, however, is obviously just about big enough to hold the box (or *kitab* ‘book’ for our purposes), so that a *-koṅ* relation is justified even though not all of the box is contained within it.

The part expressions listed in Figure 5.1 are general enough to apply to all objects with roughly the same shape (and similar Euclidean figures): *-cik* can refer to any side if prompted, but by implicature usually names those sides which are not ‘top’, ‘bottom’, ‘front’, or ‘back’. Whether the ‘side’ is a plane as in Figure 5.1 or bent as in Figure 5.2 does not matter for linguistic description.

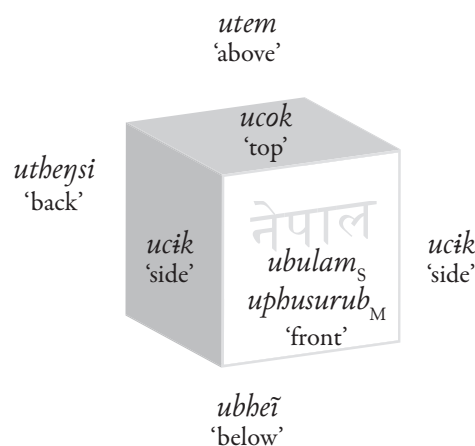


Figure 5.1: Named parts of objects

The ‘front’ reveals a dialectal difference between the Sambugaũ and Mulgaũ dialects (cf. section 1.4): my Sambugaũ consultants call the front *-bulam*, which diachronically probably derives from a term for ‘belly’ (*phok* in contemporary Chintang, *buk* in Bantawa according to Novel Kishore Rai, p.c.; the *bu* here may thus be a recent Bantawa borrowing rather than inherited from Proto-Kiranti, though speakers contest such an analysis) plus a mediative case suffix *-lam* (from *lambu* ‘way’). Mulgaũ speakers just laugh at this term and call the front *-phusurub*, which is not (yet) etymologically transparent to me, although the length of the term suggests that this is not originally a monomorphemic Chintang stem. Sambugaũ speakers know the same term as ‘vicinity, neighborhood’. The very fact that this difference caused amusement among the speakers of the dialect groups I interviewed is a hint to the relative rarity of these specific forms in discourse: Mulgaũ and Sambugaũ speakers have interacted with each other regularly for many years within the documentation project and apparently never stumbled over this difference prior to my elicitation. The corpus also yielded just one further instance of *bulam*.

Where the ‘front’ is depends on the functionality of the object: the ‘front’ is its most useful side in canonical usage. With a house, it would be where the main entrance is; with a book it is the side of its (“front”) cover; with even more novel objects such as computers it is the side where the screen and the keyboard are. The functional (rather than speaker-directed) orientation is also evidenced in Figure 5.2 on the next page, where it is the side on which liquids can be poured out of the jug (as this is viewed as the ultimate purpose of a jug) rather than the side with the *u-lap-ma* (3SG.POSS-hold-INF) ‘handle’ canonically facing the speaker when using a jug. In Figure 5.1, the front is the side of the cube that has the writing on it, provided that there is only one such side (otherwise they would all just be *ucik*).

tem and *bheĩ* are, in principle, grounded in an absolute axis determined by gravity, and are listed here for the sake of completeness, as these terms are also used to refer to particular parts of Grounds. As a grammatical reflex of this “freedom from objects” and their intrinsic orientation, the terms can stand alone, and possessive marking is not obligatory when not referring to parts of particular objects (cf. section 6.2.3). The only caveat to the “in principle” above is that *ubheĩ* designates not only the bottom part of an object, but is extended to the part that is at the bottom during canonical use, so that an object like the jug in Figure 5.2 can end up having two ‘bottoms’ under rotation.

I observed the only shape-based distinction with regard to the top of an object: A flat top like that of the cube in Figure 5.1 is *ucok*, while a pointed one is *ucom* and cannot be *ucok* (but may well also be *utem*). A *-cok* is prototypically instantiated by the flat surface of a table, but it does not have to be perfectly even or level. The roof of the house in scene 34 of the topological relations picture series was also referred to as *ucok*, and the topmost part of a tree can be designated by

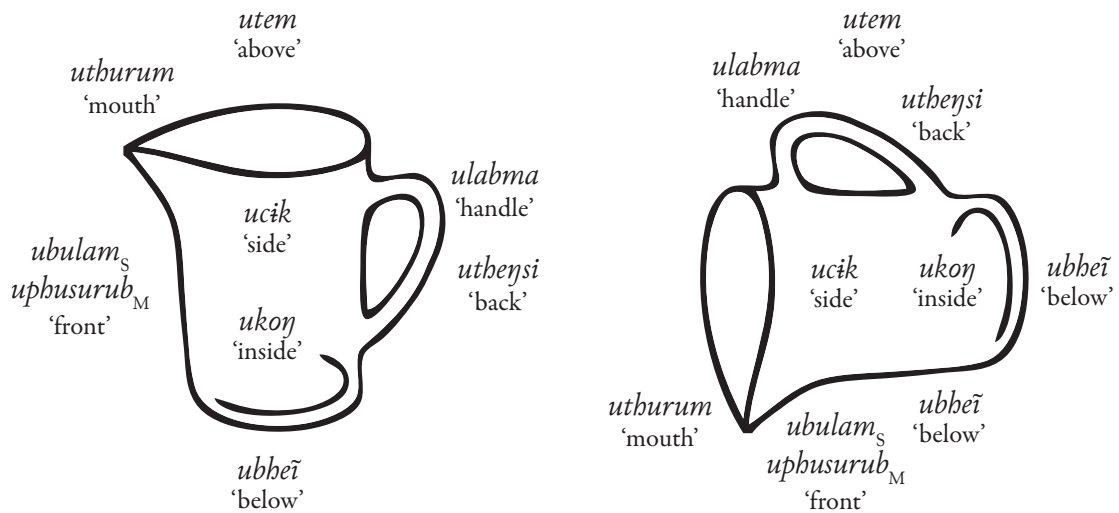


Figure 5.2: Named parts of objects under rotation

the same linguistic item. Especially the latter case may seem counter-intuitive at first, but when asked to explain the difference between *-cok* and *-com*, one speaker aided my understanding by paraphrasing *-cok* as ‘that which is flat enough to sit on’, which makes sense if one thinks of a treetop as a place that birds can sit on. That this is ultimately at best a perception-based distinction rather than determined by the object itself is obvious from the fact that the summit of a mountain is also *ucom*³⁹ even though one may be able to sit on it when one gets there, while a (flat) bottlecap is *ucok* despite the fact that it is only big enough for insects to sit on. A *-com* would be typically instantiated by a conic shape like the sharpened point of a pencil, for example, with steep clines all around. Both terms, however, require a material surface: the jug in Figure 5.2 has neither *ucom* nor *ucok*, its upper part can only be referred to as *utem* (cf. above). It does, however, have a *-thurum* ‘mouth’ in this place, which can mean any opening that is intended to be there for something to pass through. An accidental opening or “negative space”, like the ones in the topological relations picture series scenes 18 and 67, would be *-hon* ‘hole’, again with obligatory (!) possessive marking even when there is no overt possessor present or the semantic possessor does not take part in the grammatical possessive construction, as in

³⁹Even though I lack detailed historical or comparative data as of yet, it is not unlikely both from a micro-ecolinguistic as well as from a macro-crosslinguistic view that this is the original use of the term, and that this landmark designation was eventually extended to small-scale objects as well. Of those object-part terms not derived from designations for parts of the human body (cf. Heine 1997), the terms for ‘up’ were most frequently derived from “landmark” expressions for ‘sky’, ‘heaven’, or ‘summit’ in the languages surveyed by Svorou (1994: 83).

- (20) *tawelbeʔ uboŋ yuŋno*
tawel-peʔ u-hoŋ yuŋ-no
 towel-LOC 3SG.POSS-hole be-NPST

‘There is a hole in the towel.’ (toprelRMR.18)

Such ‘holes’ are ideally round, but elliptical and square ones are also covered by the term—unlike more or less one-dimensional “cracks” as in scene 26 of the topological relations picture series, for which there does not seem to be a dedicated nominal in Chintang. All consultants described that scene as something like

- (21) *kaʔ kedadŋse*
kaʔ ket-a-batt-a-ŋs-e
 cup break-PST-TEL-PST-PRF-PST

‘The cup is broken.’ (toprelJR.26)

with the damage being expressed as a lexical predicate, and stated that there is no structure more similar to the descriptions of the other scenes to express this.

In principle, all of the part terms listed in this section can be applied to Ground objects in other grammatical persons as well, the possessive prefix then being *a-* instead of *u-* for first person, and *i-* for second person singular (see Table 1.1 on p. 6), except that human beings usually have neither *-cok* nor *-com*.⁴⁰ As nouns are often not inflected for number, and as referring to one and the same side of multiple objects at once is pragmatically even more rare than the object-part naming strategy in general, it is not surprising that dual and plural do not feature here.

Relating Chintang to the BLC hierarchy (Levinson and Wilkins 2006: 16, 519) is not quite so straightforward. The hierarchy states that in the ordered sequence of the relation types

animate Ground » F pierced by G » G pierced by F » adhesion » “core scenes”
 as exemplified by
 ring on finger » apple on skewer » arrow in apple » stamp on envelope »
 cup on table/fruit in bowl/lamp over table/ball under chair

if the basic locative construction is available for describing any of the above relation types, it will also be available for all relation types to its right on the hierarchy. In our case, the unspecified BLC is available across the entire range of relations, so from this perspective, the hierarchy is trivially fulfilled anyway. From another point of view, however, the contiguity of these relations in similarity space is not so easy to preserve: G pierced by F is a *-koŋ* relation, while no similar specialized constructions exist for any of the other relation types to the left of the “core scenes”. For

⁴⁰In literary contexts, these terms could, of course, apply to trees or mountains etc. as speakers or addressees as well.

these other scenes, only the BLC or a construction with a lexical predicate are available, whereas the G pierced by F relation type is coded on a par with the ‘in’ relations among the “core scenes”, two steps further to the right of the hierarchy.

6 Frames of reference

6.1 Intrinsic

As Heine (1997: 44) has noted for the 125 African languages he studied and the 104 Oceanic languages of Bowden (1991), terms referring to parts of bodies tend to be extended diachronically to regions in space adjacent to these parts. The same holds for Chintang: The ‘front’, ‘back’ and ‘side’ terms used to designate object parts (cf. chapter 5) can also specify a search domain in a sector in space projected off that part of a Ground object (see Figure 6.1 on the next page). These sectors do not extend very far—only to about arm’s length from man-sized Grounds, or “no further than the shadow [of the relevant Ground object] extends” for anything without arms, as one consultant intuitively described the range. The labels for the angles may also be employed to refer to regions of the human body, a use which, if Bowden and Heine (on the Aristotelian track) are correct, is basic, although only ‘front’ and ‘back’ can be said to be transparently derived from specialized body-part terminology here. As with the part terms in section 5.3, Grounds in other grammatical persons are indicated by the appropriate possessive prefix (see Table 1.1 on p. 6).

The ‘top’ part of an object does not project, absolute *utem* ‘above’ is used instead. As the bottom part, *ubheĩ*, derives its intrinsic label from the absolute axis as well, an object rotated out of its canonical orientation may end up having two ‘below’ sectors, one intrinsic and one absolute. Most of my consultants agree that *utem* stays the sector vertically above the Ground object (see section 6.2 below) also under rotation. The sector projected off the part which used to be the ‘top’ either becomes a ‘side’ when the Ground is rotated (if it is not designated by ‘front’ or ‘back’ anyway), or is referred to with an absolute term (cf. section 6.2).

Differentiation between the two ‘sides’ remains possible by using *beĩwa*⁴¹ ‘left’ and *cuptaŋ* ‘right’, but these terms are rarely used at all and not attested in the corpus. In my elicitation sessions, they were always used in an intrinsic frame of reference, and were readily applicable only to human Grounds (in first person more easily than in second and third). With (featured) inanimate objects, speakers had significant difficulty to assign them, and many refused to do so altogether, hence I put them in parentheses in Figure 6.1. Like the other intrinsic terms, their applicability does not extend beyond arm’s reach, and with unfeatured Grounds, all consultants preferred

⁴¹ probably borrowed from Bantawa *beŋ* ‘left’, as by established sound laws one would expect initial *pb-* here if the term derived directly from a Proto-Kiranti root, but see footnote 28 on p. 39.

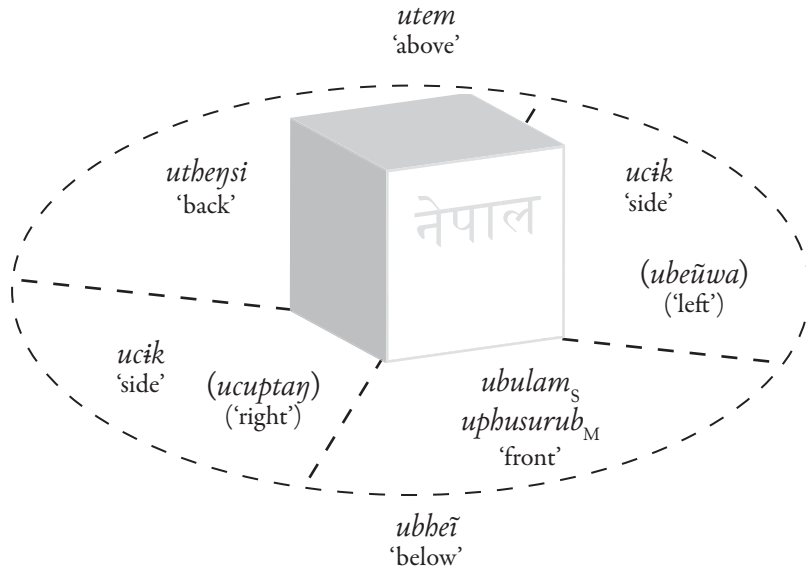


Figure 6.1: Sectors projected off a Ground object

either unspecified *ucik* or an absolute “environmental” term (cf. section 6.2) even within arm’s reach. The ‘left’ and ‘right’ terms refer to sectors projected off the human body rather than to the body parts themselves, therefore they occur much more readily with lative *-patti* than with coincidence-implicating locative *-pe?*. Normally they do not even feature in referring to body parts or the sides of the human body, which would just be *acik* ‘my side’ and the like, but can be specified as e.g. *beiwako acik* ‘my left side’ if required. Nevertheless, applicability of *beiwapatti* and *cuptanpatti* also ends at arm’s length.

6.2 Absolute

By far the most prominent referential system of Chintang relies on the absolute frame of reference. Like in other languages of the same stock spoken in the surrounding area (cf. Bickel 1994, 1997 on Belhare, Ebert 1999 on various other Kiranti languages), as well as in unrelated languages spoken in mountainous regions elsewhere in the world (cf. e.g. Brown and Levinson 1993; Brown 2006, 2008 on Tzeltal), the semantics of the terms using this frame of reference are based on inclination of the terrain, and hence the terms have been labeled “altitudinal” (Ebert 1999) or “environmental” (Bickel 1994). In the following, I shall adhere to the former designation, as it makes explicit reference to the kind of their origin, even though this does not mean that they imply (objective, “absolute”) elevational distinctions in each case (cf. section 6.2.1 below).

The terrain of Chintang VDC is hilly enough for altitude-based distinctions to feature prominently in language and culture, as naturally occurring plane horizontal surfaces are rare. In their

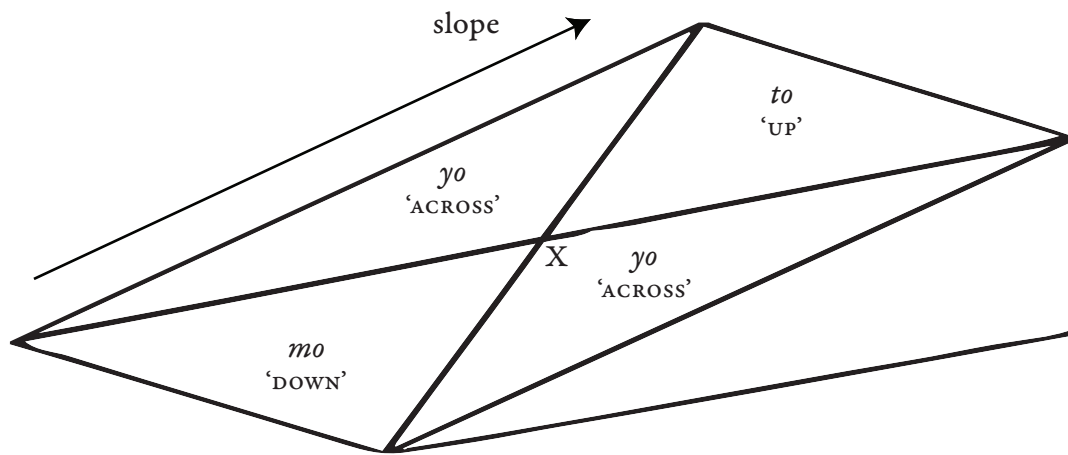


Figure 6.2: Absolute demonstrative roots

basic usage, the system distinguishes ‘up(hill)’, ‘down(hill)’ and ‘across’ (or ‘traverse’), principally instantiated (for this study in particular) in the demonstrative roots *to*, *mo*, and *yo*, respectively. In their bare form, like the demonstrative roots introduced in section 5.1, they serve as determiners to a nominal head.

Just like the other demonstratives, the absolute demonstrative roots take all ordinary case inflections to yield some sort of spatial adverbs, as illustrated in Table 6.1 on the following page. In their bare form or inflected for GEN+LOC *-ko-i*, they also serve as interjections.

In semantic terms, these roots can be thought of as delimiting four quadrants of roughly 90° each, projected off a Ground which is generally assumed to be the speaker unless stated otherwise (see section 8.6). When so used, they thus qualify as deictic in that the deictic center (the speaker) functions as Ground. They are oriented towards ‘up’, ‘down’ and ‘across’ in the sense that imagined axes of a coordinate system through the Ground as origo (X), parallel to the relevant slope (cf. section 6.2.1 below), lead either uphill or downhill or across the slope at a constant altitude, so that they bisect the corresponding labeled angles. The terms do not designate the axes themselves, however: Designation by *to* does not become better or worse depending on slight differences in the angle to the imagined line leading uphill, everything within the *to* area is clearly *to*, and there are sharp edges setting it off without vagueness from the *yo* quadrants. The four sectors together exhaust the deictic field, and the use of one of them implies the existence of the other three. They may thus be taken as “grammatical” for spatial reference in much the same way as the triad of grammatical persons exhausts the deictic field for referring to arguments of predicates.

	plain	<i>a</i> - series (section 8.2.1)	<i>u</i> - series (section 8.2.1)	altitudinal <i>ba</i> - (section 8.2.2)	
UP	plain DEM	<i>to</i>	<i>atu</i>	<i>utu</i>	<i>bandu</i>
	GENITIVE	<i>togo</i>	<i>atu(ba)ko</i>	<i>utu(ba)ko</i>	<i>bandu(ba)ko</i>
	LOCATIVE	<i>toba</i>	<i>atu(ba)</i>	<i>utu(ba)</i>	<i>bandu(ba)</i>
	MEDIATIVE	<i>to(ba)lam</i>	<i>atu(ba)lam</i>	<i>utu(ba)lam</i>	<i>bandu(ba)lam</i>
	DIRECTIVE	<i>toʔni</i>	<i>atuʔni</i>	<i>utuʔni</i>	<i>banduʔni</i>
	ABLATIVE	<i>tobaʔŋa</i>	<i>atubaʔŋa</i>	<i>utubaʔŋa</i>	<i>bandubaʔŋa</i>
	LATIVE	<i>topatti</i>	<i>atupatti</i>	<i>utupatti</i>	<i>bandupatti</i>
DOWN	plain DEM	<i>mo</i>	<i>amu</i>	<i>umu</i>	<i>bamu</i>
	GENITIVE	<i>mogo</i>	<i>amu(ba)ko</i>	<i>umu(ba)ko</i>	<i>bamu(ba)ko</i>
	LOCATIVE	<i>moba</i>	<i>amu(ba)</i>	<i>umu(ba)</i>	<i>bamu(ba)</i>
	MEDIATIVE	<i>mo(ba)lam</i>	<i>amu(ba)lam</i>	<i>umu(ba)lam</i>	<i>bamu(ba)lam</i>
	DIRECTIVE	<i>moʔni</i>	<i>amuʔni</i>	<i>umuʔni</i>	<i>bamuʔni</i>
	ABLATIVE	<i>mobaʔŋa</i>	<i>amubaʔŋa</i>	<i>umubaʔŋa</i>	<i>bamubaʔŋa</i>
	LATIVE	<i>mopatti</i>	<i>amupatti</i>	<i>umupatti</i>	<i>bamupatti</i>
ACROSS	plain DEM	<i>yo</i>	<i>ayu</i>	<i>uyu</i>	<i>bayu</i>
	GENITIVE	<i>yogo</i>	<i>ayugo</i>	<i>uyu(ba)ko</i>	<i>bayu(ba)ko</i>
	LOCATIVE	<i>yoba</i>	<i>ayu(ba)</i>	<i>uyu(ba)</i>	<i>bayu(ba)</i>
	MEDIATIVE	<i>yo(ba)lam</i>	<i>ayu(ba)lam</i>	<i>uyu(ba)lam</i>	<i>bayu(ba)lam</i>
	DIRECTIVE	<i>yoʔni</i>	<i>ayuʔni</i>	<i>uyuʔni</i>	<i>bayuʔni</i>
	ABLATIVE	<i>yobaʔŋa</i>	<i>ayubaʔŋa</i>	<i>uyubaʔŋa</i>	<i>bayubaʔŋa</i>
	LATIVE	<i>yopatti</i>	<i>ayupatti</i>	<i>uyupatti</i>	<i>bayupatti</i>

Table 6.1: Spatial demonstratives in Chintang

Use of the altitudinal terms sets in where the applicability of intrinsic terms and of proximal *ba-* end, that is, outside arm's reach or “graspable space”. Within the applicability domains of these other terms, the absolute series is generally not available, unless for particular pragmatic purposes as outlined in section 5.1. Outside these bounds, the absolute terms in principle pertain up to infinity (with the exception of small-scale geomorphic mapping, where reference is naturally limited to the extension of the local cline in which the system is anchored, see below).

