Anastasia Bauer

The Use of Signing Space in a Shared Signing Language of Australia

Sign Language Typology 5

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De Gruyter Mouton · Ishara Press

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by
Anastasia Bauer

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ISBN 978-1-61451-733-7
e-ISBN 978-1-61451-547-0
ISSN 2192-5186
e-ISSN 2192-5194

Library of Congress Cataloging-in-Publication Data

A CIP catalog record for this book has been applied for at the Library of Congress.

Bibliographic information published by the Deutsche Nationalbibliothek

The Deutsche Nationalbibliothek lists this publication in the Deutsche Nationalbibliografie; detailed bibliographic data are available on the Internet at http://dnb.dnb.de.

© 2014 Walter de Gruyter, Inc., Boston/Berlin and Ishara Press, Lancaster, United Kingdom

Printing and binding: CPI books GmbH, Leck
♾ Printed on acid-free paper

Printed in Germany

www.degruyter.com

Acknowledgements

This book is the revised and edited version of my doctoral dissertation that I defended at the Faculty of Arts and Humanities of the University of Cologne, Germany in January 2013. It is the result of many experiences I have encountered from dozens of remarkable individuals who I wish to acknowledge. First of all, this study would have been simply impossible without its participants. The data that form the basis of this book I owe entirely to my Yolngu family who taught me with patience and care about this wonderful Yolngu language. My deepest gratitude goes to all Yolngu people from Galiwin'ku and Mapuru who shared their language, their knowledge and their hospitality with another Balanda coming to their land. I would like to express my very great appreciation to Elaine L. Maypilama for her assistance with the collection of my data. I am particularly thankful for her taking care of me during my stay in Galiwin'ku. I very much enjoyed our meals by the fire and our conversations.

It gives me great pleasure in acknowledging the support and help of Roland Pfau, who has been a quiet influence on my work even before I started writing this book. I owe my sincere thanks to him, as his linguistic and writing skills have contributed so much to this book. I very much appreciate his willingness to give his time so generously.

The research was undertaken with the financial assistance of German Research Foundation (DFG) as a part of EuroBABEL project ("Endangered Sign Languages in Village Communities") guided by Ulrike Zeshan. During the research time, I was also fortunate to receive support from the Alfred Toepfer Stiftung F.V.S. The Northern Land Council facilitated the acquisition of the permit necessary to undertake fieldwork in Arnhem Land. I am indebted to different people in Northern Territory for helping me before, during and after the fieldwork. I would like to thank John Greatorex, Anne Lowell, Brian and Nancy Devlin, Stephen Hill, Graig Danvers, Nia Emmanouil and other great women from CERES Global for the adventurous road trip to Mapuru.

I would like to acknowledge the sign language research groups at the Radboud University of Nijmegen, University of Central Lancashire and Georg-August University of Göttingen. My visits were always inspiring and stimulating and have been critical to my being able to maintain my motivation and enthusiasm. I am grateful to all the sign language researchers and colleagues for their support and interest in my research. I am particularly indebted to Inge Zwitserlood for her expertise and continuous support throughout many years. Inge, thank you for bringing me to classifiers.

I consider it an honor to have been able to discuss my research with a renowned pioneer of Australian Aboriginal sign languages, Adam Kendon. Adam, thank you very much for your valuable and constructive comments on my study. I enjoyed our long conversation in Cologne.

My gratitude and thanks also go to Marie Coppola, Pamela Perniss, Victoria Nyst, Olivier Le Guen, Vadim Kimmelmann and Susanne Mohr who gave productive feedback on previous drafts of the book. I owe thanks to Irit Meir, Angela Nonaka, Connie de Vos, Jenny Green, Erin Wilkinson and Joke Schuit for their insightful comments on various sign languages. I also thank Getrud Boden, Juliane Kabisch-Lindenlaub, Anne Fehn, Nikolaus Himmelmann, Patrick McConvell, Andrew Butcher, Suzannah O'Reilly, Peter Bakker and Rolf Kuschel for providing insights into their research and thus contributing to this book.

My colleagues Timo Klein and Anthony Bülow deserve my special thanks for their support and encouragement during the challenging stages of writing up this book. Timo, thank you for your invaluable technical assistance in preparing the illustrations. During some of the more difficult stages of my PhD studies at the University of Cologne, I wish to acknowledge the help provided by Stefan Grohé, Norbert Finzsch, Thomas Kaul and Ulrich Obst, who always provided me with a listening ear in a difficult situation. Very special thanks are owed to my German Sign Language teachers: Reiner Griebel und Christo Sailer. Thank you so much for teaching me your beautiful language. I am also indebted to Christo for modeling some of the DGS signs for this study. My gratitude goes to Camilo Gray and his colleagues from the Multimedia Group at the University of Cologne for their assistance with the digital archiving of the video files.

I would also like to thank Claudia Hunt, Kathryn Bausch, Russell Watson, Amanda Hähn-Woods, Kelly Hähn-Hawrylyshyn for the English proofreading. Assistance provided by the editoral assistants of SLT Series, Nicola Wright and Robin Arora was also greatly appreciated.

I also thank my friends, family and God, who gave me Maxim. He was on his way during writing of this book and made me the happiest person on earth. I thank my parents-in-law, Gertrud and Hartmut, who supported me in this whole undertaking from the very beginning. Uli, words cannot express how grateful I am for your unconditional love and support. I could not have completed this book without you. Finally, I thank my mother, Valentina, who made me curious and did everything possible for me: my school education in Russia, my high school year in the USA and my master and PhD studies in Germany. Мама, я тебе бесконечно благодарна.