6.2.1 Mapping operations

Knowing how the absolute altitudinal system works in theory is not sufficient in order to operate with it successfully in practical discourse. This complication is owed to the fact that the abstract system can be applied to the concrete environment in various ways. Brown and Levinson (1993) have observed a comparable range of applications of the altitudinal semantic system in Tzeltal, and Bickel (1994, 1997) systematized various uses of altitudinal terms in Belhare as a set of “mapping operations” that each yield very different outcomes with respect to the reference of ‘up’, ‘down’ and ‘across’. I will adopt Bickel’s terminology here and address the operations attested in Chintang in turn.

When an addressee is confronted with a request like

- (22) *toʔni khara!*
to-ni khat-a
 UP-DIR go-IMP
 ‘Go upwards!’

it is by no means clear where the speaker wants him to go, even though there is a clear adverbial altitudinal specification (as for the verb, see chapter 7), and both are competent speakers of Chintang and share a common body of semantic knowledge about the altitudinal system of spatial reference. What is required in addition is that the interlocutors agree on how they map the system onto the environment for the purposes of their current conversational exchange—in short, they need to anchor (cf. sections 2.3 and 2.4) the angles they are talking about in the surrounding reality (however conceived), and the anchor can be cast in various directions from the conceptual deck, as it were.

Small-scale geomorphic mapping The most straightforward interpretation of (22) would translate as ‘go up the nearest (or most salient) hill’, where the abstract system of labeled angles would lock into the immediate environment of the speaker via a prominent feature of a landmark—in this case the height of a hill present at (or close to, or visible from) the speech

act location. Hills in the Chintang-speaking area seldom come singly, therefore the competition between several potential anchoring candidates presents a first source of ambiguity. As long as speakers interact with each other in well-known, traditional terrain, however, there is usually an established salience hierarchy of local hills of which both speaker and addressee are aware, as the hills do not only serve as reference objects for linguistic expressions, but play a significant role for other aspects of daily life as well. Nevertheless, and in particular outside traditional Chintang terrain, computing the salience of elevated landmarks is not always as simple and unanimous as it may seem.

It is reasonable to assume that anchoring proceeds via the ‘up’ quadrant. Anchoring via an ‘across’ sector would be quite inefficient, as it is ambiguous and would require an additional anchoring operation for the ‘up’/‘down’ dimension anyway. Within the Kathmandu valley, where I conducted my research, there are (probably with the exception of lakes) no locations at a significantly lower altitude (i.e., steep, more than a handful of meters of mild decline) which would be likely candidates for anchoring via a ‘down’ quadrant. Positive elevations, however, are numerous, and—clouds and smog permitting—easily perceptible everywhere, so that ‘up’ would be a suitable candidate for anchoring. One might argue that it is a banal question whether anchoring proceeds via the ‘up’ or the ‘down’ direction, as the angles are diametrically opposed in the system, and one may easily be derived from the other through rotation by 180°. But this assumption may not be so trivially straightforward after all: I took Chintang speakers to a kind of narrow gorge, with steep walls on two sides and the ground forming a slope on the remaining axis, and asked them to name the altitudinal sectors. They all agreed that the place had three ‘up’ directions and only one ‘down’ direction, so ‘down’ is not under all circumstances opposite ‘up’.

Large-scale geomorphic mapping Local hill inclination can be overridden by the overall cline of the larger area, from ‘up’ at the Tibetan border ‘down’ to the plains of India. Given the more or less consistent east-west orientation of the Himālayas, ‘up’ then translates as ‘north’, ‘down’ as ‘south’, and ‘across’ as ‘east’ or ‘west’. Yet, it is worth noting that this is only one of the possible mapping operations, so the altitudinal terms do not *per se* represent cardinal directions. They remain tied to landmarks in the environment (the Himālayan mountains are often visible from the Chintang-speaking area) perceived as salient at the time and for the purpose of speaking. (As the Himālayan mountains are far enough away from the traditional Chintang-speaking venues to belong to the mythical realm, there is little way of knowing what would happen to spatial description in the large-scale scheme if significant numbers of Chintang speakers found themselves on the northern, Tibetan side of the mountains, and I also had no opportunity to interview a Chintang speaker outside Nepal.)

In a large-scale geomorphic interpretation at least in Chintang VDC, then, (22) would mean ‘go north’, irrespective of the details of the topographical situation immediately surrounding the speech act. I brought the two geomorphic mapping operations into conflict in the setup of the space game (cf. appendix A, p. 94), but no speaker ever chose to anchor their terms in the Himālayan peaks in that context—maybe because the small-scale local slope was too easily perceptible through the windows of the room, or because the scale of the “playing field” was simply not large enough. When talking about moving from one named place (town, village etc.) to another, large-scale geomorphic mapping is frequently in use.

In both geomorphic mapping operations, Chintang language use exhibits what Bickel (1994, 1997) termed “Haugen effects”, drawing on work by Einar Haugen (1957), who had observed a similar phenomenon in Icelandic. Under such an analysis, the abstract altitude-based coordinate system can be anchored in the endpoint(s) of a trajectory, superseding altitudinal specification of the points along that trajectory. One can be said to go down(hill) if the path that one treads ultimately leads to a place further down (in any of the geomorphic senses), even though in actual fact one might be ascending first (e.g. because following the path implies crossing a ridge before descending towards lower altitudes). For another example, the driveway that leads away from the Centre for Nepalese and Asian Studies (CNAS) initially goes downwards (in terms of local inclination, which is admittedly slight, but noticeable), but then traverses the hill and meets the road that leads upwards into the town of Kirtipur, which sits on and around a hill comfortably overlooking the university campus. Leaving CNAS, one can, therefore, felicitously say that one is going *to?ni* ‘upwards’, while in actual fact one is proceeding from a higher to a lower altitude.

Thus, (22) in this interpretation may mean ‘go the way that eventually leads to a place further up’, despite the fact that this way may first go downwards and then around the hill at the same altitude before going up. Note, however, that the speaker of (22) does not necessarily intend the addressee to actually reach that endpoint; it is enough to know that the way would, if followed to the end, lead upwards.

Ecomorphic mapping In ecomorphic mapping, ‘up’ and ‘down’ are anchored in the vertical dimension as defined by gravity, without reference to the cline of a more or less horizontal plane of terrain. This usage is not very frequent, as there exists a specialized set of terms to cover just this dimension (*tem* and *bheĩ*, cf. section 6.2.3), but the otherwise “horizontal” altitudinal terms may be applied in suitable contexts as well.

Here, (22) can mean ‘go upstairs’, for instance, requesting the addressee to go to a place in the house that is vertically right above the speaker, also if the house stands on level ground in the plains. It may even apply to “virtual verticality” such as that provided by the image on a computer screen: When I introduced Google Earth to the local CPDP team, the Chintang speakers used

(22) to ask me to ‘scroll upwards’ so that they could see other parts of the map (which I had deliberately rotated so that ‘up’ could not mean ‘virtual north’ here).

Physiomorphic mapping A physiomorphic mapping scheme anchors the coordinate system in intrinsic properties of the Ground object, and may thus be seen as an application of the (otherwise absolute) altitudinal terms within the intrinsic frame of reference.⁴² As in Belhare, physiomorphic mapping is existent, but plays only a marginal role in Chintang. It is used mainly for Ground objects of high everyday usage frequency, such as the human body:

- (23) a. *topattigo keŋce*
to-patti-ko keŋ-ce
 up-LAT-GEN tooth-NSG
 ‘upper teeth’
- b. *mopattigo keŋce*
mo-patti-ko keŋ-ce
 down-LAT-GEN tooth-NSG
 ‘lower teeth’

One can thus have ‘upside’ and ‘downside’ body parts, irrespective of the actual orientation of one’s body (i.e., they remain ‘upside’ and ‘downside’ even when lying down). However, there are not many body parts other than jaws and teeth that come in pairs and allow a vertical distinction, and many body parts have unique designations of their own which are generally preferred if applicable, so despite Chintang’s widespread acceptance of semantic vagueness in other domains, there is little use for locutions like ‘upper extremities’ and ‘lower extremities’ instead of ‘hands’ and ‘feet’.⁴³ Still, for otherwise unnamed parts, physiomorphic mapping provides an appreciated strategy to extend terms with originally absolute reference to intrinsic properties, cf. the use of *bheĩ* for the bottom part of an object (section 5.3).

⁴²As this use is obviously secondary, and in order to keep the mapping operations for altitudinal terms together in one place, I nevertheless report this operation here in the section on absolute spatial reference.

⁴³Body parts which come in pairs may be distinguished in terms of left and right (cf. section 6.1), so that one can say

cuptaŋko ibbaktəŋbe? kuŋkuŋma yuŋno
cuptaŋ=ko i-bbaktəŋ-pe? kuŋkuŋma yuŋ-no
 right-GEN 2SG.POSS-shoulder-LOC mosquito be-NPST

‘There is a mosquito on your right shoulder.’

(demqRMR.03a)

However, the designations of the body parts themselves do not incorporate their “sidedness”.

Bickel (1999) distinguishes two more mapping operations, personmorphic mapping (determined by height in the visual field of the observer, with objects closer to the speaker being “lower” than objects further away; Brown and Levinson 1993 make a similar observation for Tzeltal), and arisotomorphic mapping (determined by social value or prestige of the places in question). The latter is also well attested in other languages, including ones where altitudinal distinctions otherwise do not feature as prominently: In Russian, for example, one can go *на Москву* ‘up to Moscow’ from anywhere regardless of the altitude of one’s current location, and consequently *с Москвы* ‘down from Moscow’ in the other direction even though one might be heading for the mountains; compare similar assessment-based English locutions like *uptown* and *downtown*, or to hold somebody in *high* or *low esteem*, the idiomaticity of which makes it hard to recognize that they are actually metaphorical extensions of terminology originating in spatial description. There is slight evidence for something like this in Chintang as well, but the ascription of prestige proceeds in an opposite manner: One can go ‘down’ to Kathmandu, the national capital, and ‘up’ to Chintang from there, although the two places are located at approximately the same altitude (despite the fact that one has to cross hills and mountains in between) and on a line that very roughly runs from west to east, which would call for an ‘across’ designation. ‘down’ in the plains are the prosperous places, people ‘up’ in the mountains are poor. Therefore, going to Europe is also ‘down’, although technically one has to go north (‘up’) and west (‘across’) in large-scale geomorphic mapping, or ecomorphic ‘up’ by airplane. I have not been able to single this out more clearly in other contexts, however, so I would not permit myself to assert that such a mapping operation generally exists, but it would be a plausible assumption given similar cross-Kiranti observations by Ebert (1999: 115).

Likewise, the space game yielded no identifiable evidence for personmorphic mapping (as it would have been confounded with geomorphic operations, see appendix A), and I did not succeed in creating other elicitation scenarios innocent enough for such a mapping scheme to emerge without being preempted by other operations. Given its attestation in Belhare and Tzeltal, however, one would of course expect it to play a role in Chintang as well, albeit probably a small one.

Brown and Levinson (1993) have conjectured that Tzeltal speakers find it natural to operate with a vertical dimension and one provided by the overall inclination of the local terrain instead of a horizontal plane defined by two axes orthogonal to the vertical, as had been deemed universal by proponents of universalist cognitive science (e.g. Miller and Johnson-Laird 1976: 397, Herskovits 1986: 27). Chintang, like Belhare and Tzeltal, allows the use of the inclination-based terms for both strictly vertical distinctions (cf. above) as well as for orientation on the “horizontal” (if and when there is occasion for that). This usage would be at best “confusing” (Brown and Levinson 1993: 50) if the underlying conceptual basis was a universal off-the-shelf Cartesian coordinate

system with orthogonal axes in three dimensions, so Chintang adds to the ample evidence (cf. Levinson and Wilkins 2006) that axes of a coordinate system underlying semantics need not all be orthogonal to each other in order to be functional.

With so many situational, subjective, thus (in a certain sense) “deictic” influences on the use of the altitudinal terms, it becomes clear that Chintang speakers are not any less prone to miscommunications about spatial reference than speakers of other languages who do not agree on relative ‘left’ and ‘right’. Their use of an “absolute” frame of reference does not liberate interlocutors from the “relativity” of expression and the pragmatic necessity to find out what their partner in the conversation had in mind when he used a particular term.

Given these various uses of ‘up’, ‘down’ and ‘across’, I have already refrained from glossing the terms as ‘uphill’ etc., as there are not always hills involved. In order to indicate that resolving the reference of altitudinal terms requires more than a mere lookup in the lexicon, and because the altitudinal semantic system pervades Chintang grammar in domains outside demonstratives and spatial adverbs as well, I shall gloss altitudinal terms in small capitals (UP/DOWN/ACROSS).

6.2.2 Altitudinal locative cases

In addition to the demonstratives, Chintang also distinguishes altitude for locative case marking, a trait attested for other Kiranti languages as well, but not found anywhere outside the family according to Ebert (1999: 105).

LOC.UP	-bandu	<i>khimbandu</i> ‘at the house up there’
LOC.DOWN	-bamu	<i>khimbamu</i> ‘at the house down there’
LOC.ACROSS	-bayu	<i>khimbayu</i> ‘at the house over there’
LOC	-peʔ ~ -i ~ -ba	<i>khimbeʔ</i> ‘at the house’ (neutral)

Table 6.2: Altitudinal locative case markers

The altitudinal case markers are deictic in that the Ground for determining the relative altitude of the Figure is always the deictic center. Presumably for this reason, the general deictics (section 5.1) do not inflect for altitudinal case (**babandu*, **humbamu* etc., but see section 8.2.2). The absolute demonstratives (section 6.2), however, like lexical nouns, do also take the corresponding altitudinal case,⁴⁴ although the added redundancy does not change their meaning compared to inflection with the neutral locative: *tobandu* is equivalent to *toba*, both signaling that F is located ‘up’, outside the reach of the speaker. Combinations where the demonstrative and the case marker would point in different directions (**tomu*, **mondu* etc.) are not permissible.

⁴⁴The different formal behavior of general and altitudinal demonstratives in this respect once again underlines the necessity of distinguishing different kinds of deixis on semantic and pragmatic levels.

An obvious approach to analyzing these forms would be to view them as altitudinal extensions *-tu/-mu/-yu* (cf. the altitudinal demonstratives) to the *-ba* neutral locative case allomorph. But this would at least not be the whole story, as it does not explain the obligatory deictic meaning component present in the altitudinal locative cases, but not in the neutral locative: The altitudinal cases cannot express relative altitude to a Ground other than the deictic center. Attempts at doing so result in ungrammaticality, as in (24) (cf. section 8.6).

- (24) * *sɨŋraŋko/sɨŋraŋbeʔŋa khimbandu*
sɨŋraŋ-ko/sɨŋraŋ-peʔ-ŋa khim-bandu
 tree-GEN/tree-LOC-MED house-LOC.UP
 intended: ‘at the house up there from the tree’

The altitudinal cases may, however, serve as bases for additional case markers and case compounding, so directive *khimbanduʔni* ‘towards the house up there’ and ablative *khimbanduʔŋa* ‘(away) from the house up there’ conform to the case compounding patterns observed elsewhere (Poppitz 2008). I assume that directional assignment of the slope governing the application of the altitudinal cases is subject to the same mapping operations as that of the altitudinal demonstratives, but data are too scarce to make a definitive commitment on this.

6.2.3 The vertical dimension proper

As hinted at on various occasions already, in addition to the altitudinal terms in ecomorphic mapping, there is another opposition of terms firmly rooted in the vertical dimension “proper”, as it were. *tem* ‘above’ and *bheĩ* ‘below’ always remain aligned with the axis defined by gravity, with the following two exceptions: First, as mentioned in section 5.3, the use of *bheĩ* is extended to intrinsic ‘bottom’ for want of another term. Second, the *tem/bheĩ* axis may be tilted to the slope of local hill inclination, to the effect of small-scale geomorphic mapping. Thus, a speaker located between two houses at different altitudes can refer to *atembeko khim* ‘the house above me’ and *abheĩbeko khim* ‘the house below me’, a qualification that is also available to second and third person Grounds with the appropriate possessive prefixes.⁴⁵ This requires, however, that there is an actual, noticeable difference in elevation between the two houses—on level ground, mere relative proximity to a mountain makes a house *tobako* as outlined above, but not *tembeko*.

Unlike the altitudinal terms, this “vertical” series can also, albeit rarely, have temporal significance, with *tem* ‘above’ meaning ‘earlier than; before; ago’, as in

⁴⁵The terms tend to occur more frequently in possessed form, but need not; unlike with the “true” intrinsic or part terms from section 5.3, all speakers were happy with bare *tem* and *bheĩ*. Neither do the unpossessed stems imply a deictic (speaker-centric) reading, nor does a third person possessive prefix imply any specific Ground object.

- (25) *utembeko* *muĩma* *mahimago* *riŋ*
u-tem-peʔ-ko *mund-ma* *mai-bid-ma-go* *riŋ*
 3SPOSS-above-LOC-GEN forget-INF NEG-finish-INF-NMLZ story
 ‘an old unforgotten story [of mine]’ (song_intro.001)

and *bheĩ* ‘below’ meaning ‘later than; after’:

- (26) *humbe* *bheĩbeko*
huN-peʔ *bheĩ-peʔ-ko*
 DEM.DIST-LOC below-LOC-GEN
 ‘after that’ (tangkera_01.127)

or ‘below [in the social order defined by age]’, where the vertical dimension may either refer to temporal posteriority or to social rank, as in

- (27) *anisa* *akka* *bhanda* *ubheĩbeko*
a-nisa *akka* *bhanda* *u-bheĩ-peʔ-ko*
 1SPOSS-younger.sister 1S.PRON than 3SPOSS-below-LOC-GEN
 ‘my younger sister’,
 i.e., ‘my younger sister who, compared to me, is below [in age]’ (khim_ring.059)

and similarly in

- (28) *ubheibeko* *amma*
u-bheĩ-peʔ-ko *a-ma*
 3SPOSS-below-LOC-GEN 1SPOSS-mother
 ‘my mother [is the] younger one’ (warisama_talk.013)

More systematic study of these expressions and their conceptual and, in particular, cultural correlates would have to clarify whether this is indeed indicative of a construal of time as moving upwards, so that events begin ‘below’ and are situated further ‘above’ the older they get (cf. Boroditsky 2001)—similar semantic structures seem to exist in Puma and other Kiranti languages (Diana Schackow, Vishnu Singh Rai, p.c.). Consultants deny, however, that they can ascribe any temporal significance to *tem* and *bheĩ*, so if it is correct that such a temporal reading does exist, it is at least not a very productive means in discourse, and it is limited to what I have called the “vertical dimension proper”: I found no trace of similar uses of the altitudinal demonstratives.

6.3 Relative

It is difficult to ascertain whether Chintang makes use of a relative frame of reference at all. Trying to change the way the observer looks at the object in question (as in Friederici and Levelt 1990; Carlson-Radvansky and Irwin 1993), e.g. by lying down, yields nothing but intrinsic and absolute designations.

Furthermore, as outlined above (section 6.1), applicability of ‘left’ and ‘right’ does not extend beyond arm’s reach. Even within close range, speakers were uncomfortable assigning *-bulam/ -phusurub* ‘front’ and *-theysi* ‘back’ to unfeatured objects, which strengthened my conviction that the use of these depends on intrinsic features of the Ground—which in turn would preclude relative ‘left’ and ‘right’, as assignment of *beñwa* and *cuptaŋ* conceptually hinges on prior determination of a *-bulam/-phusurub* side from which other sector designations can be derived by rotation (cf. section 6.1). Taking the intrinsic terms and leaving out the possessive prefix does not make the terms any more “relative”, either: Speakers say they may be able to resolve reference pragmatically, and in fact in ordinary spoken discourse they frequently do leave out the possessive prefixes on Ground object parts, but when prompted for such forms individually, they insist that the prefixes should be there, for otherwise it would not be “proper” Chintang.

My consultants *could* apply relative ‘front’ and ‘back’ terms to unfeatured objects, but those were the corresponding Nepali relational nouns *agadi* ‘(in) front (of)’ and *pachadi* ‘(at the) back (of)’. As borrowing is hard to tell apart from code-switching at least with my bilingual consultants, and as Chintang is under heavy pressure from Nepali anyway, I do not dare to guess to what extent these terms are integrated into the genuine Chintang system of spatial reference. They may carry Chintang possessive prefix inflection to indicate a Ground, but as intraverbal codeswitching is also a frequent phenomenon in present-day Chintang (contrary to older assumptions on code-switching that did not permit switches within words) for both lexical stems and inflectional morphemes, this cannot serve as a criterion for measuring integration, either.

In the absence of convincing evidence to the contrary, then, I take it that Chintang does not make use of the relative frame of reference, or at least not in a way prominent enough to come to my attention.

7 Motion

As I did not yet collect frog stories (based on Mayer 1969 or similar, cf. Slobin 2004), pear stories (cf. Chafe 1980) or the like, nor elicit complex motion events, and as I am still only beginning to understand how exactly the highly complex system of verbal aspect marking in Chintang works (which may be expected to bear heavily on descriptions of motion in space), I am not presently in a position to give a reasonably informative overview of motion descriptions.

As for expressing motion in the focal area of the present study, the nominal domain, it may just be noted that the nominal Source of a motion event is canonically encoded in ablative case (i.e., LOC+MED, where the locative may be neutral or altitudinal), while a Goal receives directive case marking, or plain locative case (neutral or altitudinal) if it is conceptualized as the end point of the motion event.

Nonetheless, one kind of verbal motion expression is so obvious that it deserves very brief mention here: Motion towards the deictic center by means of the verbs for ‘come’ and its semantic causative, ‘bring’. As with the locative case markers, in addition to a “neutral” form, these verbs also come in a series specified for relative altitude to the deictic center, as in Table 7.1.⁴⁶

	‘come’	‘bring’
UP	<i>kaiʔma</i>	<i>kaiʔma</i>
DOWN	<i>kuŋma</i>	<i>kukma</i>
ACROSS	<i>thapma</i>	<i>thapma</i>
neutral	<i>tama</i>	<i>taiʔma</i>

Table 7.1: Altitudinal deictic motion verbs

(after Rai *et al.* 2005)

That the altitudinal distinction pervades the verbal realm, especially with regard to verbs containing deictic elements, is not uncommon in Kiranti. What is strange, however, is that Chintang only distinguishes altitude for motion towards the deictic center in verb stems, and not also, like many other Kiranti languages, away from it.⁴⁷

⁴⁶ *-ma* marks the “infinitive”, the traditional citation form.

⁴⁷ It is not impossible that there are compound or “vector verbs”, or aspect marking devices, for that matter, which do make such a distinction.

According to my consultants, the origo behind the semantics of these verbs is always the deictic center, the location of the speaker at the time of the utterance. As for *Deixis am Phantasma*, the verbs do permit transposition under full detachment (as in quoted speech), but no partial detachment or transposition to a secondary deictic center as in English *come there* (cf. chapter 4).

8 Deictic transposition in Chintang and Belhare

Based on the general understanding of the encoding of space in Chintang as developed in the preceding chapters, I can now finally approach the question that triggered the present investigation in the first place: Do Chintang demonstratives exhibit grammaticalized deictic transposition, akin to what Bickel (2001) described for Belhare?

8.1 Deictic transposition in Belhare

Belhare is a Kiranti language of Eastern Nepal, closely related to Chintang (both genealogically and geographically, cf. section 1.4). Like Chintang, it employs an absolute frame of reference system derived from hill inclination (“environmental space” in the terms of Bickel 1994, 1997, 2001) that pervades many domains of linguistic expression, demonstratives and verbs as well as case inflections and even interjections.

Altitudinal demonstrative roots of Belhare come in two variants distinguished by their vowel nucleus (see Table 8.1 on the next page): a “plain” series with *-u-* signifying a Figure above, below or across from the deictic origin (typically the “I-here-now” of the speech act situation), and a series with *-o-* that signals transposition of the origo or “zero-point” of a secondary deictic field away from the primary deictic origin (cf. below and Bickel 2001).

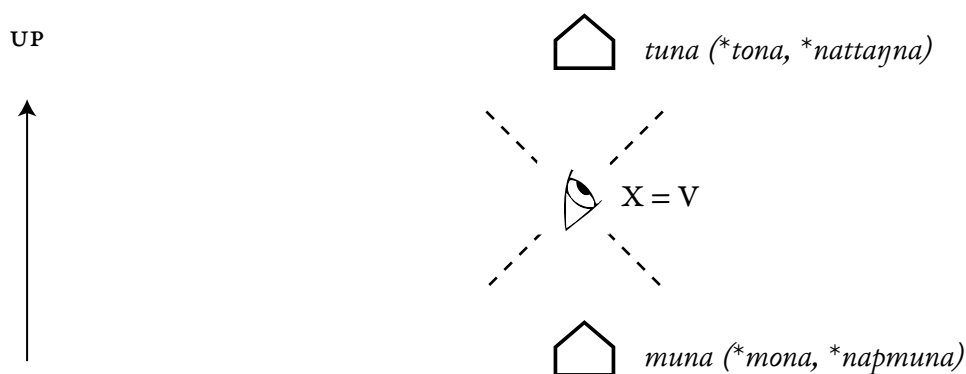


Figure 8.1: Reference from the deictic origin in Belhare

(after Bickel 2001: 229)

	UP	DOWN	ACROSS	DEM.PROX	DEM.DIST
LOCATIVE	<i>tu-ba</i> <i>to-ba</i>	<i>mu-ba</i> <i>mo-ba</i>	<i>yu-ba</i> <i>yo-ba</i>	<i>ne-e</i>	<i>i-ne-e</i>
DIRECTIVE	<i>tu-lleŋ</i> <i>to-lleŋ</i>	<i>mu-lleŋ</i> <i>mo-lleŋ</i>	<i>yu-lleŋ</i> <i>yo-lleŋ</i>	<i>na-leŋ</i>	<i>i-lleŋ</i>
MEDIATIVE	<i>tu-llam</i> <i>to-llam</i>	<i>mu-llam</i> <i>mo-llam</i>	<i>yu-llam</i> <i>yo-llam</i>	<i>na-lam</i>	<i>i-llam</i>

Table 8.1: Case inflection of Belhare demonstratives

(after Bickel 2001: 226)

The *-o-* forms serve to mark contrasting locations, as in (29), which directs the addressee to turn a pig upside down for slaughtering.

(29) Belhare

<i>tolleŋ</i>	<i>molleŋ</i>	<i>leŋma</i>	<i>kbeyu</i>
<i>to-lleŋ</i>	<i>mo-lleŋ</i>	<i>leŋ-ma</i>	<i>kbe-yu</i>
UP.TR-DIR	DOWN.TR-DIR	turn-INF	[3 SG.A-]must-NPST

‘One should turn it upside down.’

(Bickel 2001: 228)

Contrast alone, however, is not enough for *-o-* terms to be applicable:

The forms furthermore require that the two [contrasting locations, T.D.] are at different places than the speaker. This implies that the zero-point from which the “up”, “down”, and “across” directions are determined, must be distinct from the deictic origin in such a way that the speaker looks at the relationship between contrasting locations from outside.

(Bickel 2001: 228f.)

In addition to the altitudinal roots, Belhare also features altitudinal case marking just like Chintang, differentiating places higher, lower, or on the same level as the deictic origin. These cases are available to ordinary nouns as well as to the deictics without angular specification (cf. Table 8.2), so that a Figure higher than the X can be referred to by *tuba/toba* ‘up (there)’ as well as by *nattəŋ/inattəŋ* ‘up/up there’, and likewise for the other quadrants, yielding a system of systematic oppositions between altitudinal roots with altitude-neutral case inflection on the one hand, and frame-of-reference-neutral demonstratives with altitudinal case marking on the other.

The interaction between these two systems is then exploited as a means to convey subtle differences in conceptualization of spatial (and, by extension, also social) relations and boundaries. The terms can be used as a grammaticalized means of evoking a secondary deictic field centered

<i>na-ttaŋ</i> ‘up’	<i>i-na-nattaŋ</i> ‘up there’	<i>mi-ttaŋ</i> ‘at the fire up there’
<i>na-pmu</i> ‘down’	<i>i-na-pmu</i> ‘down there’	<i>mi-pmu</i> ‘at the fire down there’
<i>na-ʔya</i> ‘across’	<i>i-na-ʔya</i> ‘over there’	<i>mi-ʔya</i> ‘at the fire over there’

Table 8.2: Altitudinal locative case inflection in Belhare

(after Bickel 2001: 227)

on a point other than the deictic origin, but yet not fully detached from it. In Figure 8.2, the simplex UP term *tuna*⁴⁸ is not available if one wants to refer to the upper of the two houses; instead, the *-o-* variant is used. For reference to the lower house, neither the *-u-* nor the *-o-* altitudinal demonstrative is available. Instead, the house is *naɸmuna* ‘the one down here’, with the neutral proximal deictic inflected for altitudinal case plus the enclitic article =*na* (cf. Tables 8.1 and 8.2).

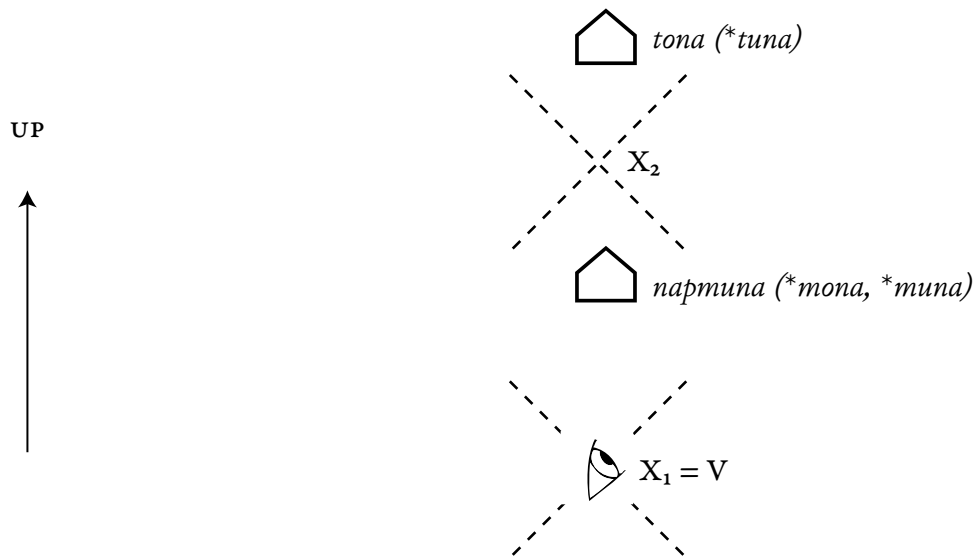


Figure 8.2: Reference with a transposed zero-point in Belhare

(after Bickel 2001: 229)

In the analysis of Bickel (2001), this is due to a transposition of the zero-point away from the speaker that opens up a secondary deictic field centered at X_2 , which can, but need not, coincide with an actual object in that location. This transposition is grammaticalized, signaled by the *-o-* vowel in the altitudinal root.

Crucially, however, the transposition is not complete: The secondary coordinate system is not independent of the deictic origin at X_1 , evidenced by the fact that the lower house is not *mona*,

⁴⁸=*na* is an enclitic article signifying specific reference, so that *tuna* translates as ‘the up(hill) one’

as would be expected if reference to it proceeded from X_2 alone. The house is in the quadrant projected from X_2 which faces X_1 , and it is this proximity to the deictic origin that gives the proximal demonstrative precedence over a transposed altitudinal.

8.2 Chintang parallels

8.2.1 Altitudinal *a-* and *u-* terms

In addition to the plain (or “simplex”) terms listed in section 6.2, Chintang has a series of these items prefixed with *a-* and *u-* (see Table 6.1 on p. 56), which make use of the same absolute frame of reference. With the exception of their root vowel being *-u-* instead of *-o-*, they formally behave exactly like the simplex ones, both with regard to morphology (in that they inflect for the same cases by taking the same case allomorphs) and syntax (in that they fill the same syntactic positions and thus qualify as belonging to the same syntactic category as their respective simplex counterparts). In discourse (as recorded in the corpus), the *a-* and *u-* series at times alternate with the simplex forms under constant reference, i.e., pointing to the same entity. The precise semantics of these forms therefore called for further investigation, which I attempted to undertake and report below. As a working hypothesis, it would be plausible to assume that, similar to what we observed for topological relations (cf. section 5.3) and in the intrinsic frame of reference (cf. section 6.1), one can specify the Ground object by a pronominal possessive prefix, and provide a search domain as the UP/DOWN/ACROSS quadrant projected off that pronominal Ground. This would yield predictions like that *atuba* refers to something ‘upwards of the speaker’, or that *utuba* would translate as ‘up there’ (i.e., in the UP quadrant of some point of reference other than the speaker). Additional support for a hypothesis supposing that the prefix introduces an extra point into the deictic system is provided by the observation that my consultants frequently rendered expressions like *utu?ni* as ‘up to that’ when trying to translate them into English.⁴⁹

8.2.2 Altitudinal *ba-* terms

Yet another series of terms for spatial reference in Chintang makes use of the absolute quadrants as directed towards the speaker, thus bringing a genuinely deictic element (the speaker’s location) into the system that otherwise relies on specification of angles with respect to landmarks in the environment.⁵⁰ Depending on the analysis of the spatial case morphemes (cf. section 6.2.2), the

⁴⁹Note that under a plain analysis in which the *u-* prefix introduces a third person Ground, *utu?ni* should more appropriately translate as something like ‘upwards from that’. This is all the more reason to test the applicability of the terms in situated contexts, see below.

⁵⁰In the taxonomy of Levinson (2003: 66), this system would not qualify as deictic and would probably have to be analyzed within the relative frame of reference, as the Levinsonian category “deixis” does not permit frame of

form of the terms (see Table 8.3) could be analyzed in two obvious ways: They could consist of spatial case (or spatial case compounding of locative *-ba* plus an ‘altitudinal’) on a host that is not phonologically realized and signifies the position of the speaker. Alternatively, in a “positivistic” way, they could be analyzed as simplex altitudinal case on the proximal deictic root *ba* (cf. section 5.1).⁵¹ Support for the latter analysis stems from the observation that these forms take the locative allomorph *-ba*, which would be (synchronically) redundant if there was already a (synchronically transparent) locative *ba* incorporated. Despite the propensity of the language to flexibly stack multiple cases on top of each other and to copy instances of morphemes around other morphemes, to my knowledge (and to that of Poppitz 2008), two instances of the same case morpheme on the same host are not attested.

	UP	DOWN	ACROSS
LOCATIVE	<i>bandu(ba)</i>	<i>bamu(ba)</i>	<i>bayu(ba)</i>
DIRECTIVE	<i>banduʔni</i>	<i>bamuʔni</i>	<i>bayuʔni</i>
MEDIATIVE	<i>bandulam</i>	<i>bamulam</i>	<i>bayulam</i>
ABLATIVE	<i>bandubaŋa</i>	<i>bamubaŋa</i>	<i>bayubaŋa</i>
LATIVE	<i>bandupatti</i>	<i>bamupatti</i>	<i>bayupatti</i>
GENITIVE	<i>bandubako</i>	<i>bamubako</i>	<i>bayubako</i>

Table 8.3: Spatial case paradigm for the altitudinal *ba-* terms

The altitudinal *ba-* terms inflect for case just like the other demonstratives, with *-ba* being optional for the general locative proper, but an obligatory element in the ablative and the genitive formed on its basis by a Priscian rule. Note that the vowel of the ‘altitudinal’ stems is *-u-* instead of *-o-* again, as with the altitudinal case forms (cf. section 6.2.2) and the *a-* and *u-* forms of the altitudinal demonstratives above (section 8.2.1). Unlike the latter, however, the *ba-* forms cannot take either of the *a-*, *i-* or *u-* prefixes.

The semantic range is also similar to the proximal demonstrative: Referents which are *bandu* (and likewise for the other sectors, each plus appropriate case markers) can only be within easy reach of the speaker. Unlike the *to/mo/yo-* based terms, sectors defined by *ba-* do not extend infinitely. Instead, the *ba-* terms become more and more acceptable as the distance between the speaker and the Figure object decreases and, in case of reference to featured Figure objects with a canonical orientation, the more the referent is oriented towards the speaker.

reference information. As I do not have any independent justification for positing a relative frame of reference for Chintang spatial terms (cf. section 6.3), I abstain from such an analysis here.

⁵¹Which would leave the investigator to explain the *ba* element in the case morphemes on lexical nouns.

Furthermore, it is interesting to note that the terms reverse the altitudinal specification of the simplex absolute altitudinal roots (section 6.2), or apply in a mirror-image fashion, with the roots usually designating a higher altitude here referring to the quadrant “below” the speaker, and vice versa. Thus, a Figure which is *bamuba* ‘down here’ is in the sector that would otherwise be *toba* ‘up’, and *mutatis mutandis* for the other sectors (cf. Figure 8.3). This warrants an analysis of the semantics of these terms as referring to sectors directed ‘at/towards the speaker’ rather than just being ‘with the speaker’.

A related argument for an analysis of *ba-* as the proximal demonstrative and directed towards the speaker stems from the observation that movement descriptions to places designated by *ba-* terms require a ‘come’ verb, with a lexical indication of movement towards the deictic origin, and disallow plain ‘go’ verbs. Thus, it is correct to say

- (30) *bamu* *kunsa!*
ba-mu *kun-s-a*
 DEM.PROX-DOWN come.DOWN-IMP
 ‘Come down here!’

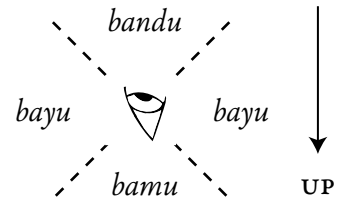


Figure 8.3: Applicability of altitudinal *ba-* terms

Alternatively, one could have used the altitude-neutral verb *tama* ‘come’ in (30). The (otherwise very general) ‘go’ verb *khatma* is not available when requesting an addressee to move towards a place designated by a *ba-* term, hence **bamu kbara* is ungrammatical.

In the ACROSS quadrants, *bayu* serves a peculiar extra purpose which poses an additional source of potential confusion to both speakers and researchers. Since ACROSS covers two quadrants, reference with *yo* is ambiguous between those two. In that situation, the interplay between *yo* and *bayu* can be employed to disambiguate ACROSS reference. When a Figure further away from the speaker in an ACROSS quadrant is *yoba*, then *bayuba* is applied not only to Figures closer to the speaker in the same quadrant, but also to the entire opposite ACROSS quadrant (irrespective of the actual distance to the Figure and the orientation of both Figure and speaker), for which *yoba* is strongly dispreferred when it has already been assigned. When speakers simply point and enumerate quadrants without locating a particular Figure, it is natural to give the quadruplet *toba*, *moba*, *yoba*, *bayuba*, usually in this order, but always with *yoba* preceding *bayuba*. This pragmatically removes the ambiguity between the two ACROSS sides within the system, i.e., makes unique reference to each quadrant possible.⁵² However, it still does not unambiguously lock (or anchor) the two ACROSS quadrants into features of the environment (however conceived, cf. section 6.2.1). *bayu* then is simply the ACROSS quadrant that is not *yo* (and not *ayu-* or *uyu-*, either, as these

⁵²In theory and when explicitly prompted, both ACROSS quadrants remain accessible to *yo* reference. *bayu* reference to one of them is always cancelable, and hence qualifies as a pragmatic inference rather than a semantic implication.

may also partake in the opposition to *bayu*), with the accompanying assumption that the speaker will assign *yo* first, and misunderstandings may ensue over this just like over any other mapping operation (cf. section 6.2.1).

8.3 Parallel structures in Chintang and Belhare?

Like Belhare, then, Chintang has two distinct morphological systems for referring to sectors projected *from* a Ground (the *to/mo/yo* series) or *towards* a Ground that is coincident with the speaker (the *bandu/bamu/bayu* series). It is worth noting that the exact same two sets of root forms (*to/mo/yo* vs. *tu/mu/yu*) feature in both Chintang and Belhare. However, while Belhare uses the *-u-* series as the simplex forms and the *-o-* terms to indicate a transposed zero point, Chintang employs the *-o-* forms in the morphologically and semantically simplex items.

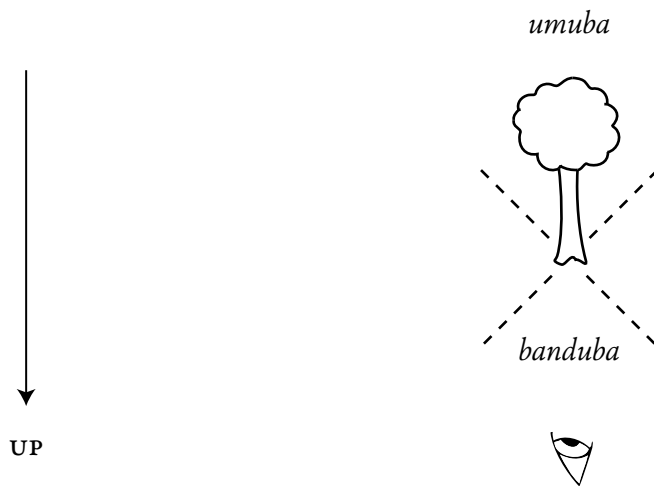


Figure 8.4: A possible description in Chintang

A description of Figures in the setup in Figure 8.4 in the two Chintang systems is structurally highly reminiscent of Belhare. On a clear space on level ground with only one obvious candidate for a point of reference in the middle of the scene (the tree in the example scene in Figure 8.4),⁵³ a Figure object further away from the nearest hill than the tree (i.e., DOWN) can be said to be *umuba*,⁵⁴ while the region between the speaker and the tree can be referred to as *bandu* ‘UP here’.

⁵³For this and all of the following scenes drawing on the same paradigm: in addition to testing the configurations under indoor “lab” conditions in imaginary landscapes, and to asking consultants about possible labels whenever an opportunity arose in everyday interaction, the configurations reported here as generalized abstractions were also deliberately “acted out” with consultants under the same controlled conditions on a life-sized square with a tree in the center at Tribhuvan University Campus, Kirtipur (between the Central Departments of Mathematics and of Chemistry, to be precise), with various Figure and Ground objects, and from various angles.

⁵⁴Henceforth, my quoting the form for only one quadrant may be taken to imply that reference to the other sectors proceeds accordingly, unless noted otherwise.

This looks exactly like the Belhare configuration in Figure 8.2 with *toba* ‘up on the other side’ and *napmu* ‘down here’.