Contents

Acknowledgements v

List of figures xiii

List of tables xvii

Abbreviations xviii

Sign language acronyms xix

Glossary xxi

Notational conventions xxii

Part I: Introduction

1 Introduction 3

1.1 Research aims and objectives 5

1.2 Outline of the book 7

2 Sign language types 10

2.1 Deaf community sign languages 12

2.2 Emerging sign languages 13

2.3 Village sign languages 15

2.3.1 Socioeconomic and demographic settings 15

2.3.2 Social homogeneity 16

2.3.3 (Socio-)Linguistic context 17

2.3.4 Degree of endangerment 18

2.4 Alternate sign languages 19

2.4.1 Sawmill Sign Language 20

2.4.2 Monastic sign languages 21
2.4.3 Plains Indian Sign Language 22
2.4.4 Keresan Pueblo Indian Sign Language 23
2.4.5 Australian Aboriginal sign languages 23
2.5 Shared sign languages 28
2.6 Summary 30

Part II: Sociolinguistic Background & Methodology

3 Cultural and sociolinguistic context 35
3.1 Previous studies 35
3.2 Historic & demographic background 37
3.3 Cultural background 40
3.4 Linguistic context 41
3.5 The use of YSL in Yolngu communities 46
3.5.1 Communication with deaf Yolngu 47
3.5.2 Interaction over distance 50
3.5.3 Further aspects of YSL origin and use 50
4 Data collection 54
4.1 Fieldwork 54
4.1.1 Fieldwork sites 54
4.1.2 Cultural issue 57
4.2 Stimulus materials 58
4.2.1 Spontaneous signing 59
4.2.2 Elicited signing 59
4.2.2.1 Visual materials 59
4.2.2.2 Questionnaires and games 62
4.2.2.3 Translation from English and Djambarrpuyŋu 63

4.3 Participants 64
4.4 Data annotation 67

Part III: Selected Aspects of YSL Grammar

5 Phonological aspects 75
5.1 Handshapes 75
5.1.1 Basic handshapes 78
5.1.1.1 Token frequency 79
5.1.1.2 Type frequency 80
5.1.1.3 Non-dominant hand frequency 80
5.1.2 Marginal handshapes 82
5.2 Sign types: preference for one-handedness 84
5.3 Nonmanual markers 90
5.3.1 Mouth gestures 90
5.3.2 Mouthings 94
5.3.3 Head movements 96
5.3.3.1 SLEEP vs. EXIST 96
5.3.3.2 BÄYÐU vs. YAKA 98
5.4 Summary 100
6 Syntactic aspects 101
6.1 Negation 101
6.1.1 Negation in Djambarrpuyŋu 101
6.1.2 Negation in YSL 102
6.1.3 Summary 106
6.2 Interrogatives 106
6.2.1 Content questions 107
6.2.1.1 Question word paradigm 107

6.2.1.2 Syntactic position of question signs 111
6.2.2 Polar questions 114
6.2.3 Nonmanual marking 117
6.2.4 Summary 118

Part IV: Use of Space

7 The size of signing space 123

8 Pronominal reference 127
8.1 Pronouns in spoken languages 127
8.2 Pronouns in sign languages 128
8.2.1 Metaphorical pointing 134
8.2.2 Cross-linguistic variation in metaphorical pointing 136
8.3 Pronouns in Djambarrpuyŋu 137
8.4 Pronouns in YSL 139
8.4.1 Person 139
8.4.2 Number 142
8.4.3 Clusivity 144
8.4.4 Case 145
8.4.5 Summary & comparison to NCDSLs 147
8.4.6 Pointing to a house: the use of metonymic pointing in YSL 147
8.5 Summary 154

9 Verb directionality 156
9.1 Verb agreement in spoken languages 156
9.2 Verb directionality in sign languages 159
9.2.1 Sign language verb classes 159

9.2.2 Disagreements on agreement 163
9.3 Verb directionality in YSL 166
9.3.1 YSL verb classes: plain vs. non-plain 166
9.3.1.1 Frequency of spatial modification in non-plain verbs 169
9.3.1.2 Directional verbs 175
9.3.1.3 Absence of number marking 178
9.3.1.4 Optional object or location marking on YSL verbs 179
9.4 Constituent order in transitive clauses 179
9.4.1 YSL constituent order 180
9.4.2 Djambarrpuyŋu constituent order 182
9.4.3 Disscussion 183
9.5 Summary 184
10 Expression of motion 186
10.1 Classifiers in spoken languages 186
10.2 Classifiers in sign languages 188
10.2.1 Entity classifiers 189
10.2.2 Handling classifiers 191
10.3 Expression of motion in YSL 193
10.3.1 YSL Directionals 193
10.3.2 YSL Classifiers 196
10.3.2.1 Entity classifiers in YSL 197
10.3.2.1.1 The handshape 198
10.3.2.1.2 The handshape 200
10.3.2.1.3 The handshape 202
10.3.2.2 Handling classifiers in YSL 204
10.4 Summary 207

11 Expression of size and shape 209
11.1 Size and Shape Specifiers in sign languages 209
11.2 Size and Shape Specifiers in YSL 210
11.3 Summary 214

Part V: Discussion & Conclusion

12 YSL in cross-linguistic perspective 217
12.1 The use of space in shared sign languages 218
12.1.1 The lack of metaphorical pointing 218
12.1.2 Limited use of spatial modification in transitive verbs 218
12.1.3 Restricted use of entity classifiers 219
12.2 Language-external factors and sign language structure 220
12.2.1 Age of language 221
12.2.2 Frame of reference 223
12.2.3 Size of community and context-dependency 225
12.2.4 Proportion of hearing signers 226
13 Concluding remarks 229

Appendix I: List of YSL handshapes 231

Appendix II: Figures 233

Appendix III: Data 234

Notes 235

References 247

Index 275

Curriculum vitae 279

List of figures

Figure 1	The mosaic of sign language data	11
Figure 2	Distribution of sign languages in Australia	24
Figure 3	The North Central Desert communities	26
Figure 4	Sign language types	31
Figure 5	Yolngu communities and homelands in the NE Arnhem Region	38
Figure 6	Distribution of Pama-Nyungan and Non-Pama-Nyungan language families	42
Figure 7	Schebeck's classification of dialect groups in North East Arhem Land	44
Figure 8	Map of the approximate territories of Yolngu dialect groups	45
Figure 9	Northern part of the Northern Territory, Australia	55
Figure 10	Map of North East Arnhem Land, with fieldwork locations indicated	55
Figure 11	Elcho Island and the settlement of Galiwin'ku	57
Figure 12	Frames from video clips used for the elicitation	61
Figure 13	A sample from the number stimuli material	61
Figure 14	Stimulus items for eliciting classifiers	62
Figure 15	A snapshot of an open ELAN window	68
Figure 16	Phonologically distinguished minimal pairs in YSL	76
Figure 17	Tense vs. lax realization of two YSL handshapes	77
Figure 18	Variation in handshape in YSL tokens for GAPU 'water'	78
Figure 19	Relative frequency of the phonetic handshapes based on tokens	79
Figure 20	Relative frequency of the phonetic handshapes based on types	80
Figure 21	Relative frequency of the handshapes of the non-dominant hand in two-handed YSL signs (n=109)	81

Figure 22	Basic handshapes in YSL	82
Figure 23	Infrequent YSL handshapes	83
Figure 24	The YSL sign WARRNYU ‘flying fox’	83
Figure 25	Three infrequent YSL handshapes	84
Figure 26	Number-related handshapes in YSL	84
Figure 27	One-handed versus symmetrical two-handed YSL sign	85
Figure 28	Two-handed signs in YSL	86
Figure 29	Relative frequency of sign types in YSL (n=3955)	87
Figure 30	A two-handed sign in YSL	88
Figure 31	Two-handed symmetrical alternating sign in YSL	88
Figure 32	An example of a weak drop in YOTHU ‘child’	89
Figure 33	ISL sign AWESOME	91
Figure 34	Nonmanual in the YSL sign MÄNA	91
Figure 35	YSL mouth gestures	92
Figure 36	An adverbial mouth gesture in YSL	93
Figure 37	Echo phonology mouth gesture in BSL	93
Figure 38	DGS sign BRUDER ‘brother’	94
Figure 39	YSL sign SLEEP	97
Figure 40	YSL sign EXIST	97
Figure 41	YSL negative particle YAKA	98
Figure 42	YSL negative particle BÄYDU	99
Figure 43	Two variants of YSL clause negator BÄYDU	103
Figure 44	YAKA	103
Figure 45	IPSL general wh-sign	108
Figure 46	YSL question sign (QS)	109
Figure 47	YSL complex wh-sign ‘what time’	110
Figure 48	The position of the QS within the YSL clause (n=90)	111
Figure 49	Nonmanual marking in YSL polar question	117
Figure 50	Signing space in DCSLs	123

Figure 51	YSL sign YAPA ‘sister’	124
Figure 52	YSL sign MÄRI ‘mother’s mother’	124
Figure 53	YSL signs DHUWAY ‘husband’ and BÄPA-MUKUL ‘father’s sister’	125
Figure 54	Foot as a place of articulation	125
Figure 55	YSL signing space	126
Figure 56	ASL personal pronominals (singular)	129
Figure 57	Personal pronoun WE in ASL and BSL	129
Figure 58	BSL pronominal sign TWO-OF-US	130
Figure 59	Gender marking in TSL	132
Figure 60	ASL honorific pronouns	133
Figure 61	Signing space and localization of referents	135
Figure 62	YSL first person pronominal sign ŊARRA	140
Figure 63	Handshape variation in the YSL sign ŊARRA	140
Figure 64	YSL non-first person pronominal signs	141
Figure 65	YSL pronominal sign LIMURR (the first person plural)	142
Figure 66	Dual inclusive pronominal sign ŊALI	144
Figure 67	YSL pronominal sign ŊALI.EXCL	145
Figure 68	YSL sign Darwin	153
Figure 69	ASL verb EAT	159
Figure 70	ISL verb agreement	160
Figure 71	TSL phrase ‘The child ran into the house’	162
Figure 72	Plain verbs in YSL	167
Figure 73	A “congruent” verb GURRUPA ‘to give’	168
Figure 74	Relative frequency of verbs types in the YSL data (n=787)	168
Figure 75	YSL verb RIRRIKTHU ‘to be sick/to hurt’	171
Figure 76	Modified verb RIRRIKTHU ‘to be sick/ill’	172
Figure 77	Frequency of spatial modification in spatial verb	172
Figure 78	Frequency of spatial modification in directional verbs	173

Figure 79	Spatially unmodified verb GURRUPA ‘to give’	174
Figure 80	Spatially modified verb ‘to make sick/to kill’	175
Figure 81	Spatially modified verb LAKARA for a non-present referent	177
Figure 82	The YSL verb GURRUPA ‘give’	178
Figure 83	Frequency of word order in YSL transitive sentences (n=211)	181
Figure 84	ASL constructions using entity classifiers	190
Figure 85	HKSL constructions using entity classifiers	190
Figure 86	ISL handling classifiers	192
Figure 87	The initial and final position of DIR-COME-HERE	193
Figure 88	The initial and final position of DIR-GO-THERE	194
Figure 89	DIR-GO-THERE	194
Figure 90	Elevated end point of a directional sign	195
Figure 91	Three YSL handshapes	197
Figure 92	YSL verb MARRTJI ‘to walk’	199
Figure 93	YSL handshape resembling an entity classifier	201
Figure 94	YSL directional	203
Figure 95	YSL handling classifier handshapes	205
Figure 96	YSL handling classifier	205
Figure 97	TİD SASS	209
Figure 98	SASSes in YSL	210
Figure 99	$SASS_{rectangular}$	211
Figure 100	YSL compound	212
Figure 101	Two different compounds with a meaning ‘waterhole’	213
Figure 102	The proportion of hearing and deaf signers in signing communities	227
Figure 103	A sample of a stimuli picture	233
Figure 104	The sign for ‘Aboriginal’ in the sign language used in north Queensland	233

List of tables

Table 1	The prevalence of deafness in selected deaf villages	16
Table 2	Comparison of selected (socio-)linguistic features of alternate sign languages	29
Table 3	Types of collected YSL data	58
Table 4	Participants' characteristics	64
Table 5	Distribution of the YSL data	65
Table 6	The percentage of one vs. two-handed signs in YSL and BSL	87
Table 7	The percentage of symmetrical two-handed signs in YSL and BSL	88
Table 8	Basic pronouns in Djambarrpuyŋu	138
Table 9	YSL pronominal signs	139
Table 10	Classification of verbs in YSL	184
Table 11	YSL compounds	212

Abbreviations

1SG	first person singular
1PL	first person plural
2SG	second person singular
3SG	third person singular
ABL	ablative
DU	dual
EXCL	exclusive
F	feminine
INCL	inclusive
IMPV	imperfective
cf	compare
CL	classifier
LOC	locative
NE Arnhem Land	North East Arnhem Land
NEG	negation
Qpart	question particle
QS	question sign
PROM	prominence

Sign language acronyms

In cases when the acronym is based on the name of the sign language in the respective country, these names are given in brackets in italics.