Given these striking formal parallels and the fact that the two languages are closely related both genealogically and geographically, it is worth investigating whether the semantics of the Chintang system also parallels Belhare. An obvious hypothesis is that in analogy to the transposition system outlined above (cf. section 8.1), Chintang uses the forms prefixed with *u-* to indicate sector assignment from a Ground other than the speaker which functions as the origin of a secondary coordinate system or deictic field, and the *ba-* series to denote the sector projected off that secondary origin that faces the speaker (or the origo of the primary coordinate system). This hypothesis shall now be tested.

8.4 Evidence

A first piece of evidence against the transposition hypothesis just outlined is the observation that the *to/mo/yo* roots cannot take an *i-* prefix. If the prefixes performed the same functions on the *to/mo/yo* series as they do on the topological and intrinsic terms described in sections 5.3 and 6.1, respectively, i.e., specify a pronominal Ground, one would *prima facie* presume the prefix series to cover all grammatical persons, and all grammatical persons to be signifiable by a prefix. Unlike in the topological and intrinsic systems, this presumption is not borne out by the absolute roots: In the topological and intrinsic realms, *athɛŋsibe?* (*a-thɛŋsi-pe?* 1SG.POSS-back-LOC ‘at my back’ / ‘behind me’), *ithɛŋsibe?* ‘at your back’ / ‘behind you’, and *uthɛŋsibe?* ‘at his/her/its back’ / ‘behind him/her/it’ are equally possible. Even though the absolute roots take *a-* and *u-* (plus root vowel alternation), which elsewhere, in full accordance with their function as possessive prefixes, indicate a first or third person Ground, respectively, forms like **iyuba* (intended: 2SG.POSS-ACROSS-LOC ‘across from you’) do not exist and hence are ungrammatical in positions ②, ④, and ⑤ in Figure 8.5 (and, as a matter of fact, in any other position as well). In order to express ‘across from you’, one would instead use the periphrastic construction

- (31) *hanako* *yoba*
 hana-ko *yo-ba*
 2SG.PRON-GEN ACROSS-LOC
 ‘across from you’

More compelling than this formal observation are arguments from semantics, of course: If the *u-* series introduces a third person Ground, and if there is only one candidate object available, one would assume that the two quadrants ACROSS from the tree in Figure 8.5 can be referred to with *uyu-* terms. But this is not the case: *uyuba* cannot apply to either ② or ④. It does apply, however, to position ⑤, which is in the ACROSS quadrant of the speaker.

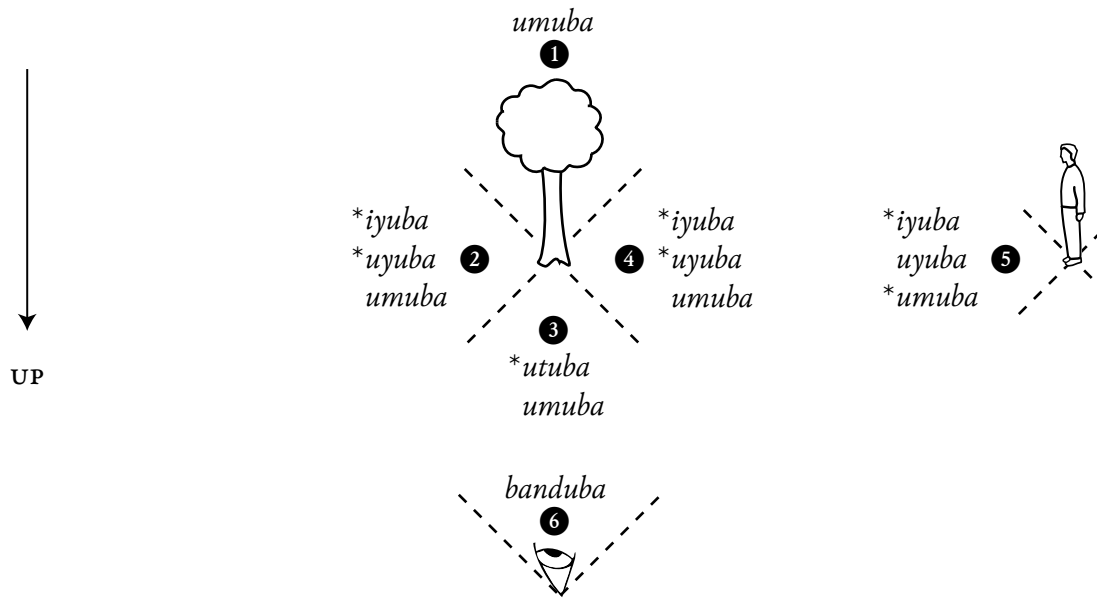


Figure 8.5: A closer look at some possible descriptions

Conversely, a Figure in positions ③ and ⑥ is upwards from the presumed origo of a potential secondary coordinate system centered on the tree. As a consequence, the transposition hypothesis predicts that such a Figure could be *utuba*, but this is unanimously rejected by speakers. *utuba* at ③ is not blocked by an obligation to use *banduba* for the entire sector: Only if the Figure is close enough for the speaker to touch it or reach it easily, as in ⑥, the *ba-* terms become available, and the *u-* terms decrease in acceptability the closer the Figure gets to the speaker. Instead, the DOWN form *umuba* can apply to ③ just as to ①, and to ② and ④ as well, all being in the DOWN quadrant of the speaker.

The unacceptability of *utuba* is also not due to *banduba* being used in the quadrant at all, or the speaker being present in that sector: Even if the speaker is located in another quadrant projected off the tree (as is, for instance, the person close to ⑤), where there is no way of applying *banduba* to either ③ or ⑥, still none of the numbered points in Figure 8.5 can be *utuba*. As for non-stationary entities, someone moving from ③ to ⑥ can under no circumstances be felicitously described as

- (32) *utu?ni kha?no*
u-tu-ni kbat-no
 u-UP-DIR go-IPFV
 ‘he is going up’

He can, however, be described as *bandu?ni kha?no* if the speaker is reporting from his position at ⑥ as above.

8.5 Function of *a-* and *u-*

As the above demonstration suggests on both formal and functional grounds, *a-* and *u-* prefixed to the altitudinal roots bear no (synchronic) relation to *a-* and *u-* (and *i-*) prefixed to “ordinary” nouns. If they do not function as possessive prefixes to indicate a Ground like they do in the topological and intrinsic systems, then what else is their business on the altitudinal roots?

A first observation is that they add an extra degree of distance to the system of linguistic reference: A referent described as *utuba* or *atuba* is further away than *toba* would have been. While differences in distance can also be indicated by mere iconic lengthening of the simplex expressions, the prefixed forms permit a “digital” contrast between categorical levels rather than just gradual mapping.⁵⁵

A closer look at situated contexts reveals a dialectal difference between Sambugaũ and Mulgaũ. In the former dialect, *a-* and *u-* forms can be freely substituted for each other. According to Sambugaũ speakers’ intuitions, the two series mean exactly the same, and a (synchronic) meaning difference did not emerge anywhere during my research. Thus, until there is evidence to the contrary, both *a-* and *u-* can comfortably be glossed as just ‘DIST’ when prefixed to the altitudinal roots in Sambugaũ.

In Mulgaũ, however, there are contexts in which only one of the forms is applicable. Take the following scene (N^o 16 in the demonstrative questionnaire, see p. 114): The speaker is sitting at one end of a large cleared space, together with a third person. The addressee is 100+ meters away and busy with an object that the speaker wants to refer to (here: a bicycle⁵⁶). Thus, the Figure object is distant from the speaker, but close to the addressee. The speaker could ask

- (33) *buŋgo saikal khaŋma alesoko?*
buN-ko saikal khaŋ-ma a-les-o-ko
 DEM-GEN bicycle⁵⁷ see-INF 2-like-3P-NPST
 ‘Do you like that bicycle?’ (demqRMR.16a)

with a demonstrative that is neutral with regard to frame of reference and just implicates non-proximity to the speaker (cf. section 5.1). She could just as well say

⁵⁵Iconic lengthening is also available for the root vowel of the prefixed forms, resulting in *ayu:ba*, *umu:ba*, etc. Preceding [i] at times partakes in the lengthening to yield forms like *at:u:ba* or *attu:ba*.

⁵⁶For sheer convenience in the situation that these examples are taken from. Referring to smaller objects that are easier to manipulate, like the balls and radios of Wilkins’ original questionnaire, makes no difference, a *kitab* ‘book’ yields the same result, but is pragmatically less suitable to talk about at this distance.

⁵⁷This is one of the cases where a codeswitching analysis for individual lexical items is to be favored over borrowing, as *saikal* is used “as is” and has not been integrated into Chintang morphophonology with the “nativizer” *-a*, which is otherwise frequently added to loanwords of all origins in order to make them more “Chintang”.

- (34) *utubako saikal khayma alesoko?*
u-tu-ba-ko saikal khay-ma a-les-o-ko
 u-UP-LOC-GEN bicycle see-INF 2-like-3P-NPST
 ‘Do you like that bicycle?’ (demqRMR.16b)

provided that the Figure object is in the UP quadrant. (In this case, the Figure object is in the UP quadrant of the speaker and ACROSS from the addressee. The precise configuration between the addressee and the Figure is irrelevant to the application of *utubako* in (34) as long as the Figure is in the speaker’s UP quadrant, which provides additional support for the “non-transposition” hypothesis as outlined in section 8.4 above and the view that the *a-* and *u-* prefixes are independent of person reference here.)

Up to this point, both Sambugaũ and Mulgaũ speakers agree on the kinds of expressions they allow. But while Sambugaũ speakers can exchange *utubako* in (34) for *atubako* (as everywhere else), Mulgaũ speakers disallow *atubako* here, on the intuition that the referent is “not far enough away” to be labeled with an *a-* term. When contrasted with *toba*, *utuba* is also available for objects within easy reach of speaker and addressee as long as they are further away than the objects that are *toba*. Upon closer inspection, there is some preliminary evidence that the conditioning factor of this *a-/u-* distinction is ultimately not spatial, but rather “social” distance: In the same basic configuration, with only the positions of addressee and third person exchanged (N^o 13 in appendix C, see p. 113) so that the addressee is now near the speaker, and the Figure object is with the third person, *atuba* is fine also with Mulgaũ speakers—unless, and this is telling, the speaker knows that the Figure object is hers or belongs to the addressee, in which case *utuba* is more appropriate. Property relations do not play a role in the description of the original scene N^o 16, where the addressee is close to the Figure.

If this is a viable hypothesis, it would lend support to a semantic analysis in which the *a-* prefix signals distance neither from the speaker alone nor from the addressee alone, but perceived distance from speaker and addressee together, irrespective of the spatial distance between speaker and addressee. In other words, *a-* would indicate distance from the speech act event involving both speaker and addressee, while *u-* would serve to signify distance from the speaker, but at the same time mark relatedness to the addressee.

Unfortunately, constraints on the time of the few Mulgaũ consultants to whom I had access did not permit me to elicit further contrastive scenarios like these and harden my suspicion. Obvious other contexts where one would expect such a distinction to play a role are the scenes 19–23 of the demonstrative questionnaire, which incorporate contrasts due to “social” boundaries in lived space. But the expressions I have been able to elicit for this set of scenes are inconclusive. If such boundaries exist in Chintang and have a grammaticalized reflex in Mulgaũ, I am inclined to believe that an examination of linguistic behavior as prompted by these scenes would yield more

fruitful results in traditional surroundings, where such social boundaries would be long established and rooted in cultural practice. Asking young speakers to create such boundaries *ad hoc* in an urban setting far away from their customary domain of applicability may obscure a subtle semantic difference like this (if it exists).

8.6 Selecting a different G

If all of the demonstratives with altitudinal or absolute specifications are by default interpreted as deictic, then how else does one select a Ground different from the speaker if not by attaching possessive prefixes like in the intrinsic frame of reference?

As already indicated by example (31), a Ground may be specified by adding it as a genitive-marked dependent into the altitudinal adverbial phrase, just as one would select a Ground for the intrinsic terms. Alternatively, the Ground may enter the same syntactic position in ablative case.

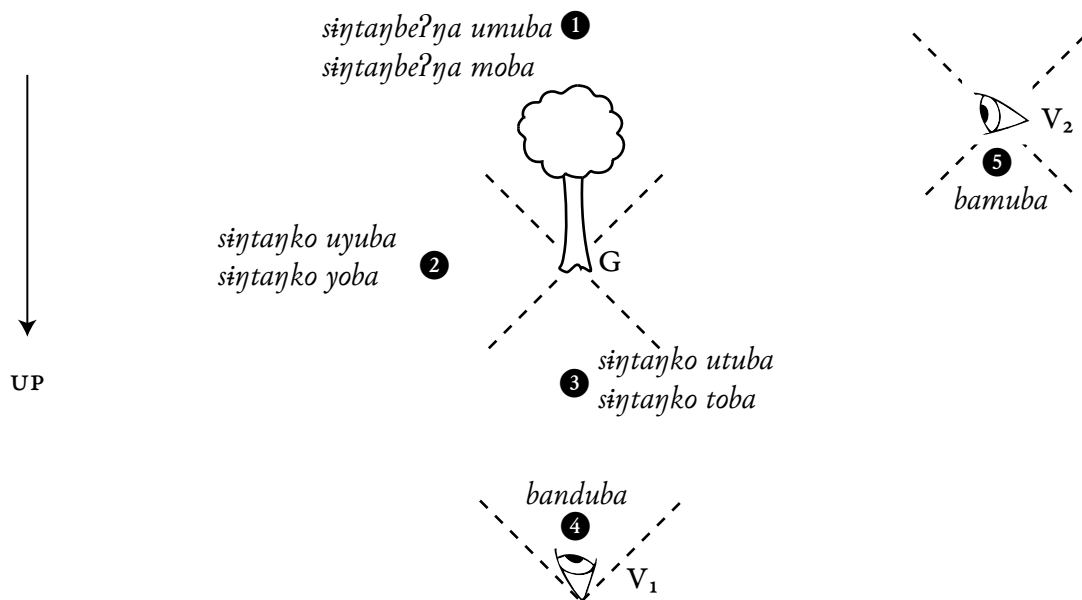


Figure 8.6: Selecting a Ground other than the speaker

Once the Ground is transferred to the tree, however, all of the sectors around it can be referred to by the *u-* and *a-* expressions, but also by the plain altitudinal adverbs (as in Figure 8.6). These, in turn, are then fully detached from the terms of the (always deictic) altitudinal *ba-* series in ④ and ⑤, and the coordinate systems centered on the tree and on the speakers at V_1 and V_2 , respectively, do not interact with each other: The *ba-* terms are available in all four quadrants around any one speaker and do not depend on a particular choice of term for the quadrants around the tree, and vice versa.

8.7 Transposition in Chintang?

For the reasons laid down in this chapter, then, I conclude that Chintang, unlike Belhare, does not permit transposition of the deictic center and opening up a secondary deictic field for the altitudinal demonstrative roots through grammatical means (by supplying a distinct set of demonstratives). This would also explain why none of the consultants ever used any *a-* or *u-* forms during the space game: Nothing in the tabletop setup is far enough away to be *uyuba*, and despite the transposition-enticing modifications of the original setup, neither the part behind the “creek” nor the recount of someone else’s journey through the landscape in third person requires *u-* and *a-* forms, simply because they have nothing to do with transposition of the deictic center. Banks of a river may be distinguished as *yoʔãpara* ‘the side across’⁵⁸ and *bayupara* ‘the side over here’, but this is due to pragmatic disambiguation of ACROSS (cf. p. 74) rather than to transposing the deictic center—both sides of the river in principle remain *yoʔãpara*. I therefore assume that the altitudinal demonstratives *to/mo/yo* and the altitudinal *ba-* terms do not constitute complementary parts of the same semantic system, but rather two distinct systems proceeding on parallel tracks: The altitudinal demonstratives with vectors pointing away from the speaker on the one hand, and altitudinal *ba-* with vectors pointing towards the speaker on the other, but both with their origo in the speaker. In the face of the evidence, this seems to be a simpler analysis to me, and hence (by Occam’s razor) preferable to a zero-point transposition analysis.

⁵⁸with the familiar deictic roots, पार *pār* ‘side’ from Nepali, and nativizer *-a*

9 Conclusions

9.1 Chintang and the larger picture

The study of nominal elements in the expression of space in Chintang provided evidence that two frames of reference underlie their semantics, the intrinsic and the relative. These two frames prove that space, for the purpose of linguistic description, may both be thought of as absolute and relative to objects even for everyday affairs. This gives both sides of the historical debate from section 2.1 a point, but disproves views that (at least linguistic) space is necessarily relative to an observer's perspective, as very few indications of an application of the relative frame of reference could be found. The viewpoint of the observer, however, is not entirely irrelevant, either: Given the multitude of expressions whose primary interpretation assigns the role of Ground to the speaker, I still consider the title of this thesis to be justified.

According to Nepalese sociologist Krishna Bahadur Bhattachan (via Novel Kishore Rai, p.c.), the use of indigenous (and in particular Kiranti) languages with their rich deictic systems was even a key political factor in the Maoist rebels' successful concealment and resistance in the jungles of Eastern Nepal during their struggle against the royal government: The structure of their language, Bhattachan claims half seriously, half humourously, forced them to specify the exact direction from which the enemy approached, unlike in the Royal Nepalese Army, commanded in the Nepali language, where the general deictic verb form *ayo* (come:PST) required the soldiers to look around and then be gunned down already by the time they identified the direction from which the rebels were advancing.

While it may be a bit far-fetched to claim that semantic relativity thus becomes a matter of life and death, we can at least conclude that the notion of deixis needs to be understood in a traditional, Bühlerian sense for Chintang. The restricted Levinsonian conception may be a valid generalization over a large portion of the languages under study, but given the many expressions that do not permit use with a Ground other than the deictic center and yet distinguish angles, it is of limited theoretical use here. Yet, Levinson himself (2003: 71) concedes that many expressions in many languages contain deictic components in the sense that they have the speaker as a Ground. He simply does not label them as deictic, as he prefers to accommodate them in other parts of the system he proposes. I take it, then, that this is more or less an idiosyncratic terminological issue, not least as the Levinsonian approach concentrates on space and leaves other kinds of deixis

without such categorial restrictions. Extending restrictions such as these to temporal deixis, for example, would amount to saying that there are only two temporal deictics, *now* and *then*, and denying deictic reference to tense forms because they specify more than just coincidence or non-coincidence with the speech time. This surely is a viable approach, but it shows even more clearly than in the spatial domain that the confined understanding of deixis does not capture the core of the traditional concept. Furthermore, Levinson (2003: 70) admits that the non-angularity of deixis is merely a strong tendency and does permit exceptions, such as in Eskimo languages (Jacobson 1984; Fortescue 1988) with rich systems of forms of “impure” (in Lyons’s sense, see chapter 3) deixis that combine purely deictic content with frame of reference information, much like we have observed in Chintang. Miller and Johnson-Laird (1976: 58) are right that both relative and absolute space need to be accommodated in a single theory, not least because they may co-occur in one and the same language, and in fact in one and the same word, as evidenced by the Chintang deictics.

It is true that deictics specified for more than just a vague radial vector carry more semantic information, and that their application is therefore restricted to a smaller subset of possible worlds than their frame-of-reference-free counterparts. Consider two persons P_1 and P_2 standing at different altitudes (however conceived), talking to each other. P_1 can refer to P_2 as *hana* ‘you (SG)’ (a person deictic), and to P_2 ’s position as *huĩ* ‘there’ (an orientation-free spatial deictic). P_2 can refer to P_1 and his position with the same terms. This does not hold for the altitudinal roots: If P_1 is *toba* from P_2 , then P_2 is *moba* from P_1 .

As for the deictics utilizing the absolute frame of reference, the analysis of Chintang put forward here holds that there are basically two different systems of deixis, one projecting vectors away from the speaker and one towards the speaker, which are also distinguished morphologically.

In the realm outside deixis, toponymy and topology, Chintang meets Molyneux’s question (cf. p. 25) with a fairly straightforward answer: There is functional “load shedding” between the frames of reference, with distance as the conditioning factor (within arm’s reach of Ground vs. beyond). Thus, the need for intertranslatability of coding of the same scene is minimized, as the distance between Figure and Ground usually calls for one frame of reference or the other, with the formal coding itself again (as with the deictics) more or less neatly indicating into which semantic framework it belongs.

In stark contrast to the semantic generality of locative *-peʔ* in topological description (cf. section 5.3), the altitudinal distinctions across the various classes of formal elements permit meticulous specification of the relation between Figure and Ground in the absolute frame of reference. Remaining vagueness or ambiguity then mainly results from the pragmatic uncertainty as to which exact entity is intended to serve as Ground, and which mapping operation to apply.

Furthermore, the altitudinal distinctions in demonstrative determiners, adverbs, pronouns, case markers and deictic verbs show that Chintang conforms to another important cross-linguistic observation (Levinson 2003: 98ff., Levinson and Wilkins 2006: 6), namely that spatial coding is not limited to one particular class of syntactic categories (such as spatial adpositions, Landau and Jackendoff 1993: 223), but distributed throughout the clause.

And finally, the question that initiated this whole study in the first place could be answered unequivocally in the negative: Unlike in Belhare, there is no sign of grammaticalized partial transposition in Chintang. The competing deictic systems proceed on parallel tracks and are not as pragmatically interlocked as in Belhare. This once again underlines that languages, even though closely related and formally very similar, may differ significantly in the exact distribution and semantics of their coding of spatial relations, which provides a good indication that semantic relativity as outlined in the introduction is real.