ABSL	Al-Sayyid Bedouin Sign Language
AdaSL	Adamorobe Sign Language
AJSL	Algerian Jewish Sign Language
ASL	American Sign Language
Auslan	Australian Sign Language
BSL	British Sign Language
CSL	Chinese Sign Language
DGS	German Sign Language (*Deutsche Gebärdensprache*)
DSL	Danish Sign Language
DCSLs	Deaf community sign languages
FSL	Finnish Sign Language
GSL	Greek Sign Language
HSL	Hausa Sign Language
HZJ	Croatian Sign Language (*Hrvatski Znakovni Jezik*)
IPSL	Indopakistani Sign Language
ISL	Israeli Sign Language
IUR	Inuit Sign Language (*Inuit Uukrutausingit*)
JKS	Jamaican Konchri Sain
KPISL	Keresan Pueblo Indian Sign Language
KK	Kata Kolok
LIU	Jordanian Sign Language (*Lughat al-Ishaara al-Urdunia*)
LSB	Brazilian Sign Language
LSC	Catalan Sign Language (*Llengua de Signes Catalana*)
NS	Japanese Sign Language (*Nihon Shuwa*)

MCE	Manually-Coded English
MSL	Mauritian Sign Language
MVSL	Martha's Vineyard Sign Language
NCDSLs	North Central Desert Area Sign Languages
NGT	Sign Language of the Netherlands (*Nederlandse Gebarentaal*)
NSL	Nicaraguan Sign Language
PISL	Plain Indian Sign Language
PROVISL	Providence Island Sign Language
RSL	Russian Sign Language
TİD	Turkish Sign Language (*Türk İşaret Dili*)
TSL	Taiwan Sign Language
Thai SL	Thai Sign Language
SSL	Swedish Sign Language
YMSL	Yucatec Maya Sign Language
YSL	Yolngu Sign Language

Glossary

BALANDA a term used to refer to non-Aboriginal or European people. The term derives from the word *Hollander*, a term introduced by the Maccassan people from Sulawesi to Arnhem Land.

YOLNGU is used to refer to the Indigenous inhabitants of the North East Arnhem Land in the Northern Territory of Australia. In local Yolngu languages it is the equivalent of 'person' or 'people'.

YOLNGU MATHA (lit. Yolngu tongue) is the common term used by Yolngu to refer to the range of all traditional languages in North East Arnhem Land.

Notational conventions

The study provides signed examples with still images cut from the recorded signed descriptions. The cultural limitations associated with photographing and displaying any recorded materials of the Indigenous population are discussed in section 4.3. In instances where multimedia representations where impossible to capture or required further description, a multi-line text transcriptions of signed statements were usually used. Following the common practice in the sign language literature, the signs are glossed in small capitals (GLOSS), with one or several additional lines on top to mark nonmanual markers (see example below).

Glosses from Djambarrpuyŋu, the local spoken language, were chosen for YSL signs for the following reasons: 1) the meaning of Djambarrpuyŋu words closely represent the meaning of YSL signs and some concepts unique to the local culture lacked English counterparts (in particular kinship signs); 2) using Djambarrpuyŋu glosses appears to be beneficial for the analysis of multimodal utterances, i.e. the relationship between simultaneous signing and speaking.

For illustration of notational conventions, consider the following example of interlinear text[1] with four lines from Yolngu Sign Language. The first line shows non-manual markers (see abbreviations for non-manuals below). The second line presents YSL glosses in Djambarrpuyŋu small caps, the third displays information about the meaning and grammatical properties, which are rendered by abbreviated grammatical category labels (a list of abbreviations is given in general abbreviations above), and the forth provides a free translation of the signed Yolngu Sign Language utterance into English. For all examples that the author collected herself, the source file names as an extra line following the example are provided (see also Appendix III for a complete list of all file names).

[YSL]

ŋarra	*mg:tongue*	*balanyamirr*	*raku*	*ga buliki*	*ga ŋatha*
ŊARRA	LAKARA	ŊAPIPI	ŊARRA	BULIKI	ŊATHA
1SG	tell	mother's brother	1SG	meat	food

ga dilip	*maram*	*shop*		*gurrupa*	*raku*
DILIP	$_{3a}$MÄRRA$_{1}$	IX$_{3a}$	$_{3a}$MÄRRA$_{1}$	GURRUPA$_{3b}$	ŊARRA
tea	get	shop	get	give	1SG

'I will tell my uncle to get me some meat, food and tea from the shop'[2].

Sequence17_21JUL_L_2010.mpg

The following notation conventions are used:

GLOSS	lexical sign
GLOSS+GLOSS	compounding (e.g. COLD+BOX)
GLOSS#GLOSS	simultaneous morphemes (e.g. TWO#WEEK)
GLOSS^GLOSS	sequential morphemes (e.g. WORK^AGENT)
GLOSS-GLOSS	single sign consisting of several words (e.g. SEND-LETTER)
GLOSS_1	sign used as pronouns and for localization of referents (e.g. IX_{3a} in the example above). The subscript numbers have the following meaning: 1 = towards signer's chest; 2 = towards addressee; 3 = towards non-addressee; 3a/3b/3c = towards any location in the signing space
$_1\text{GLOSS}_2$	sign moving from one referential/real world location to another (in the example above the verb $_{3a}\text{MÄRRA}_1$ moves from the real-world location of the shop to the locus near the signer's chest)
IX.PRO	pointing sign in pronominalization for non-first person referents
$\text{SASS}_{\text{rectangular}}$	Size and Shape Specifier outlining an entity's size/shape
CL_{boat}	classifier with a subscript specifying the entity that is classified or a shape characteristic as in CL_{round}

As for the non-manual markers, following abbreviations are used.

re	raised eyebrows
le	lowered eyebrows
hn	head nod
hs	head shake

ht	head tilt
hm	head movement to the side, or forward
eg	eye gaze
ew	eyes wide opened
ec	eyes closed
lp	lip pointing
tl	torso leaning towards the front
s	shoulders movement
mg	mouth gesture
mg: pl	pursed lips
mg: teeth	opened mouth showing teeth
mg: op	opened mouth
mg: cd	corners of the mouth pulled down
mg: bl	blowing air
mg: t	showing tongue
mg: sm	smelling
mg: pf	puffed cheeks

Part I

Introduction

Chapter 1
Introduction

The focus of this study is on a language used by Indigenous Australian people in the North East Arnhem Land (Australia) referred to here as Yolngu Sign Language (henceforth: YSL). The domain of interest is the manifestation of signing space – the articulatory space surrounding the signers – for grammatical purposes in Yolngu Sign Language.