9.2 Outlook and perspectives for further research

Regardless of the observations made above, few of which are surprising or spectacular, the present study suffers from a plethora of shortcomings and leaves a number of issues unresolved.

First and foremost, it would have been much more informative to conduct the space game with “naïve” speakers in a more traditional environment, and in numbers that permit quantitative analysis of the use of the various coding strategies rather than just more or less anecdotal mention as has been undertaken here. These kinds of data are hard if not impossible to extract from the existing corpus, as the sessions therein have not been produced under comparable circumstances, and metadata as to orientation of the participants or the scene as a whole with respect to absolute directions have not been recorded and are therefore available only to observers familiar with the local environment in Chintang VDC.

There is good reason to assume that the spatial distinctions found in language feature in other aspects of life as well (cf. Bickel 1997, 2001). A full appreciation of the significance of spatial language, therefore, would have to include many other aspects of culture, for which my present understanding does not yet suffice.

However, the small set of data gathered through the space game is still far from being exploited to its full potential: Even though the sessions fail to reach quantitative levels of significance for space research, they may be of interest to students of referential density or information structure, for example.

As the detailed body of literature on deixis and topological relations in other languages demonstrates, the corresponding items in Chintang each would deserve much more detailed treatment

than just initial mention and attribution to a simple cross-linguistic typological framework as undertaken in this thesis.

Minor unresolved issues include the exact difference between *a-* and *u-* terms in Mulgaŭ as indicated in section 8.5, or the relation between the deictic root *ba-* and locative *-ba* which also features in the altitudinal case markers. I investigated my initial vague impression that there might be systematic formal differences with regard to aspiration/breathiness or likelihood of voicing the following obstruent as traces that might have testified to different diachronic origins of the two items, but none of my suspicions could be hardened. Of course, it would be desirable to arrive at a unified analysis, e.g. to view both of them as instances of a general (maybe historical) Ground marker that tends to be interpreted as deictic, but has lost its deictic quality under certain circumstances (so that it may synchronically also serve as a locative marker on Grounds other than the deictic center). However, a detailed diachronic analysis, which I have not yet undertaken, would have to precede such speculations before they could be asserted.

Excluding a transposition analysis for the *a-* and *u-* terms has saved Kirantology a major diachronic would-be puzzle, namely, why the transposed Belhare stems have the same vowel found in the non-transposed Chintang demonstratives and vice versa. Nothing has been said, however, as to what other factors could condition the *-o-* vs. *-u-* vowel alternation in the Chintang items. Given the observations on Mulgaŭ, it is not impossible that they once did distinguish different deictic centers and that this distinction merely bleached out over time. Alternatively, one may speculate that this alternation in Chintang is merely due to phonological assimilation processes, in the same way as *ucik* is sometimes realized as *icik* or *ucuk*—even though Chintang is not generally known for employing vowel harmony. On the other hand, forms such as *uyoba* are also, albeit very rarely, attested in the corpus. Here, too, thorough review of the data and detailed diachronic and comparative study is called for.

Similarly, one may wonder why so many Kiranti languages differentiate altitude for both *come* and *go* verbs (plus causatives, as causative interpretation often simply requires transitive instead of intransitive inflection of one and the same stem), and Chintang should do so only for *come*. On the basis of common-sense plausibility and presumed discourse frequency, one could argue that it is more important to specify an altitude when describing or requesting motion away from the deictic center than it is for motion towards the deictic center, where, at least in many canonical conversation situations, a second person addressee should already know the Source of the motion (his own location) as well as the Goal (by virtue of knowing where the speaker is), and thus the altitudinal direction should be self-evident. But even then, it would remain unclear why precisely Chintang of all related languages should lack (or should have lost) what is otherwise so common and obviously so deeply entrenched in the linguistic and cultural fabric.

On a different note, the documentation of adult Chintang is lucky enough to be flanked by a large body of longitudinal data on language acquisition in the speech community, so an obvious further direction of research would be to study the acquisition of Chintang spatial reference, inasmuch as it is still learned by children. It has been claimed (e.g. by Johnston and Slobin 1979; Slobin 1985), for example, that children learn topological relations earlier than other kinds of reference to spatial relations, an assumption which is not universally shared (see e.g. Brown and Levinson 2000). Ideally, such a corpus-based inquiry would be supplemented with experimental data, which again would require on-site fieldwork as long as there still are children learning Chintang. Observations so gained could guide assessment of universal claims about acquisition of semantic categories, and here deixis in particular (cf. Clark 1973), in the tradition of cross-linguistic research on the acquisition of topological relations (as exemplified by e.g. Bowerman 1996; Bowerman and Choi 2003). If similar data existed on the acquisition of Belhare with its intricate transposition system, this might shed more light (and from an entirely new angle) on escaping the pure “egocentrism” of the child (Piaget and Inhelder 1956)—I doubt that this has ever been studied with regard to relativity other than a relative frame of reference.

Most importantly (and owed in part to the fact that I did not have the opportunity to do on-site fieldwork in Chintang VDC with a substantial number of consultants), nothing has been said about the relationship between the Chintang language and cognitive preferences of its speakers with respect to the organization of space. I have, therefore, not taken a stance on the cognitive relativity question (1b), although it is to be expected that Chintang parallels other languages in that there are identifiable correlations between the structure of spatial representations in language and in other modalities. Anecdotally, I can testify to the ability of speakers to orient themselves with remarkable certainty also in unfamiliar environments and in the dark, which makes it seem plausible that they constantly compute (or dead-reckon) their absolute orientation for linguistic as well as extralinguistic purposes.

A detailed assessment of cognitive parallels to linguistic structures would have to take different other factors into account, such as the degree of linguistic competence in Chintang (which is probably correlated with age), and examine the impact that the language shift away from Chintang has on linguistic and nonlinguistic representations of space. But this, again, can only be studied on-site in a traditional setting with a sufficient number of speakers.

As with all endangered languages, research of this kind would have to be undertaken very soon, or it may not be possible anymore. For the time being, despite its inability to present spectacular new insights, it is my wish that the work at hand may serve to fill at least a few small blanks in the typological knowledge about some minor details of an individual language. If it succeeds in this, it was worth the effort.

Appendix

A Space Game

In order to systematically enrich the existing corpus with spatial language, additional prompting under controlled circumstances was called for. To this end, I had native speakers of Chintang play one of the “Nijmegen Space Games”, a route description task in the form of a matching game, originally conceived by Gunter Senft and David Wilkins in consultation with various colleagues at the Max Planck Institute for Psycholinguistics in Nijmegen, building on an earlier paradigm by Weissenborn (1986).

The desired elicitation result had to conform to multiple requirements: The texts elicited by means of this procedure should be maximally comparable to data from other languages collected with the same task. That is, the setup had to incorporate and follow the procedures laid out in the original July 1993 field manual of the then Cognitive Anthropology Research Group⁵⁹ as closely as possible in order to permit *ceteris paribus* comparisons of the reaction of speakers across different languages to the extent possible. At the same time, I strived to collect as much spatial language as possible in one sitting, and therefore expanded the original route description task by adding two additional sub-tasks that revolved around the same setup (see below).

Given the small number of potential players and various other imperfections (as noted below), the space game cannot be taken as a proper “experiment” for want of validity. For the same reason, hard (inferential) statistical analysis of any outcome forbids itself. Nevertheless, I consider the game a valuable tool for eliciting spatial language in (albeit not quite natural) discourse, and the texts it generated served me as a point of departure for further probing. Hence, the structure of the description below must not mislead into thinking that I am reporting a full-fledged psycholinguistic study. I will also not deliver any “results”, let alone an interpretation, of the space game alone. Rather, I have incorporated findings I have made along the way into the main body of this thesis, together with further observations from corpus-based research and individual elicitation.

The space game yielded a subcorpus of 13,273 words in 3,648 utterances, with the mean length of an utterance per session ranging from 3.3 to 7.3 phonological words.

⁵⁹I dare refer to this section of the manual as Wilkins and Senft (1993) so as to have a point of reference at all, without intending to suggest that this reference accurately captures the actual merits of those involved. The field manual was devised for internal use and has not been published; the route description game appears here by courtesy of the Language and Cognition Group at the Max Planck Institute for Psycholinguistics, and all further use of this and related material is subject to permission from said group.

A.1 Subjects

As laid out in section 1.5, on-site fieldwork in Chintang VDC proved impossible within my window of opportunity. Thus, the subject pool consisted of six Chintang speakers residing in Kathmandu, who were all employed by the Chintang and Puma Documentation Project (CPDP) as regular informants or transcribers. They all had college-level education in diverse subjects, and due to their involvement in the project, they knew a lot more about linguistics than most “naïve” informants in Chintang VDC would have.

As all consultants were employed by the project, and as consultation took place during their regular working hours, they were remunerated for their work with me as part of their salary. In addition, gummy bears⁶⁰ proved to be a highly effective motivation booster. Four of the consultants were female, two were male, and their age ranged between 19 and 28 years.

In such a small sample population, there was no sound way of controlling for sex, rank or social status. In theory, all participants formed a peer group in the sense that they belong to a tiny minority living in an ethnically diverse urban diaspora, and in that they all work with the CPDP project at roughly the same formal level, i.e., as “research assistants”. However, this does not prevent the emergence of status differences according to the duration of involvement in the project (different members were hired at different times) and thus experience, to education (the level of formal education and the ways in which this was attained) or along the functional lines of division of labor, with some project members being more “senior” than others. The delicate social hierarchies between the players were taken into account to the extent that all matchers had to follow instructions only from people to whom they were not senior.

A.2 Materials

A.2.1 Original task

The basis for all route descriptions is a model landscape built from toy objects on a piece of plastic tablecloth about 65 by 80 centimeters in size. At two opposite sides of this base mat, plasticized squares in a color different from the tablecloth serve as “home bases” and potential starting and ending points for routes. The landscape stretches between them, symmetrical to a central axis: Close to the player, a pair of plastic fence links (to elicit a notion of ‘passing through [between]’) leads to a toy car (an object with obvious features to allow for intrinsically-anchored spatial descriptions). Further along this axis stands a bridge-like structure made from plastic building blocks (to encourage ‘stepwise up-and-down’ motion as well as ‘passing under [on the traverse]’). The

⁶⁰*caklet* ‘chocolate’ in Chintang and Nepali, a cover term for all kinds of non-indigenous sweets.

bridge leads to a series of plastic fence links that can either be aligned in a row (to elicit notions of ‘moving along(side of)’ and ‘climbing over’) or form a rectangular corral (for ‘going into/out of’ and ‘going around inside of’). In addition, three further types of building-block objects to the left and right of the axis come in pairs to preserve the symmetry: A roof-like shape permits elicitation of ‘going over (a hill or a bump)’ and ‘going up/down (a flat slope)’. A gate-like structure is used for ‘going under’ and ‘going through’ both towards and away from the speaker, and a tower-like structure (a cylinder with a cone on top of it) allows for circular motion around a hub. The symmetrical design targets elicitation of strategies resolving ambiguity, as cross-linguistic evidence indicates that linguistic means for making distinctions along the so-called left/right axis tend to be less elaborated than those for other axes.

The original field manual (Wilkins and Senft 1993) lists four different routes through this landscape that are to be described, covering motion along various axes towards and away from the speaker as well as turning at various points in various directions.⁶¹ The routes are woven into three distinct conditions for the landscape: Routes 1 and 2 (see Figures A.1 and A.2 on p. 95) use virtually the same setup, differing only in the configuration of fence links at the far end of the base mat (row vs. corral). In route 3 (see Figure A.3, p. 96), additional objects such as trees and toy animals are used to destroy the symmetry and provide landmarks that can be distinguished more readily. Route 4 employs the symmetrical design again, but adds artificial landmarks outside the base mat (such as a bowl and an apple) to test whether and how these can serve as clues for disambiguation.

A.2.2 Adaptation

General differences Unlike the original base mats, mine were yellow and about 1 x 1 m in size. Since this, in the context of Nepal, is not any less natural than a white plastic tablecloth, and as the participants were all experienced language consultants endowed with a rich imagination, I take it that this deviation did not add to the overall awkwardness of the situation. Both mats happened to have one rounded corner. As this might have constituted an additional artificial landmark (cf. above), I ensured that it was the same corner in the setup for both participants, but none of the players ever made reference to it. The postcard-sized “home base” squares, consequently, consisted of reddish foam rubber in order to be easily distinguishable. I constructed all gates and bridges from red LEGO® duplo™ blocks—their common color thus introduced a further potential source of ambiguity for ‘moving under’ operations, in line with the overall intention of the design. For

⁶¹In the 1996 field manual, David Wilkins and Eve Danziger propose different, more balanced routes as measured by multiple criteria. Since the number of my consultants did not permit quantitative analysis of the data anyway, and therefore did not immediately call for fine-grained counter-balancing, I opted for the original paths, as they were easier to administer and I had very limited time available for conducting the space game.

roof-like and tower-like structures, wooden pieces were employed. Instead of an innocent toy truck, I had to make do with a neon-red sportster; all consultants were familiar with city life and had no problems referring to it as just *gari* ‘car, vehicle’ (Nepali गाड़ी *gāri* ‘cart, car’). It proved surprisingly difficult to obtain a sufficient number of fence links, and I was one short of complete symmetry for both director and matcher. I thus used the links for the row/corral-like structure only, and was forced to substitute the ones leading to the car by toothpicks (two in a row on either side, flat on the ground, no strings attached), which instantly became marks for a *bato* ‘way, path, street, road’ (Nepali बाटो *bāto* ‘road, path, way’) or just *rod* ‘road’ in the descriptions of the speakers.

Boundary As particular interest of the study lay in exploring possible deictic transposition in more detail, and as previous research in a related language suggested that the use of transposed deictic terms may be sensitive to boundaries (be they natural or construed as such by society, cf. Bickel 2001), a simulated boundary was incorporated into the setup: A blue plastic strap extended across the landscape, passing under the bridge, and was introduced as a ‘creek’ (Chintang/Nepali खोला *kholā*) to all participants.

Location & orientation All games were played at the “coffee room”, a boardroom on the ground floor of the Centre for Nepalese and Asian Studies (CNAS) of Tribhuvan University, Kirtipur, Kathmandu, Nepal. The players faced southwest, towards Kirtipur hill and, beyond that, to the peak of Champa Devi (2249 m above sea level, roughly in line with Kirtipur hill from the site of the space game). Champa Devi, Mt. Phulchowki (2760 m above sea level, to the southeast of the site), and the range between them bound the Kathmandu valley to the south. This setup brought into systematic conflict not only orientation on the left/right axis (by the mirror-image design of the landscape) and the ACROSS axis of the inclination-based absolute framework, but also possible anchors of the coordinate system: UP might have been anchored⁶² towards the north or northeast, where the peaks of the Himālayas constitute the highest elevations of the entire world and on account of that may be presumed as salient (in “large-scale geomorphic mapping” in the terms of Bickel 1994, 1997; see section 6.2.1), or anchored at the elevations that were closest to the site and visible to the participants,⁶³ and may thus have been assigned salience by virtue of immediacy.

⁶²see p. 58 for a justification of anchoring via UP

⁶³The room had windows facing southwest, through which the players could not directly see the top of any of the above elevations due to angular limitations, but perceive other landmarks with which they were in frequent visual contact, and which were positioned on an obvious upward cline from their point of view. This distinguished the heights in their sightline from the Himālayan mountains, which were not only behind their backs, but are also usually obscured from view even under favourable meteorological conditions by the cloud of smog covering the city of Kathmandu.

Appendix A: Space Game



Figure A.1: Route 1



Figure A.2: Route 2



Figure A.3: Route 3

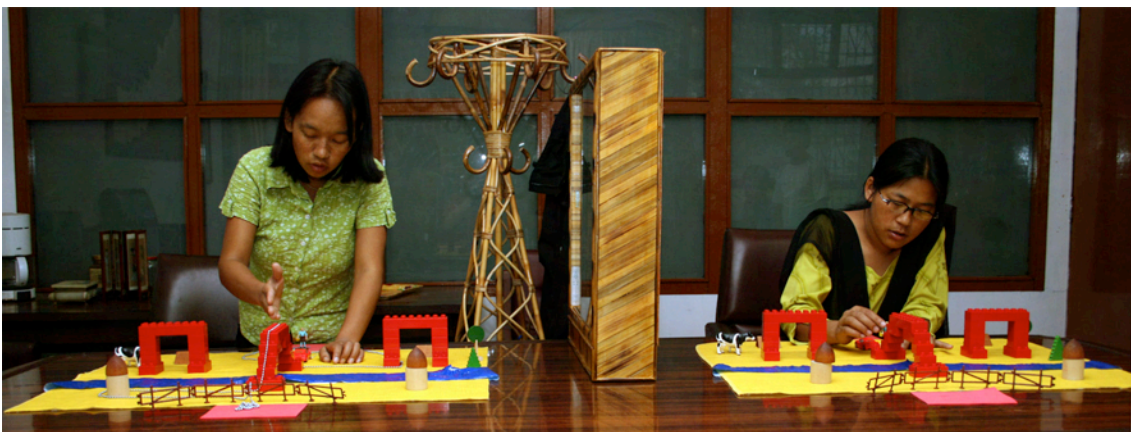


Figure A.4: Director (left) and matcher crossing the bridge in route 3

A.3 Procedure

A.3.1 Original task

Two participants, a “director” and a “matcher”, sit next to each other at a large table, facing the same way. Each has a model landscape in front of him, constructed according to the specifications in section A.2 above. During the game, a screen between the director and the matcher prevents them from seeing their respective partner as well as what is on their partner’s side of the table. (See Figure A.4 on the facing page.) Before that, however, they may assure themselves that their landscapes are identical. The experimenter then puts a small link chain into the director’s landscape to mark a route which the matcher is not permitted to see. Subsequently, the director takes a little doll and moves it along the route, imagining it is himself, walking through the landscape. He is to describe his every move to the matcher, who follows the described route with a similar doll in his own landscape as exactly as possible. The moves of both participants are recorded on video, along with their conversational exchange.

A.3.2 Adaptation

Pairings & routes Ideally, players would have chosen their own partner. However, given the small pool of Chintang speakers available, pairs were pre-selected based on the expected talkativity of the participants, so that there was one player in each pair known to be communicative and eloquent, who was then assigned the role of director. As there was less talking demanded of the matcher during the actual matching task (but cf. below), the role of matcher was assigned to the more taciturn of the two partners in each pair. Familiarity with each other was not an issue, as all consultants had been working side by side in a small group for an extended period of time.

With the limited resources at my disposal, I decided to skip route 4 altogether—based on previous observations, I expected the small artificial landmarks outside the landscape to have the least impact on linguistic description. Even so, due to the constraints on the time available, not all three pairs could do all three routes each. Guiding principles for assignment of routes to pairs were therefore: (i) to cover as many routes as possible in total, (ii) to have each route done by at least two pairs so as to have a basis for comparison, (iii) to have each pair do at least one route in a symmetrical and one route in an asymmetrical condition. The pairings and the routes described by the pairs are detailed in the IMDI metadata files accompanying the videos and transcripts.

Build-up In order to elicit not only motion accounts, but also descriptions of static spatial locations, the matcher started out with a blank table and a supply of the necessary props. As many of the objects were novel to the consultants, it proved useful to introduce them to both

participants first. (In this, the roof-like element became a ‘park’, and the circular tower a ‘tree-trunk’, as suggested by the consultants.) The landscape for route 3 was placed in front of the director, with two wooden trees, a plastic goat and a plastic cow (next to each other but facing opposite ways along the ACROSS axis) destroying the symmetry. The director was then asked to describe the landscape to the matcher, who was instructed to build a copy in front of himself according to the description. When director and matcher were confident that their landscapes looked identical, the matcher was allowed to look at the director’s side, and the matcher’s setup was corrected as necessary. Thereafter, the symmetry-disturbing elements were removed, as the subsequent route description tasks always commenced with one of the symmetrical setups in order not to prime participants with additional cues.

Recount In an attempt to test whether a shift in person reference would encourage the use of potentially transposed spatial deictic terms, every matcher was instructed to pay good attention to the route description and, having reached the common goal, recount in third person the path the director had taken. From a *post hoc* perspective, it is not surprising that this did not produce any *a-* or *u-* form of the demonstratives in question (see section 8.7).

A.4 Instructions

In order to ensure that all the participants in the space game would be instructed in the same way, I prepared a set of plain and simple instructions (in writing, but to be presented orally during the trials), first in English. A Nepali version was then constructed by Binita Maharjan and myself⁶⁴ and checked for grammatical correctness and pragmatic appropriateness by multiple native speakers of Nepali. I tested the appropriateness and comprehensibility of the instructions with several pairs of Nepali-speaking volunteers in “dry runs” of the experimental setup before playing with the Chintang speakers.

For the actual trials, one of the local research assistants (who was not involved as a consultant) had eagerly volunteered to give the instructions to the participants, and I emphasized to him that strict adherence to the pre-formulated text was important. However, as he proved to be following his own agenda with the first pair of players, happily reformulating and even skipping vital parts of the instructions and thus obscuring the entire purpose of the game, I had to intervene and try to clear up some of the ensuing confusion on the part of the players. For the remaining pairs

⁶⁴Translation is never a trivial enterprise, and as with all attempts to convey information cross-linguistically, we had to strike a balance between faithfulness to the original text and acceptability in the target language here as well. Neither of us is a certified translator or interpreter, so the result is not a prizeworthy piece of art, but through testing and subsequent refinement, I am confident that we arrived at a text that was suitable for the purpose.

Appendix A: Space Game

of players, a player from the first round gave the instructions in Chintang, closely following the Nepali version laid down here and translating it on the fly, supplemented with information from his own experience as a player.

The English and corresponding Nepali versions of the instructions are reproduced below. Director and matcher were instructed in a step-by-step manner as the game progressed (the boundaries between steps being marked by horizontal rules here), with the matcher being present while the director received his instructions and vice versa.

DIRECTOR

We are now going to play a game. During the entire game, please concentrate on the landscape in front of you. Don't look at your partner's side of the table. Also, please speak Chintang only.

अब हामी खेल खेलन गईरहेका छौं । खेलको बेलामा टेबलमा ध्यान दिनुहोस । तपाईंको साथिको छेउलाई नहेर्नुहोस । अनि छिन्ताङ भाषा मात्र बोल्नुहोस् ।

In front of you, on your side of the table, there is a landscape. On your partner's side, there is none. First, please describe the landscape to your partner very precisely in the Chintang language, so that s/he can build an exact copy of the landscape.

तपाईंको अगाडि तपाईंको टेबलको छेउमा भुदृश्य छ । तपाईंको साथिको छेउमा छैन । पहिला एउटा साथिले छिन्ताङ भाषामा यो टेबलमा राखेको भुदृश्यको वर्णन गर्नुहोस । ताकी अर्को साथीले त्यो वर्णन अनुसार त्यो भुदृश्य बनाउन सक्नु पर्छ ।

Now, we will mark a route in your landscape. Please take the little doll and follow this route. Imagine it is you, slowly walking through the landscape. Describe to your partner precisely where you are moving, so that s/he can follow the exact same route in his/her landscape. Use the Chintang language.

अब हामी यो भुदृश्यमा बाटो बनाउन गईरहेका छौं । कृपया यो पुतलि लिनुहोस र बाटो पछ्याउनुहोस । यो पुतलि तपाईं हो भनेर सोच्नुहोस । तपाईंको साथिलाइ , तपाईंले पछ्यास्को बाटो राम्रोसँग वर्णन गर्नुहोस, ता की तपाईंको साथि , वर्णन अनुसार उही बाटोलाई पछ्याएर जानु सक्छ । छिन्ताङ भाषामा बोल्नुहोस !

Thank you. We will now play the same game three more times⁶⁵ with different routes.

धन्यवाद । अब हामी उही खेल तीन पटक खेल्नेछौं तर अर्को बाटोहरू प्रयोग गर्नेछौं ।

The game is over now, thank you very much. Both of you have done very well, this is a very important contribution to the Chintang corpus. But please do not talk about this with anybody until all of the Chintang speakers have played.

यो खेल अब सक्यो , धेरै धेरै धन्यवाद । तपाईं दुवैले धेरै राम्रो खेलनु भयो । यो खेलले छिन्ताङ कोर्पसलाई धेरै महत्वपूर्ण योगदान दिने छ । तर कृपया यो खेलको बारेमा अरुलाई नभन्नुहोस , जबसम्म सबै हाम्रो छिन्ताङ बोल्ने साथिहरू खेलेको हुँदैनन ।

Table A.1: Instructions for the player acting as director in the space game

MATCHER

We are now going to play a game. During the entire game, please speak Chintang only.	अब हामी खेल खेल्न गईरहेका छौं । खेलको बेलामा छिन्ताङ मात्र बोल्नुहोस ।
First, your partner will describe a landscape to you. Please listen carefully, take the things on the table and build an exact copy of the landscape s/he describes. Everything you need is on the table. If you are not sure about something or have any other question about the landscape, please ask your partner (in the Chintang language), but don't look at his/her side of the table. Just ask.	पहिला , तपाईंको साथिले भुदृश्यको वर्णन गर्नुहुन्छ । कृपया राम्रोसँग सुन्नुहोस र टेबलमा राखेको सामानले , तपाईंको साथिले वर्णन गरेको अनुसार उस्तै भुदृश्य बनाउनुहोस । तपाईंलाई चाहिने सामानहरू टेबलमा छन । भुदृश्यको बारेमा केहि प्रश्न प्र अथवा नबुझेमा साथिसँग छिन्ताङमा फेरि सोध्नुहोस । तर कृपया उहाँ तर्फ नहेर्नुहोस । सोध्नुहोस मात्र ।
Now, your partner will describe a route to you. Please take the little doll and follow the exact same route in your landscape. If you are not exactly sure where to go, ask your partner, but don't look at his/her side of the table. It is very important that you follow the route as closely as possible. Please pay good attention, because afterwards you are to tell where your partner went.	अब तपाईंको साथिले बाटोको वर्णन गर्ने छ । कृपया यो पुतलि लिनुहोस र साथिले वर्णन गरेको अनुसार बाटो थाहा पाउनुहोस । बाटो थाहा पाउन गाह्रो भएमा साथिलाई सोध्नुहोस । तर उहाँ तर्फ नहेर्नुहोस । सकेसम्म सही बाटो पत्ता लगाउन कोसिस गर्नुहोस । कृपया राम्रो ध्यान दिनुहोस , किनभने पछि तपाईंको साथि कहाँ गयो भनेर भन्नु पर्नेछ ।
Okay, now you both have reached the goal. Please tell us again in the Chintang language how your partner got there.	अब तपाईंहरू गन्तव्यमा पुग्नु भयो । कृपया छिन्ताङमा फेरि भन्नुहोस , तपाईंको साथि कसरि त्यहाँ पुग्यो ।
Now look at the original route on your partner's side. Was the description accurate? How could it have been described differently? Discuss with your partner!	अब तपाईंको साथि तर्फको बाटो हेर्नुहोस । के त्यो वर्णन सहि थियो ? अर्को वर्णन सम्भव थियो ? तपाईंको साथिसँग छलफल गर्नुहोस !
Thank you. We will now play the same game three more times with different routes.	धन्यवाद । अब हामी उही खेल तीन पटक खेल्नेछौं तर अर्को बाटोहरू प्रयोग गर्नेछौं ।

Table A.2: Instructions for the player acting as matcher in the space game

B Topological relations questionnaire

Melissa Bowerman's original series has been published in various sources and is provided here as reprinted in Levinson and Wilkins (2006: 570-575).