The aim of this study is to describe the sign language used by Yolngu, since "it is of utmost importance for sign language typology to collate data from sign languages that are as diverse as possible" (Zeshan, 2008, p. 686). The investigation into the spatial grammar of Yolngu Sign Language is of particular significance, since previous studies on small non-urban sign languages from non-Western societies with a great number of hearing signers have found radical differences in the use of space if compared to large urban Deaf community sign languages[3] (Nyst, 2012; De Vos & Zeshan, 2012). Thus, there is an urgency in documenting the organization of the signing space in Yolngu Sign Language to gain a better understanding of typological variability of sign language structures. Additionally, the absence or presence of particular grammatical spatial structures in Yolngu Sign Language may throw additional light on the discussion whether some sociolinguistic characteristics might influence the linguistic structure of languages in visual-spatial modality.

The importance of this study is supported by the following arguments. Firstly, Yolngu Sign Language is remarkable in a number of respects: (i) there is no evidence that this sign language used by Yolngu people is historically related to any other known sign language. (ii) Yolngu Sign Language has evolved in sociolinguistically exceptional settings: it is mainly used by hearing Yolngu people but it is also the primary language for a few deaf individuals (see also Cooke & Adone, 1994). (iii) This sign language may be classified as a potentially endangered language, which appears to be severely understudied and underdocumented (Meir, Lanesman, Adone, & Cumberbatch, 2012). Furthermore, these unique sociolinguistic characteristics make Yolngu Sign Language extremely interesting for cross-linguistic comparison and for sign language typology. This emerging field of study draws upon a very limited range of data mainly from Western European and North American sign languages (Zeshan, 2008). Although there have been some occasional publications on small rural signing communities in the past

(Kakumasu, 1968; Washabaugh, 1979; Groce, 1985), studying non-urban sign languages from non-Western societies has only become the object of research in the last years (Nonaka, 2004; Nyst, 2007; Marsaja, 2008; Schuit, 2012). Prior to the latest research, sign languages were believed to be strikingly homogeneous in grammatical aspects such as the organization of the signing space. Researchers have argued that all sign languages use locations in three-dimensional space in front of the signer's body to introduce referents into discourse or to mark the arguments of the verbs (Padden, 1988; Meier, 1990; Janis, 1995; Liddell, 2003). These and other spatial devices have been described as being similar across sign languages as a consequence of the visual-spatial modality, which creates a homogenizing effect on spatial structure (Meier, 2002b; Aronoff, Meir, & Sandler, 2005). As a result, the research on a number of Western European and North American sign languages existing "under similar sociolinguistic conditions" led to conclusion that all sign languages have a bundle of reoccurring linguistic structures, such as classifier constructions or spatial inflection on verbs to mark agreement (Johnston, 1989, p. 240). However, the first linguistic studies of sign languages in small-scale rural societies revealed first typologically differentiated patterns and provided counterevidence to some assumed universals of sign language (Washabaugh, Woodward, & DeSantis, 1978). Further detailed analysis of the so-called *village sign languages* has validated the absence of particular modality specific features in these languages (Washabaugh, 1986; Nyst, 2007; Marsaja, 2008; De Vos, 2012). The comparison of grammatical structures among these sign languages has shown that there is a greater amount of linguistic diversity across sign languages than previously thought, in particular with regard to the possibilities governing the use of space. Thus, a growing body of research shows that some languages do not make use of the heretofore presumed modality-specific constructions such as entity classifiers, spatially modified directional verbs and abstract anaphoric loci in space (Nyst, 2007, 2012; De Vos, 2010a; Padden, Meir, Aronoff, & Sandler, 2010). This study of Yolngu Sign Language looks to contribute to this literature and to our understanding of sign language diversity in general. The results from this study describe many similarities of Yolngu Sign Language in the use of space with the other small rural signing varieties. This study shows that many of the structural characteristics of signing used by large urban Deaf communities appear in YSL signing as well, although some striking deviations also exist.

One of the important outcomes of this study is the development of the first data corpus of Yolngu Sign Language, which was transcribed and annotated by the author using the tool ELAN. This data corpus may be prospectively

used for further linguistic analyses of this sign language and, especially, as a basis for comparison with other sign languages, thus, contributing to a better understanding of the linguistic diversity and typology of sign languages around the world (Zeshan, 2011b). This corpus-based study includes elicited and spontaneous Yolngu Sign Language data. The array of grammatical constructions to be discussed in this study relies on what has been found in the corpus. Not having been able to record any natural interaction[4], I must mention here that the descriptions of the various grammatical and lexical constructions should be regarded as initial hypotheses, which need to be further evaluated.

The analysis of Yolngu Sign Language builds upon the assumption that languages in both modalities, oral-auditory and visual-spatial, are constrained by underlying specialized innate language principles or mechanisms. Since sign languages are natural languages parallel to spoken languages in various levels of grammar (Klima & Bellugi, 1979), they should be subject to the same principles governing spoken languages. Research over the last 60 years has proven that the innate principles are to some degree common to both auditory-vocal and visual-spatial modalities (Stokoe, 2005 [1960]; Klima & Bellugi, 1979; Padden, 1988 among others). Despite many common linguistic structures across the modalities, some important differences between signed and spoken languages were expected given different production channels. The expectations were confirmed by the cross-linguistic research on sign languages, which reveals some modality-specific differences (Meier, 2002b; Pfau & Steinbach, 2006). One of the clearly evident disparities between the two types of language is the use of the three-dimensional space in visual language, whereas spoken languages, by nature, are incapable of mapping between sounds and spatial relations.

This study was carried out as a part of a larger project "Endangered Sign Languages in Village Communities" (short "Village Sign")[5] which focuses on sign language in rural communities with the aim of documentation and description of these village sign languages.

The next section presents the research aims and objectives guiding this study.

1.1. Research aims and objectives

The aim of this book is to document Yolngu Sign Language and to compare to what extent it differs in particular in the grammatical use of space from existing sign language descriptions. Being produced in the visual-spatial

modality, all linguistic expression in sign languages is determined by the use of sign space. For a cross-linguistic comparison, a number of grammatical aspects were selected on the phonological, morphological and syntactic levels.