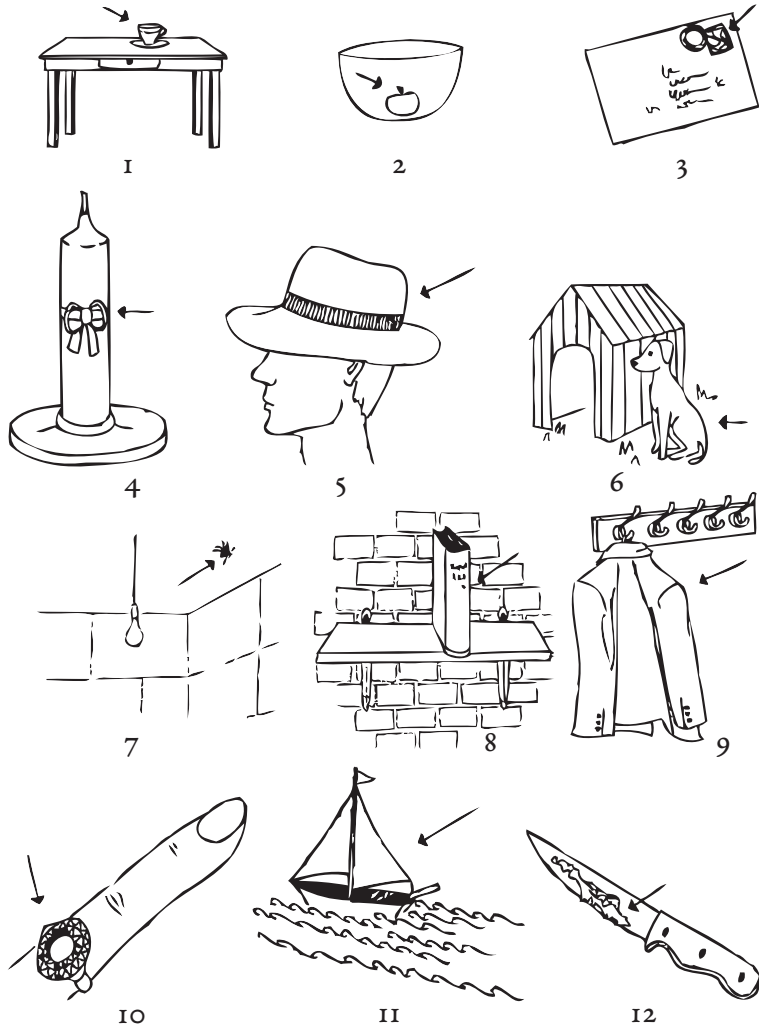


Figure B.1: Scenes 1-12 of the topological relations picture series

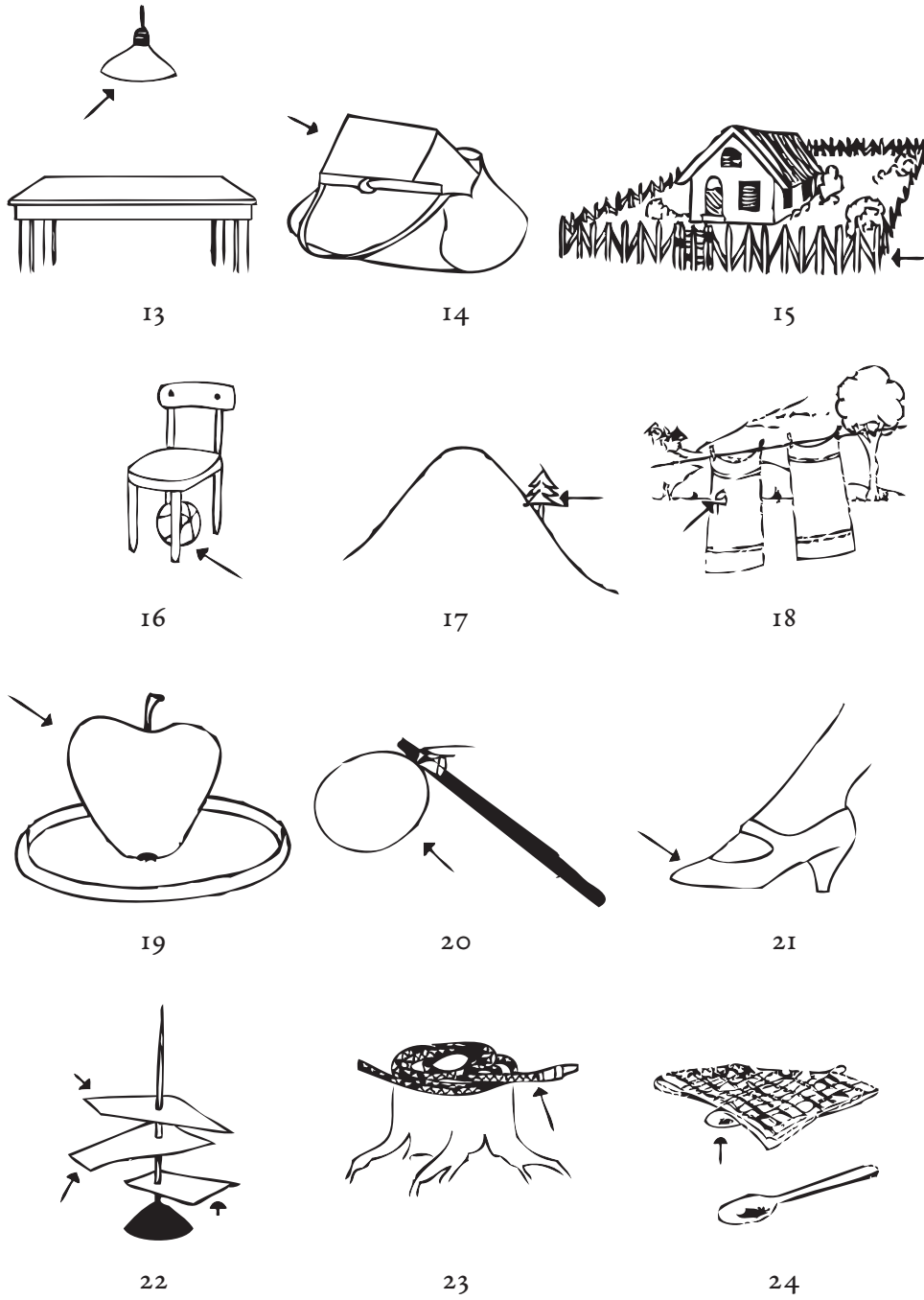


Figure B.2: Scenes 13–24 of the topological relations picture series

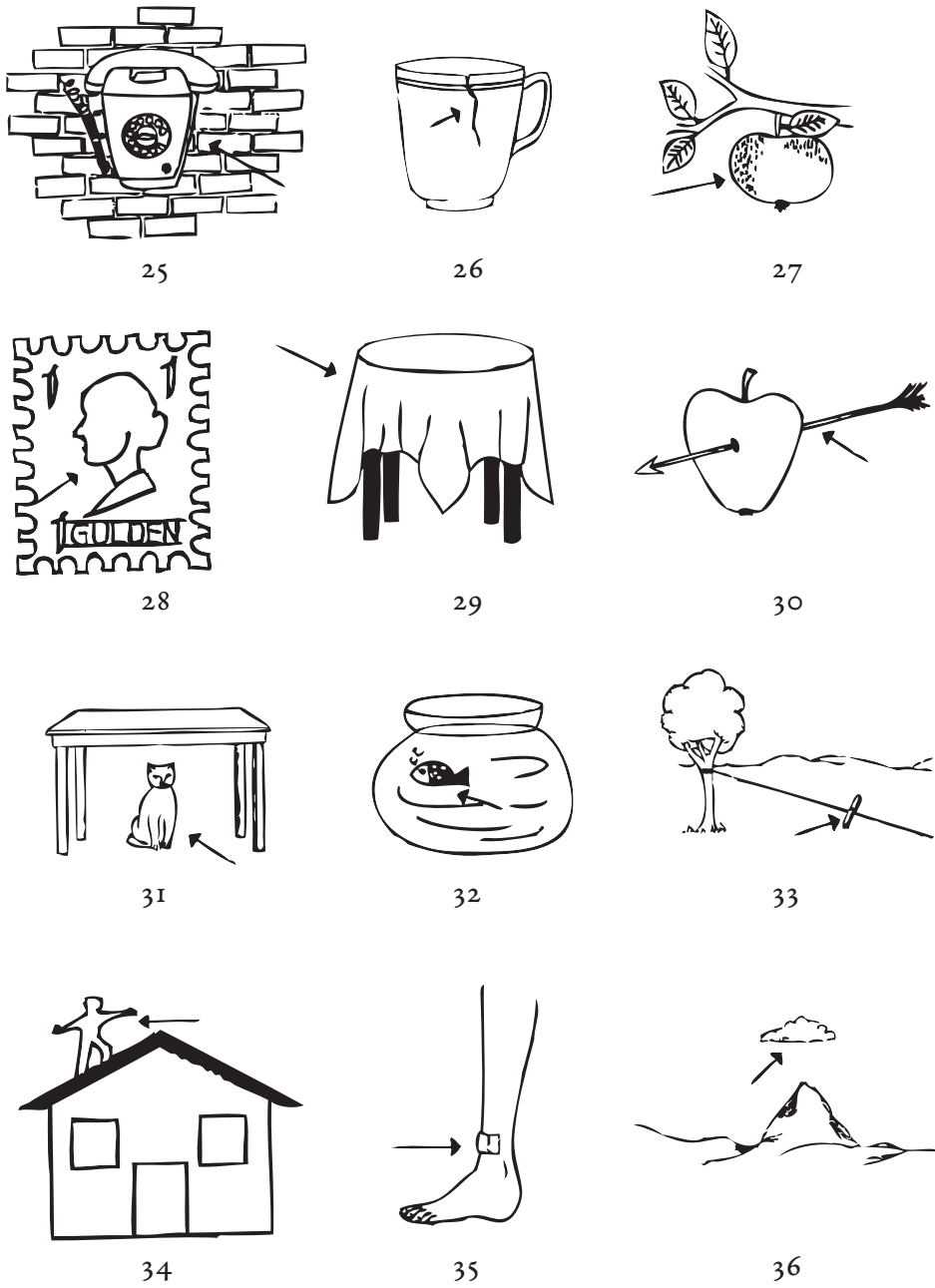


Figure B.3: Scenes 25–36 of the topological relations picture series

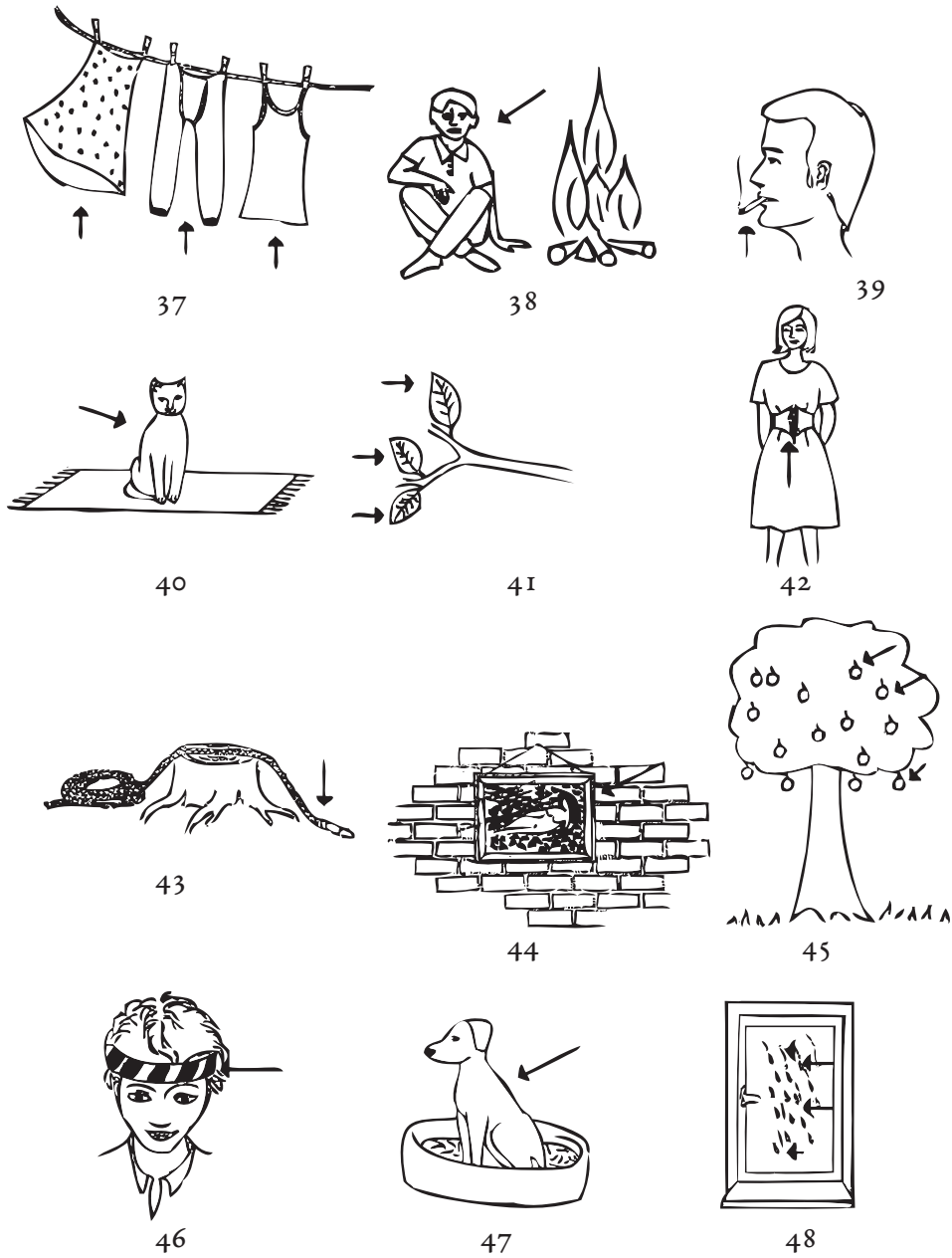


Figure B.4: Scenes 37–48 of the topological relations picture series

Appendix B: Topological relations questionnaire

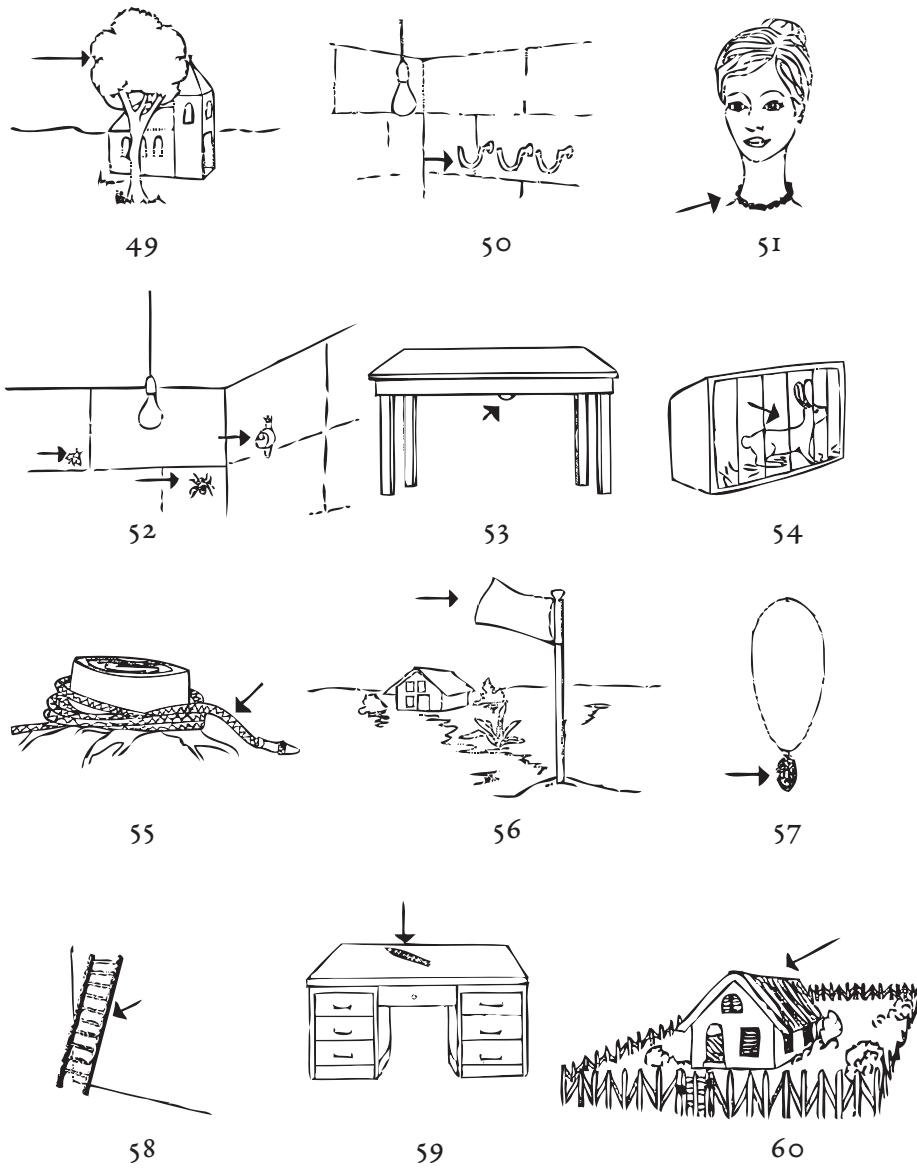


Figure B.5: Scenes 49–60 of the topological relations picture series

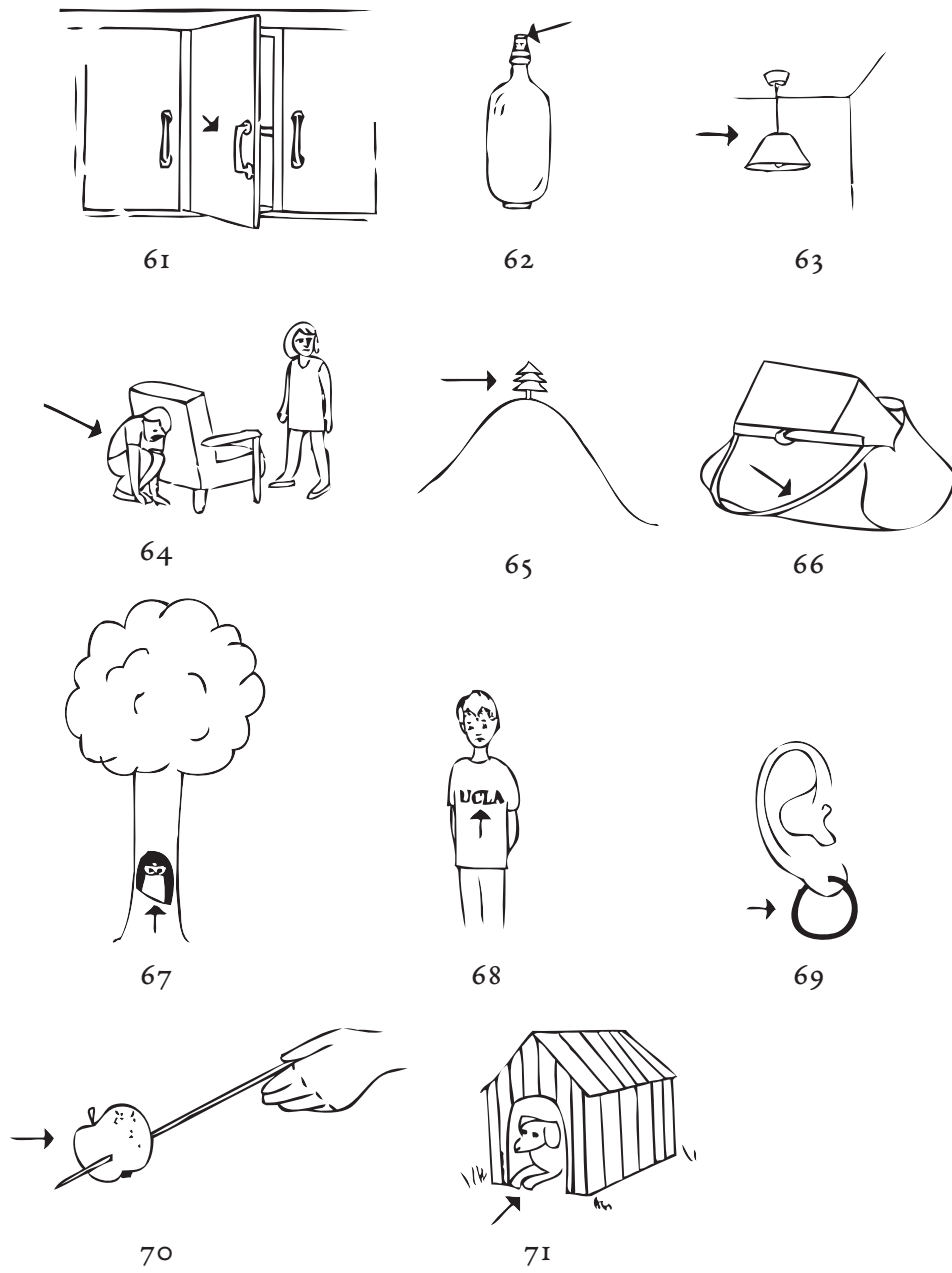
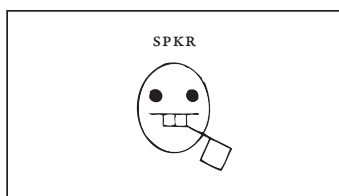


Figure B.6: Scenes 61–71 of the topological relations picture series

C Demonstrative questionnaire

The demonstrative scenes below are reproduced from the 1999 internal field manual of the Language and Cognition Group at the Max Planck Institute for Psycholinguistics in Nijmegen, The Netherlands (cited here informally as Wilkins 1999). The material is provided for informational purposes in the context of this thesis only, all further use is subject to express permission from the Language and Cognition Group (cf. footnote 59 on p. 91).

1



Speaker points to own body part. In this case one of his/her teeth.

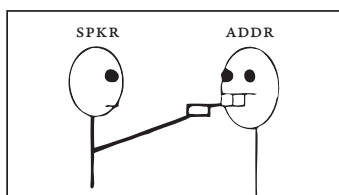
“___ tooth hurts.”

“The ball hit me on ___ tooth.”

- Does close pointing vs. touching make a difference?
- Does it make a difference if ADDR already has attention on tooth vs. attention being drawn?

[In some languages teeth are more alienable body parts, so you may also want to try fingers, hands, shoulders.]

2



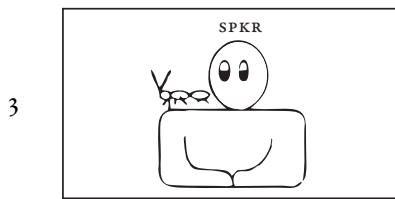
SPKR points to ADDR's body part. In this case one of ADDR's teeth.

“Did you know ___ tooth is chipped?”

“Your [sic] right, ___ tooth is yellow.”

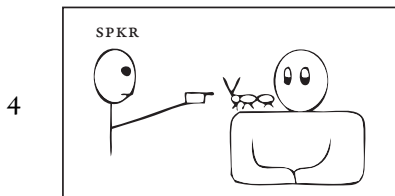
- Does close pointing vs. touching make a difference?
- Does it make a difference if ADDR already has attention on tooth vs. attention being drawn?

[In some cultures, index finger pointing at someone else is impolite. Check whether there is any natural form of indexical reference for this situation.]



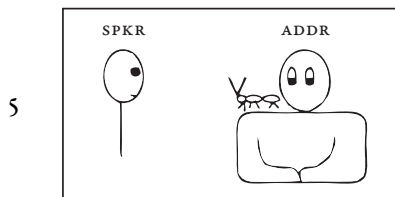
SPKR notices a movable object in contact with his/her body. In this case, a bug on his/her shoulder.
 “ ___ bug is bothering me.”

- Does it make a difference if SPKR’s attention has just gone to bug, or has been on it for a while?
- Does it make a difference if ADDR already has attention on bug vs. attention being drawn?



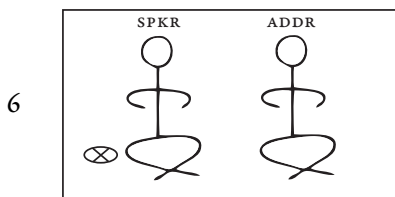
SPKR points to movable object in contact with ADDR’s body. In this case a bug on ADDR’s shoulder.
 “Look at ___ bug on your shoulder.”
 “What kind of bug is ___?”

- Does degree of closeness of point to referent make a difference?
- Does it make a difference if ADDR already has attention on bug vs. attention being drawn?



SPKR references movable object in contact with ADDR’s body, but without using a manual point.
 [Might use gaze or head point or lip point.]
 “Look at ___ bug on your shoulder.”
 “What kind of bug is ___?”

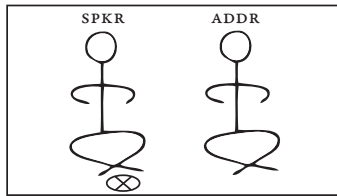
- Does it make a difference if ADDR already has attention on bug vs. attention being drawn?



The referent is just beside SPKR (within easy reach), on side away from addressee. The object is difficult, if not impossible for ADDR to see.
 “I’ve just finished reading ___ book.”
 “Do you want to borrow ___ book?”

- Does it make a difference if ADDR knows the object is there vs. doesn’t know?
- Does it make a difference if object has been mentioned before? Must SPKR point?
- What if object was more visible?

7



The referent is just in front of SPKR and visible to ADDR (but not within ADDR's reach).

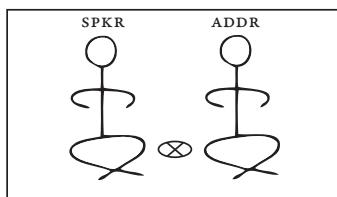
"I've just finished reading ____ book."

"Do you want to borrow ____ book?"

"Have you read ____ book?"

- Does it make a difference if ADDR already has attention on object vs. attention being drawn?
- Must SPKR point?

8



The referent is in between SPKR and ADDR and equidistant from both (and within arm's reach of both).

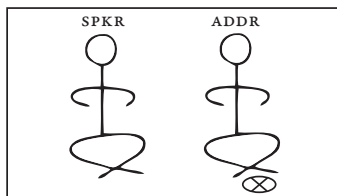
"Is ____ your book/radio?"

"I like ____ book/radio?"

"Do you want to borrow ____ book?"

- Does it make a difference if ADDR already has attention on object vs. attention being drawn?
- Must SPKR point?
- Does ownership of object make a difference?

9



The referent is just in front of ADDR, and visible to SPKR (but not within SPKR's reach).

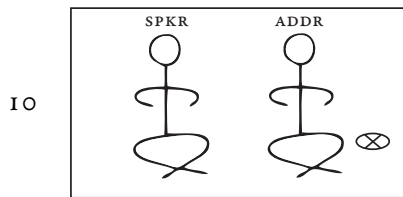
"Is ____ your book/radio?"

"I like ____ book/radio?"

"Do you want to borrow ____ book?"

- Does it make a difference if ADDR already has attention on object vs. attention being drawn?
- Must SPKR point?

The referent is just beside ADDR (within easy reach), on the side away from SPKR. The object is difficult, if not impossible for SPKR to see, but SPKR knows where object is.



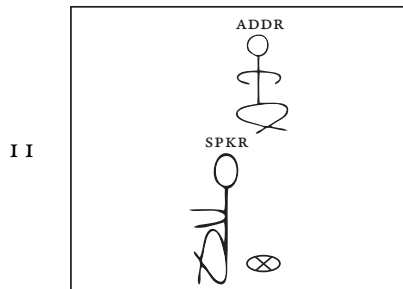
“Is ___ your book/radio?”

“I like ___ book/radio?”

“Do you want to borrow ___ book?”

- Does it make a difference if ADDR already has attention on object vs. attention being drawn?
 - Must SPKR point?
 - What if object was more visible?
-

Referent object is just behind the SPKR. The ADDR is at some distance away, but can readily see object (although it is well out of arm's reach). The SPKR knows where the object is, even she/he cannot see it. The SPKR never turns to look at the object.



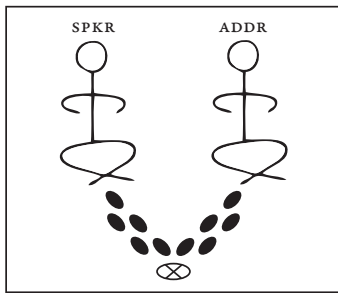
“Is ___ your book/radio?”

“I like ___ book/radio?”

“Do you want to borrow ___ book?”

- Does it make a difference if the SPKR points or not?
 - Must SPKR point?
 - Does it make a difference if object has been mentioned before?
 - Does it make a difference if ADDR already has attention on object vs. attention being drawn?
-

I 2



Referent object is equidistant from SPKR and ADDR, in front of (and between) them. It is easily visible to both. To get the object each would only have to walk about five paces.

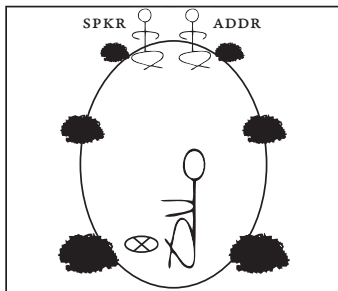
“Is ____ your book/radio?”

“I like ____ book/radio?”

“Do you want to borrow ____ book?”

- Does it make a difference if ADDR already has attention on object vs. attention being drawn?
- Must SPKR point?
- Does it make a difference if object has been mentioned before?

I 3



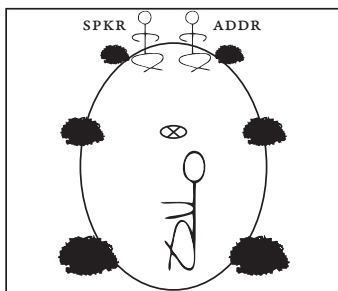
SPKR and ADDR are sitting next to each other at one end of a large cleared space. The area of the space is about the size of a football field. There is another person at the other end of the space, and the referent is in front of this person, visible to both SPKR and ADDR.

“ ____ ball/radio is a good one.”

“I wonder where he got ____ ball/radio.”

- Does it make a difference if ADDR already has attention on object vs. attention being drawn?
- Must SPKR point?
- Does it make a difference if object has been mentioned before?

I 4



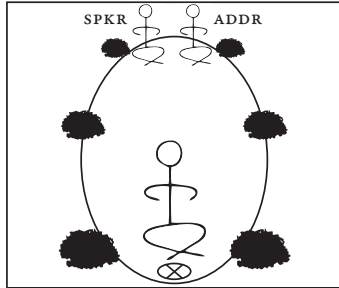
SPKR and ADDR are sitting next to each other at one end of a large cleared space. The area of the space is about the size of a football field. There is another person at the other end of the space. The referent is right at the center of the space (equidistant from SPKR/ADDR and other).

“ ____ ball/radio is a good one.”

“I wonder if ____ ball/radio is his.”

- Does it make a difference if ADDR already has attention on object vs. attention being drawn?
- Must SPKR point?
- Does it make a difference if object has been mentioned before?

15



SPKR and ADDR are sitting next to each other at one end of a large cleared space. The area of the space is about the size of a football field. There is another person at the other end of the space, facing away from SPKR/ADDR and the referent is in front of him. The referent is not visible to SPKR/ADDR, but the SPKR knows about object and its location.

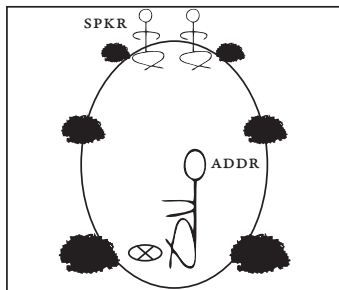
“ ___ ball/radio is a good one.”

“I wonder if ___ ball/radio is his.”

“Did you see ___ ball/radio he has?”

- Does it make a difference if ADDR knows the object is there vs. doesn't know?
- Does it make a difference if object has been mentioned before?
- Does it make a difference if SPKR does not know of existence of specific object, but conjectures existence from action of other (“He's really getting stuck into ___ thing.”).
- Is pointing natural in this situation?

16



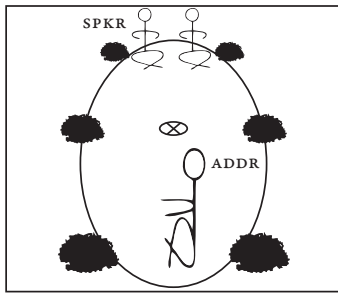
SPKR is sitting at one end of a large cleared space, and ADDR is sitting at the other. The space is about the size of a football field. The SPKR has to shout to the ADDR. The referent is in front of the ADDR, and visible to the speaker.

“ ___ ball/radio is a good one.”

“Is ___ ball/radio yours?”

- Does it make a difference if ADDR already has attention on object vs. attention being drawn?
- Is pointing natural?
- Does it make a difference if object has been mentioned before?

17



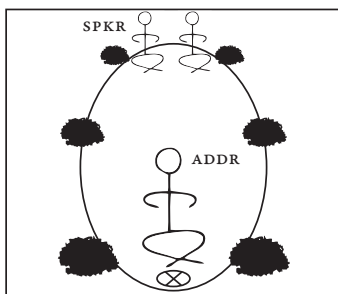
SPKR is sitting at one end of a large cleared space, and ADDR is sitting at the other. The space is about the size of a football field. The SPKR has to shout to the ADDR. The referent is in the center of the space, equidistant from SPKR and ADDR.

“___ ball/radio is a good one.”

“Is ___ ball/radio yours?”

- Does it make a difference if ADDR already has attention on object vs. attention being drawn?
- Is pointing natural?
- Does it make a difference if object has been mentioned before?

18



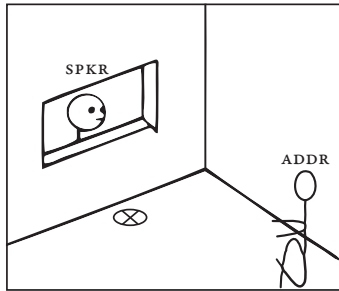
SPKR is sitting at one end of a large cleared space, and ADDR is sitting at the other. The space is about the size of a football field. The SPKR has to shout to the ADDR. The ADDR is facing away from SPKR and the referent is in front of him. The referent is not visible to SPKR, but the SPKR knows about object and its location.

“___ ball/radio is a good one.”

“Is ___ ball/radio yours?”

- Is pointing still natural?
- Does it make a difference if object has been mentioned before?
- Does it make a difference if SPKR does not know of existence of specific object, but conjectures existence from action of ADDR? (“What’s ___ thing your [sic] playing with?”)

19



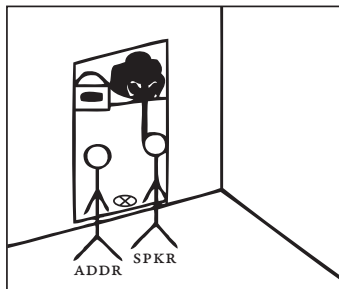
SPKR is standing outside a home looking in through window. ADDR is at other end of room away from window. Referent is near window and visible to SPKR (and ADDR). [So object is physically closer to SPKR than ADDR.]

“Is ____ your book/radio?”

“I like ____ book/radio.”

- Does it make a difference if the SPKR points or not? Must SPKR point?
- Does it make a difference if object has been mentioned before?
- Does it make a difference if ADDR already has attention on object vs. attention being drawn?

20



SPKR and ADDR are inside a house looking out of (open) door. They are near the doorway. The referent is just outside of door (near it). The referent is easily reached by both ADDR and SPKR (and equidistant from both).

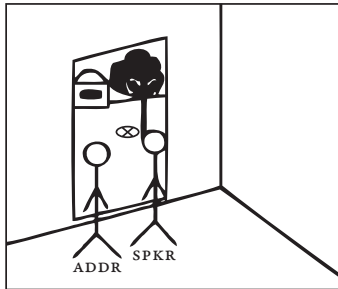
“I like ____ book/radio.”

“Who’s [sic] book/radio is ____?”

- Does it make a difference if the SPKR points or not? Must SPKR point?
- Does it make a difference if object has been mentioned before?
- Does it make a difference if ADDR already has attention on object vs. attention being drawn?
- Does term change with change in closeness of SPKR/ADDR to door? Closeness of object to door?

Appendix C: Demonstrative questionnaire

2.1



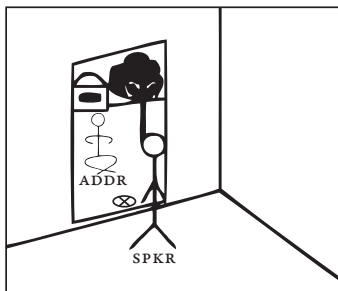
SPKR and ADDR are inside a house looking out of (open) door. They are near the doorway. The referent is a few meters away (next to a large immovable object). The object is technically closer (and in line) with SPKR [i.e. “on the SPKR’s side of the house”]

“I like ____ book/radio.”

“Who’s [sic] book/radio is ____?”

- Does it make a difference if the SPKR points or not?
- Must SPKR point?
- Does it make a difference if object has been mentioned before?
- Does it make a difference if ADDR already has attention on object vs. attention being drawn?

2.2



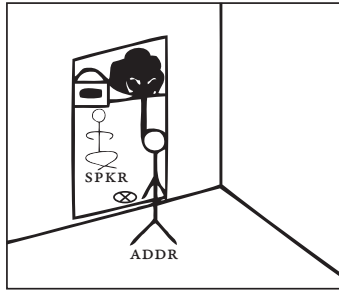
SPKR is inside a house looking out of open door. ADDR is sitting outside at a distance (a few meters away). Referent is just outside the door (outside, but physically closer to SPKR).

“Is ____ your book/radio?”

“I like ____ book/radio.”

- Does it make a difference if the SPKR points or not? Must SPKR point?
- Does it make a difference if object has been mentioned before?
- Does it make a difference if ADDR already has attention on object vs. attention being drawn?

23



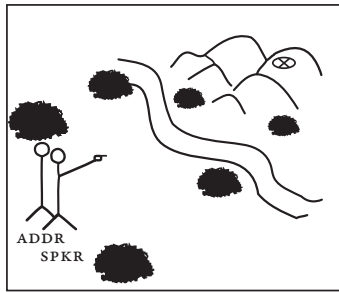
ADDR is inside a house looking out of open door. SPKR is sitting outside at a distance (a few meters away). Referent is just outside the door (outside, but physically closer to ADDR).

“Is ____ your book/radio?”

“I like ____ book/radio.”

- Does it make a difference if the SPKR points or not? Must SPKR point?
- Does it make a difference if object has been mentioned before?
- Does it make a difference if ADDR already has attention on object vs. attention being drawn?

24



Large-scale geographic space. SPKR and ADDR next to one another looking out across a river into some hills (several kilometers away). SPKR is pointing to referent which is visible up in the hills.

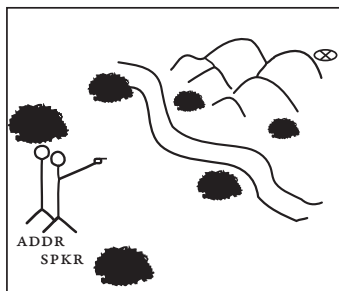
“I’ve climbed to ____ black rock.”

“Have you been to ____ cave?”

“See ____ bicycle?”

- Does it make a difference if ADDR already has attention on object vs. attention being drawn?
- Does it make a difference if object has been mentioned before?

25



Large-scale geographic space. SPKR and ADDR next to one another looking out across a river into some hills (several kilometers away). SPKR is pointing to referent which is not visible because it’s in the hills on the other side.

“I’ve climbed over to ____ black rock.”

“Have you been to ____ cave?”

“Your father made ____ statue.”

- Does it make a difference if ADDR knows the object is there vs. doesn’t know?
- Does it make a difference if object has been mentioned before?
- Must speaker point?

D Summary in German

(Gemäß §25 Absatz 6 der Magisterrahmenprüfungsordnung (MARPO) der Universität Leipzig vom 26. Oktober 1998 ist einer Magisterarbeit, die in einer anderen Sprache als Deutsch abgefasst ist, eine Zusammenfassung in deutscher Sprache beizufügen.)

Die vorliegende Arbeit untersucht die semantischen Strukturen, die der Anwendung von nominalen sprachlichen Einheiten zum Ausdruck räumlicher Beziehungen in der Kirantisprache Chintang (gesprochen in Ostnepal) zugrundeliegen. Nach einer Einführung in die Frage nach sprachlicher Relativität und allgemeinen Informationen zur Sprache und zum methodologischen Vorgehen wird im ersten Teil das theoretische Gerüst der empirischen Untersuchung aufgebaut: Es wird ein Überblick zur Geschichte der Vorstellung von Raum gegeben, die am Max-Planck-Institut für Psycholinguistik in den 1990er Jahren entwickelte Theorie von räumlicher Klassifikation und Bezugsrahmen (*frames of reference*, siehe z.B. Levinson 2003) als grundlegend für die weitere Analyse vorgestellt, sowie auf die Begriffe “Deixis” und “Transposition” eingegangen. Im zweiten Teil werden die durch gezielte Befragung von muttersprachlichen Informanten gewonnenen empirischen Daten aus dem Chintang in den theoretischen Rahmen eingeordnet. Außerdem wird der Frage nachgegangen, ob es im Chintang grammatikalisierte teilweise Transposition bei deiktischen Demonstrativa gibt, wie Bickel (2001) dies für das benachbarte und mit dem Chintang verwandte Belharische berichtet. Diese Frage wird negativ beantwortet, bevor eine abschließende Beurteilung und Einpassung in übereinzelsprachliche Typologien des Raumausdrucks vorgenommen wird.

References

- Allen, W. S. (1956). Structure and system in the Abaza verbal complex. *Transactions of the Philological Society*, 55(1), 127–176.
- Anderson, S. R. and Keenan, E. L. (1985). Deixis. In T. Shopen (ed.), *Language Typology and Syntactic Description*, volume 3: Grammatical Categories and the Lexicon, 259–308. Cambridge University Press, Cambridge, UK.
- Bickel, B. (1994). *Mapping Operations in Spatial Deixis and the Typology of Reference Frames*. Number 31 in Working Papers of the Cognitive Anthropology Research Group. Max Planck Institute for Psycholinguistics, Nijmegen.
- Bickel, B. (1997). Spatial operations in deixis, cognition, and culture: where to orient oneself in Belhare. In Pederson and Nuyts (1997), 46–83.
- Bickel, B. (1999). Cultural formalism and spatial language in Belhara. In Bickel and Gaenszle (1999), 73–101.
- Bickel, B. (2001). Deictic transposition and referential practice in Belhare. *Journal of Linguistic Anthropology*, 10(2), 224–247.
- Bickel, B. and Gaenszle, M. (eds.) (1999). *Himalayan Space. Cultural Horizons and Practices*. Völkerkundemuseum Zürich, Zurich.
- Bickel, B., Banjade, G., Gaenszle, M., Lieven, E., Paudyal, N. P., Rai, I. P., Rai, M., Rai, N. K., and Stoll, S. (2005a). Triplication and ideophones in Chintang. In Y. P. Yadava (ed.), *Contemporary Issues in Nepalese Linguistics*, 205–210. Linguistic Society of Nepal, Kathmandu.
- Bickel, B., Banjade, G., Gaenszle, M., Lieven, E., Paudyal, N. P., Rai, I. P., Rai, M., Rai, N. K., and Stoll, S. (2005b). Worshipping the King God. A preliminary analysis of Chintang ritual language in the invocation of Rajdeu. In Y. P. Yadava (ed.), *Contemporary Issues in Nepalese Linguistics*, 33–47. Linguistic Society of Nepal, Kathmandu.
- Bickel, B., Banjade, G., Gaenszle, M., Lieven, E., Paudyal, N. P., Rai, I. P., Rai, M., Rai, N. K., and Stoll, S. (2007). Free prefix ordering in Chintang. *Language*, 83, 1–31.

- Bickerton, D. (1981). *Roots of Language*. Karoma Publishers, Ann Arbor, MI.
- Bickerton, D. (1984). The language bioprogram hypothesis. *Behavioral and Brain Sciences*, 7(2), 173–221.
- Bierwisch, M. (1967). Some semantic universals of German adjectivals. *Foundations of Language*, 3, 1–36.
- Boas, F. (1947). Kwakiutl grammar, with a glossary of the suffixes. *Transactions of the American Philosophical Society*, 37, 203–377.
- Boroditsky, L. (2001). Does language shape thought? Mandarin and English speakers' conceptions of time. *Cognitive Psychology*, 43, 1–22.
- Bowden, J. (1991). *Behind the Preposition. Grammaticalization of Locatives in Oceanic Languages*. Master's thesis, University of Auckland.
- Bowerman, M. (1996). Learning how to structure space for language: A crosslinguistic perspective. In P. Bloom, M. A. Peterson, L. Nadel, and M. F. Garrett (eds.), *Language and Space*, 385–436. MIT Press.
- Bowerman, M. and Choi, S. (2003). Space under construction: Language-specific spatial categorization in first language acquisition. In Gentner and Goldin-Meadow (2003), 387–427.
- Bright, W. (1957). *The Karok Language*. Number 23 in University of California Publications in Linguistics. University of California Press, Berkeley, CA.
- Brown, P. (1994). The INs and ONs of Tzeltal locative expressions. The semantics of static descriptions of location. *Linguistics*, 32, 743–790.
- Brown, P. (2006). A sketch of the grammar of space in Tzeltal. In Levinson and Wilkins (2006), 230–272.
- Brown, P. (2008). Up, down, and across the land: landscape terms, place names, and spatial language in Tzeltal. *Language Sciences*, 30(2-3), 151–181.
- Brown, P. and Levinson, S. C. (1993). 'uphill' and 'downhill' in Tzeltal. *Journal of Linguistic Anthropology*, 3(1), 46–74.
- Brown, P. and Levinson, S. C. (2000). Frames of spatial reference and their acquisition in Tenejapan Tzeltal. In L. P. Nucci, G. B. Saxe, and E. Turiel (eds.), *Culture, Thought, and Development*, 167–198. Lawrence Erlbaum Associates, Mahwah, NJ.

References

- Brush, C. B. (ed.) (1972). *The Selected Works of Pierre Gassendi*. Johnson, New York.
- Bühler, K. (1934). *Sprachtheorie. Die Darstellungsfunktion der Sprache*. Gustav Fischer, Jena.
- Carlson-Radvansky, L. A. and Irwin, D. A. (1993). Frames of reference in vision and language: Where is above? *Cognition*, 46, 223–244.
- Casey, E. (1998). *The Fate of Place: A Philosophical History*. University of California Press, Berkeley, CA.
- Cassirer, E. (1923). *Philosophie der symbolischen Formen*, volume 1: Die Sprache. B. G. Teubner, Berlin.
- Chafe, W. L. (ed.) (1980). *The Pear Stories: Cognitive, Cultural, and Linguistic Aspects of Narrative Production*. Ablex, Norwood, NJ.
- Chomsky, N. A. (1957). *Syntactic Structures*. Mouton, The Hague.
- Chomsky, N. A. (1967). Recent contributions to the theory of innate ideas. *Synthese*, 17(1), 2–11.
- Chomsky, N. A. (1972). *Language and Mind*. Harcourt Brace Jovanovich, New York.
- Chomsky, N. A. (1986). *Knowledge of Language*. Praeger, New York.
- Clark, H. H. (1973). Space, time, semantics, and the child. In T. E. Moore (ed.), *Cognitive Development and the Acquisition of Language*, 28–64. Academic Press, New York.
- Dixon, R. M. W. (1972). *The Dyirbal Language of North Queensland*. Number 9 in Cambridge Studies in Linguistics. Cambridge University Press, Cambridge, UK.
- Dumézil, G. (1975). *Le verbe oubykh. Études descriptives et comparatives*. Imprimerie Nationale, Paris.
- Ebert, K. H. (1999). The UP – DOWN dimension in Rai grammar and mythology. In Bickel and Gaenszle (1999), 105–131.
- Einstein, A. (1954). Foreword. In Jammer (1954), xi–xvi.
- Fillmore, C. J. (1971). Towards a theory of deixis. *The PCCLLU Papers*, 3(4), 219–241.
- Fillmore, C. J. ([1971] 1997). *Lectures on Deixis*. Number 65 in CSLI Lecture Notes. CSLI Publications, Stanford, CA.

- Fortescue, M. (1988). Eskimo orientation systems. *Meddr Grønland: Man and Society*, 11, 3–30.
- Friederici, A. and Levelt, W. J. M. (1990). Spatial reference in weightlessness: Perceptual factors and mental representations. *Perception & Psychophysics*, 47(3), 253–266.
- Gentner, D. and Goldin-Meadow, S. (eds.) (2003). *Language in Mind. Advances in the Study of Language and Thought*. MIT Press, Cambridge, MA.
- Gumperz, J. J. and Levinson, S. C. (eds.) (1996). *Rethinking Linguistic Relativity*. Cambridge University Press, Cambridge, UK.
- Hanks, W. (1990). *Referential Practice. Language and Lived Space among the Maya*. The University of Chicago Press.
- Hanks, W. F. (1996). Language form and communicative practices. In Gumperz and Levinson (1996), 232–270.
- Haugen, E. (1957). The semantics of Icelandic orientation. *Word*, 13, 447–460.
- Haviland, J. B. (1996). Projections, transpositions, and relativity. In Gumperz and Levinson (1996), 271–323.
- Heine, B. (1997). *Cognitive Foundations of Grammar*. Oxford University Press, Oxford, UK.
- Herskovits, A. (1986). *Language and Spatial Cognition*. Cambridge University Press, Cambridge, UK.
- Hornstein, N. (1990). *As Time Goes By*. MIT Press, Cambridge, MA.
- Jackendoff, R. (1983). *Semantics and Cognition*. MIT Press, Cambridge, MA.
- Jacobson, S. A. (1984). Semantics and morphology of demonstratives in Central Yup'ik Eskimo. *Etudes / Inuit / Studies*, 8, 185–192.
- Jakobson, R. ([1957] 1971). Shifters, verbal categories, and the Russian verb. In *Selected Writings of Roman Jakobson*, volume 2, 130–147. Mouton, The Hague.
- James, W. (1907). *Pragmatism, a New Name for Some Old Ways of Thinking. Popular Lectures on Philosophy*. Longmans, Green.
- Jammer, M. (1954). *Concepts of Space. The History of Theories of Space in Physics*. Harvard University Press, Cambridge, MA.

References

- Johnston, J. R. and Slobin, D. I. (1979). The development of locative expressions in English, Italian, Serbo-Croatian and Turkish. *Journal of Child Language*, 6(3), 529–45.
- Kant, I. (1768). Von dem ersten Grunde des Unterschiedes der Gegenden im Raume. In Königlich preußische Akademie der Wissenschaften (ed.), *Werke*, volume 2 of *Kants gesammelte Schriften*, 375–384.
- Kant, I. (1781). *Kritik der reinen Vernunft*. Königlich preußische Akademie der Wissenschaften, Königsberg.
- Kim, A. H.-O. (1988). Preverbal focusing and type XXIII languages. In M. Hammond, E. Moravcsik, and J. Wirth (eds.), *Studies in Syntactic Typology*, 148–171. John Benjamins, Amsterdam.
- Koffka, K. (1935). *Principles of Gestalt Psychology*. Harcourt Brace Jovanovic, New York.
- Köhler, W. (1929). *Gestalt Psychology*. Liveright, New York.
- Lambrecht, K. (1994). *Information Structure and Sentence Form*. Cambridge University Press, Cambridge, UK.
- Landau, B. and Jackendoff, R. (1993). ‘what’ and ‘where’ in spatial language and spatial cognition. *Behavioral and Brain Sciences*, 16, 217–238.
- Leipzig Glossing Rules (n.d.). <http://www.eva.mpg.de/lingua/resources/glossing-rules.php>.
- Levinson, S. C. (1999). H.P. Grice on location on Rossel Island. *Proceedings of the Berkeley Linguistics Society*, 25, 210–224.
- Levinson, S. C. (2000). *Presumptive Meanings*. MIT Press, Cambridge, MA.
- Levinson, S. C. (2001). Covariation between language and cognition and its implications for language learning. In M. Bowerman and S. C. Levinson (eds.), *Language Acquisition and Conceptual Development*, 566–588. Cambridge University Press, Cambridge, UK.
- Levinson, S. C. (2003). *Space in Language and Cognition: Explorations in Cognitive Diversity*. Number 5 in Language Culture and Cognition. Cambridge University Press, Cambridge, UK.
- Levinson, S. C. and Wilkins, D. P. (eds.) (2006). *Grammars of Space: Explorations in Cognitive Diversity*. Number 6 in Language Culture and Cognition. Cambridge University Press, Cambridge, UK.

- Li, P. and Gleitman, L. (2002). Turning the tables. Language and spatial reasoning. *Cognition*, 83, 265–294.
- Lucy, J. A. (1992). *Grammatical Categories and Cognition. A Case Study of the Linguistic Relativity Hypothesis*. Cambridge University Press, Cambridge, UK.
- Lyons, J. (1977). *Semantics*. Cambridge University Press, Cambridge, UK.
- Lyons, J. (1995). *Linguistic Semantics. An Introduction*. Cambridge University Press, Cambridge, UK.
- Mayer, M. (1969). *Frog, Where Are You?* Dial, New York.
- Miller, G. A. and Johnson-Laird, P. N. (1976). *Language and Perception*. Cambridge University Press, Cambridge, UK.
- Murane, E. (1974). *Daga Grammar. From Morpheme to Discourse*. Number 43 in Summer Institute of Linguistics Publications in Linguistics and Related Fields. Summer Institute of Linguistics, Norman, OK.
- Newton, I. ([1689] 1934). *Scholium to the Definitions in Philosophiae Naturalis Principia Mathematica, Book 1*. University of California Press, Berkeley, CA.
- Opgenort, J. R. (2004). Implosives and preglottalized stops in Kiranti. *Linguistics of the Tibeto-Burman area*, 27, 1–27.
- Paudyal, N. P. (in prep.). *A Grammar of Chintang*. Ph.D. thesis, University of Leipzig.
- Pederson, E. and Nuyts, J. (eds.) (1997). *Language and Conceptualization*. Cambridge University Press, Cambridge, UK.
- Peirce, C. S. (1932). Division of signs. In *Collected papers of Charles Sanders Peirce*, volume 2: Elements of Logic. Harvard University Press, Cambridge, MA.
- Piaget, J. and Inhelder, B. ([1948] 1956). *The Child's Conception of Space*. Routledge, London.
- Poincaré, H. (1946). *The Foundations of Science*. Science Press, Lancaster, PA.
- Poppitz, S. (2008). *Case, Case Composition, and Adverbs in Chintang*. Master's thesis, University of Leipzig.

References

- Rai, N. K., Paudyal, N. P., and Bickel, B. (2005). Spatial deixis in Chintang. Paper presented at the 26th annual conference of the Linguistic Society of Nepal. Kathmandu, November 26-27th, 2005.
- Reichenbach, H. (1947). *Elements of Symbolic Logic*. Macmillan, New York.
- Robins, R. H. (1958). *The Yurok Language. Grammar, Texts, Lexicon*. University of California Press, Berkeley, CA.
- Rorty, R. (ed.) (1967). *The Linguistic Turn. Recent Essays in Philosophical Method*. University of Chicago Press, Chicago, IL.
- Rymer, R. (1992). A silent childhood. *The New Yorker*, April 20.
- Schultze-Berndt, E. (2006). Sketch of a Jaminjung grammar of space. In Levinson and Wilkins (2006), 63–113.
- Senft, G. (2006). Prolegomena to a Kilivila grammar of space. In Levinson and Wilkins (2006), 206–229.
- Slobin, D. I. (1985). Crosslinguistic evidence for the language-making capacity. In D. I. Slobin (ed.), *The Crosslinguistic Study of Language Acquisition*, volume 2, 1157–1256. Lawrence Erlbaum Associates, Mahwah, NJ.
- Slobin, D. I. (2004). The many ways to search for a frog: Linguistic typology and the expression of motion events. In S. Strömquist and L. T. Verhoeven (eds.), *Relating Events in Narrative: Typological and Contextual Perspectives*, 219–257. Lawrence Erlbaum Associates, Mahwah, NJ.
- Svorou, S. (1994). *The Grammar of Space*. Number 25 in Typological Studies in Language. John Benjamins, Amsterdam.
- Talmy, L. (1983). How language structures space. In H. Pick and L. Acredolo (eds.), *Spatial Orientation. Theory, Research and Application*, 225–320. Plenum Press, New York.
- Talmy, L. (1985). Lexicalization patterns. Semantic structure in lexical forms. In T. Shopen (ed.), *Language Typology and Syntactic Description*, volume 3: Grammatical categories and the lexicon, 57–149. Cambridge University Press, Cambridge, UK.
- Talmy, L. (2007). Lexical typologies. In T. Shopen (ed.), *Language Typology and Syntactic Description*, volume 3, 66–168. Cambridge University Press, Cambridge, UK, 2 edition.

- van Driem, G. (1991). Bahing and the Proto-Kiranti verb. *Bulletin of the School of Oriental and African Studies*, 54, 336–356.
- van Driem, G. (2001). *Languages of the Himalayas. An Ethnolinguistic Handbook of the Greater Himalayan Region, Containing an Introduction to the Symbiotic Theory of Language*. Brill, Leiden.
- Weissenborn, J. (1986). Learning how to become an interlocutor: The verbal negotiation of common frames of reference and actions in dyads of 7- to 14-year-old children. In J. Cook-Gumperz, W. A. Corsaro, and J. Streeck (eds.), *Children's Worlds and Children's Language*, Number 47 in New Babylon, 377–404. Mouton de Gruyter, Berlin.
- Welmers, W. E. (1973). *African Language Structures*. University of California Press, Berkeley, CA.
- Whorf, B. L. (1956). *Language, Thought, and Reality*. MIT Press, Cambridge, MA.
- Wilkins, D. P. (1999). “THIS” and “THAT” in comparative perspective. In D. P. Wilkins (ed.), *“Manual” for the 1999 field season*, 1–24. Unpublished field manual. Language and Cognition Group at the Max Planck Institute for Psycholinguistics, Nijmegen.
- Wilkins, D. P. and Senft, G. (1993). Route description elicitation. In Cognitive Anthropology Research Group (ed.), *Cognition and Space Kit. Version 1.0*, 15–28. Unpublished field manual. Language and Cognition Group at the Max Planck Institute for Psycholinguistics, Nijmegen.