This research consists of four distinct, yet interdependent objectives: 1) to analyze the Yolngu Sign Language data and to provide a preliminary description of selected structural features of Yolngu Sign Language on the levels of phonology, morphology and syntax, 2) to explore how Yolngu Sign Language makes use of signing space, 3) to examine Yolngu Sign Language to formally catalogued sign languages and place it in a cross-linguistic context, in order 4) to make an expedient comparison among different sign languages in their use of space.

This study intends to address two central research questions:

(1) Does Yolngu Sign Language make use of the grammatical spatial structures common to the majority of sign languages studied so far, such as the use of abstract space to introduce referents into discourse, verb directionality to mark arguments of the verbs and classifier constructions to encode spatial information about referent's location and motion?
(2) Do sociolinguistic settings of the signing community have an impact on the linguistic structure of Yolngu Sign Language?

The idea that all languages in visual-spatial modality structure the signing space in a similar way has already been challenged by the data from sign languages in small-scale rural communities (Washabaugh, 1986; Nyst, 2007, 2012; De Vos, 2010a). In its sociolinguistic make-up, Yolngu Sign Language appears to be more similar to other rural signing varieties than to the large urban Deaf community sign languages. Given this observation, I predict that Yolngu Sign Language will exhibit some deviations in its use of space from what has been described for large urban sign languages, in the same way that deviations were found in other non-Western sign languages in small-scale rural communities.

Given the recent findings on the so-called *village* or *shared sign languages*[6] (Nyst, 2007; Marsaja, 2008; De Vos & Zeshan, 2012; De Vos, 2012; Schuit, 2013), a question arises quite naturally, whether some sociolinguistic parameters of signing communities prevent the development of some modality specific structures in a given language, such as verb directionality (also known as 'verb agreement') or classifier constructions. This idea was first articulated by Nyst (2007). She first notices that the similar use of spatial devices for structuring signing space for grammatical purposes across

geographically and historically unrelated large urban sign languages leads to an assumption that spatial devices (e.g. classifier predicates and directional verbs) are modality specific devices available to all sign languages due to the iconic potential of the visual-spatial modality. However, because some sign languages in small rural communities lack such spatial devices (e.g. verb directionality in the case of Kata Kolok or entity classifier handshapes in case of Adamorobe Sign Language), Nyst (2012) further argues, that not all mature sign languages are obliged to develop the spatial grammatical structures found in sign languages of large Deaf communities. Moreover, she hypothesizes, that the absence of the assumed modality specific features in these languages supports the idea that the development of these structures might be conditioned by the sociolinguistic and/or cultural characteristics of the community (such as the presence of a large number of hearing signers) (see also Washabaugh, 1986).

A number of studies on sign languages in small rural communities, which reveal the absence of particular spatial structures and thus show radically different use of space from what has been found in sign languages of large Deaf communities, support Nyst's (2012) hypothesis (Washabaugh, 1986; Nyst, 2007; Marsaja, 2008; De Vos 2010a, 2012; Padden, Meir, Aronoff, & Sandler, 2010). Although there are many differences in the sociolinguistic and sociocultural setup of the rural signing communities (De Vos & Zeshan, 2012), one of the features all small rural sign languages share is the large proportion of hearing signers, which, according to Nyst (2007, 2012), significantly affects the linguistic organization of these languages. Since a great majority of Yolngu Sign Language signers are hearing, it will be interesting to consider whether the YSL data fits Nyst's suggestion.

1.2. Outline of the book

The book consists of 13 chapters organized in 5 parts. **Part I** introduces the reader to the topic of the research and provides the theoretical background information necessary for this study. **Chapter 2** familiarizes the reader with various sign language types, differentiated primarily based on their sociolinguistic and sociocultural settings. This chapter places YSL in a wider perspective and proposes to extend the recently coined term *shared sign languages* in order to include those (alternate) sign languages also functioning as the primary means of communication for deaf individuals.

Part II is devoted to two aspects: 1) sociolinguistics of the language under consideration and 2) research methodology. **Chapter 3** describes the

previous research conducted on Yolngu Sign Language. The chapter continues with an overview of the geographic locations and the historical, social and cultural contexts in which Yolngu Sign Language is used. Furthermore, the reader is introduced to the linguistic context in which this sign language exists. The research on the spoken languages used in Yolngu communities is summarized here. The chapter ends with the discussion about how the sign language is used today among Yolngu. In this chapter, the exceptional socio-linguistic characteristics of this language mainly used by hearing individuals are presented. **Chapter 4** introduces the reader to the methods that were chosen for collecting the data and creating the YSL corpus. It also includes information about the fieldwork trips, the stimuli used, the participants and the subsequent data annotation for the YSL research.

Linguistic analysis of the collected YSL data starts in **Part III** of the book. It should be kept in mind that the generalisations and patters to be described here are based on a small set of the available YSL data. Therefore, the findings to be presented here should be considered preliminary and will have to be (dis)confirmed by the future studies. I will refrain from repeating this in the context of each aspect of my study and hope that these preliminary findings on YSL may already deepen our understanding of linguistic diversity of sign languages.

In this part of the book, only a selection of aspects of YSL grammar at the phonological and syntactic levels are discussed highlighting the most remarkable features of YSL grammar from cross-linguistic perspective. Morphological processes present the core of the study and will be treated separately in the next part. **Chapter 5** begins with some selected phonological structures of YSL, most notable of which are i) a relatively small set of phonetic handshapes and ii) a preference for one-handed signs in the YSL data corpus. **Chapter 6** examines two syntactic aspects of YSL, namely the strategies that are used to mark i) negative clauses and ii) interrogatives.

Part IV is devoted to the analysis of YSL morphology requiring interaction with signing space, in particular with the pronominal reference, verb directionality and classifier constructions expressing motion and location of an entity. **Chapter 7** describes a large signing space used in YSL and a proliferation of locations. **Chapters 8 – 10** discuss most striking features of YSL grammar, such as the absence of loci in the neutral signing space for person reference, the absence of distinct possessive pronominal forms, the limited use of spatial modification on verbs and the lack of entity classifiers for expression of path motion. Each of these chapters begins by giving a general overview of spatial morphological processes requiring the use of

signing space in sign languages by taking into account the latest theoretical analyses.

The results and impact of the research presented in this study are discussed in the final **Part V. Chapter 9** summarizes a number of structural similarities found in the YSL data and other sign languages. Furthermore, it considers whether the social characteristics may influence the linguistic structure of sign languages by examining four previously proposed hypotheses in the light of the YSL data. The concluding **chapter 10** highlights the contribution of this study and emphasizes the importance and necessity of further descriptive research on sign languages in small-scale rural communities around the world.

Chapter 2
Sign language types

This chapter defines four different sign language types, based on the information available in the respective sources. Before introducing the types of sign languages, I first report on the diachronic developments in the field of typological sign language research that gave rise to the distinction of the various sign language types.

Sign language research started about five decades ago in the United States of America mainly due to the pioneering work of Stokoe (2005 [1960]), Klima and Bellugi (1979), and Poizner, Klima and Bellugi (1987) on American Sign Language (ASL). Gradually linguists in other countries, mainly in Europe, became interested in sign language research and started analyzing European sign languages e.g. British Sign Language (BSL), Swedish Sign Language (SSL), Sign Language of the Netherlands (NGT) and German Sign Language (DGS). Most of the in-depth linguistic descriptions have been based on Western sign languages. Therefore, it has long been assumed that some fundamental levels of linguistic structure, such as spatial morphology and syntax, operate identically in all sign languages. Recent studies, however, have discovered some important variations in spatial organization in some previously unknown sign languages (Washabaugh, 1986; Nyst, 2007; Marsaja, 2008; Padden, Meir, Aronoff, & Sandler, 2010). In the context of growing interest in non-Western sign languages towards the end of the 1990s and more recently, there have been efforts towards developing a typology of sign languages (Zeshan, 2004ab, 2008, 2011b; Schuit, Baker, & Pfau, 2011). Although it has been repeatedly emphasized in the literature that the sign language research still has too little data on sign languages other than those of national deaf communities, based in Western or Asian cultures (Zeshan, 2008). In the 'mosaic of sign language data' Zeshan (2008, p. 675) shows the development of the state of knowledge about different sign languages available to the research (see Figure 1). This mosaic displays that our knowledge about languages in visual-gestural modality is still largely based on the data from Western European and North American sign languages. In the rightmost part of Figure 1, Zeshan inserts a question mark and hence leaves it open as to which sign languages may be discovered in the future.

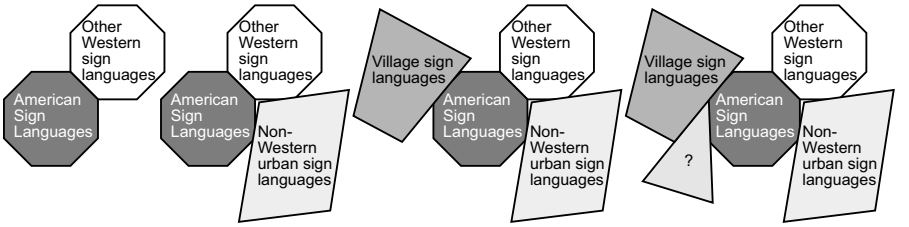


Figure 1. The mosaic of sign language data

Mainly due to the lack of data, no sign language typology yet exists based on the linguistic parameters and/or genealogical relationships. Hence, this chapter offers a sign language typology based on the sociolinguistic and sociocultural settings and presents sign language types not depicted in the mosaic shown in Figure 1. However, there are at least two types of signing which are not included in the typology to be presented in this chapter.

These are firstly the so-called "homesigns", i.e. the signing of deaf individuals growing up in entirely non-signing environments without the exposure to a usable sign language model. In the absence of such a model, deaf children in many places around the world are reported to create gesture systems for communicative purposes, which were found to be structured in language-like ways (Goldin-Meadow, 2003, 2012).

The other type of signing not included in the typology is a sign system developed for educational purposes that rather represents the spoken language on the hands. Such *hybrids* (Hoiting & Slobin, 2002) have been created in many countries: *Manually-Coded English* (MCE) in the United States, *Lautsprachbegleitende Gebärden* (LBG, speech supported signs) in Germany, or *Nederlands ondersteund met Gebaren* (NmG, sign-suppported Dutch) in the Netherlands. Signed languages are recognized by the scientific community as fully-fledged languages on a par with the spoken ones on every level of linguistic organization (Klima & Bellugi, 1979). There is, however, a broad consensus in the literature to regard the hybrid-sign systems not as natural languages, but "contrived and artificial systems" (Schick & Moeller, 1992; see also Hoiting & Slobin, 2002; Zeshan, 2004b). Reasons for this can be summarized as follows: such systems i) are "manual representations" of the spoken language of the majority non-deaf community, ii) "are not used by any community for communicative purposes outside an education environment", and, what seems to be more important, iii) they "did not evolve in a natural manner via use, instead they were created by rule" to foster the acquisition of the spoken language (Schick & Moeller, 1992). Based on these

arguments, such languages will not be considered in the remainder of this chapter. Instead, the attention is confined to other sign language types.

The chapter sets out to define four sign language types. In 2.1. large Deaf community sign languages are presented. In 2.2 emerging sign languages are introduced. In 2.3 village sign languages are described, which are in many respects different from the first two types. The last section of this chapter, 2.4, deals with the type known as alternate sign languages. Within the alternate sign languages section, particular attention will be paid to the use of signing in Aboriginal Australia. This information is essential for the analysis of Yolngu Sign Language in the subsequent chapters. In 2.4.5 an overview of the earlier accounts on Australian Aboriginal sign languages will be given, beginning with the earliest historical ethnographic reports about Aboriginal signing and leading to the most recent linguistic studies of the sign languages used in Aboriginal Australia. The discussion section of this chapter (2.5) suggests extending the recently coined term *shared sign languages* (Kisch, 2008; Nyst, 2012) to include some alternate sign languages such as YSL, which also function as the primary means of communication for deaf individuals.

2.1. Deaf community sign languages

I use the term *Deaf community sign languages* following Padden (2011) and others to refer to sign languages such as American, Australian, or Russian sign languages. In the literature a variety of other terms are used to refer to the same type of sign languages, such as *national* sign language (Woodward, 2000, 2003; Nonaka, 2004), *urban* sign languages (Jepson, 1991), *established* sign languages (Meir, Sandler, Padden, & Aronoff, 2010), *standard* sign language (Slobin, in press) or *macro-community sign languages* (Nyst, 2012). Highlighting one of the most profound features of this sign language type, a sign community, a.k.a. a Deaf community, the term *Deaf community sign languages* (henceforth: DCSLs) is considered here most appropriate.

DCSLs tend to occur in large, urban areas. Deaf community is believed to be formed by deaf people of different backgrounds who are brought together from different areas, regions or even countries in locations such as a school or a deaf association (Meir, Sandler, Padden, & Aronoff, 2010). A crucial point relevant for later disscusion is that the most deaf people are not related to one another and frequently communicate in sign language in decontextualized settings. Only a small proportion of hearing people learn to use the Deaf

community sign language. Those that use it are usually CODAs (Children Of Deaf Adults), interpreters, teachers or researchers. A very important characteristic of a Deaf community sign language is the presence of the formal separate institutions of or for deaf people, including special schools, deaf associations and other deaf organizations (such as Deaf theater and dance groups, Deaf clubs etc.). DCSLs are thus used for educating and interpreting purposes and their users are subject to prescriptive pressure through sign language dictionaries, interpreter training, television programs and other formal usages.

The structure of DCSLs has been investigted to various extents. Consider, for instance, three sign languages, American Sign Language (ASL), Australian Sign Language (Auslan) and Russian Sign Language (RSL) - to name just a few examples. ASL is widely used in the United States, parts of Canada and Mexico. Additionally, it is widespread in some African countries such as Ghana or Nigeria (Nyst, 2010). ASL is claimed to have "no competing sign languages of similar size" (Padden, 2011, p. 25). The latest estimates of primary users account for 250,000[7] signers (ibid., 2011). Auslan is a sign language of the Australian Deaf community, which has developed from the varieties of British Sign Language introduced into Australia by deaf immigrants. While ASL and Auslan have been the subject of extensive linguistic research (Lucas, 1992; Sandler & Lillo-Martin, 2006, Johnston, 1989; Johnston & Schembri, 2007), RSL has received a very scant attention from linguists, apart from the publication by Grenoble (1992). Linguistic, anthropological and sociolinguistic studies exploring phonological, morphosyntactic and lexical variations found in ASL started in the 1980s. Varieties of ASL are thus well investigated (see McCaskill, Lucas, Bayley, & Hill (2011) for a variety used by African Americans). As for RSL, some linguistic research has only recently been conducted by a number of students of Moscow State University (Prozorova, 2006; Viktorova 2007; Prozorova & Kibrik, 2006; Kibrik & Prozorova, 2007; Kimmelman, 2009ab). The first comparative study of sign language dialects used in different parts of Russia has only been undertaken most recently (Davidenko, Komarova, & Zaitseva, 2012).

2.2. Emerging sign languages

Emerging (Deaf community) sign languages differ from the Deaf community sign languages by definition through one characteristic: their young age (Meir, Sandler, Padden, & Aronoff, 2010). With other words, emerging sign

languages are Deaf community sign languages (see section 2.1), which do not have a very long history[8]. Comparable to spoken pidgins and creoles, the emerging sign languages have arisen out of contact between two or more other existing sign languages or homesign systems (Padden, 2011; Adone, 2012). These languages are particularly important for the linguistic community as their very early stages can be traced and documented, thus allowing the linguists to study the course of their development, which is not possible in the same way for the DCSLs such as ASL (Meir, Sandler, Padden, & Aronoff, 2010).

Three sign languages have been identified as emerging sign languages in the literature so far. These are Nicaraguan Sign Language (NSL), the Israeli Sign Language (ISL) and the Mauritian Sign Language (MSL). In the following, I briefly report on these three sign languages highlighting their recent genesis.

Before the first deaf school opened in Nicaragua in the late 1970s, most deaf people communicated with their hearing family members using so-called homesign systems (Goldin-Meadow, 2003) and had no contact with other deaf individuals (Senghas, 1995; Senghas & Coppola, 2011). Through the extensive interaction among peers in the new school, a new form of sign language, NSL, appeared from the homesigns system within two decades.

Israeli Sign Language evolved in a similar pidgin-like situation, although somewhat earlier than NSL. The deaf community in Israel developed in the 1930s as the immigrants from European countries such as Germany, Austria, France, Hungary, Poland and Russia and later from North Africa and Middle East came to Israel (Meir, Sandler, Padden, & Aronoff, 2010). A new sign language and a Deaf community developed in Israel as the immigrants, who brought their sign languages with them, started to meet and communicate on a regular basis[9]. The first deaf school was established in 1932 in Jerusalem (Meir & Sandler, 2008, p. 185). Given its recent origin, the signing of the first generations, though changed with time, is still available to linguists analyzing this language today. Hence, the studies report on the gradual development of some linguistic structures such as pointing signs in NSL or spatially modified verb forms in ISL produced across many generations of signers (Padden, Meir, Aronoff, & Sandler, 2010; Senghas & Coppola, 2011). Particularly with regard to the use of space, ISL is reported to have developed over time a full-blown agreement system of the sort that is used in DCSLs (Padden, Meir, Aronoff, & Sandler, 2010) (see also section 12.2.1 for a discussion).

For NSL a more consistent use of space for grammatical purposes has been already observed in the "second cohort" signers (Senghas, 2003).

Another example of an emerging sign language has been reported by Adone (2007). After the school for the deaf was established in 1969 in one of the major cities on the island of Mauritius, Beau Bassin, a new sign language emerged, Mauritian Sign Language. From the research done so far, it seems that MSL shares many structural similarities with the other emerging sign languages such as the gradual development of a consistent word order (SOV) and a high degree of variability in spatial modifications on verbs across generations of signers (Gébert & Adone, 2006; Adone & Bauer, 2009).

2.3. Village sign languages

While emerging sign languages diverge from the DCSLs only by one feature, their age, the so-called *village sign languages* (Zeshan, 2007) show considerable differences to the DCSLs. These distinctions can be summarized by at least four partly intimately linked parameters, including: 1) socioeconomic and demographic settings, 2) social homogeneity, 3) (socio)linguistic context and 4) degree of endangerment. All four parameters are outlined in the following[10].

2.3.1. Socioeconomic and demographic settings

Village sign languages develop in small-scale geographically isolated rural communities, which are not necessarily meant to be strictly limited to a single village[11] (Zeshan, 2007). Such societies with predominantly "pre-industrial local economies" are known to have unusually "high degrees of real/biological or fictive/nonbiological kinship" (Nonaka, 2009). Moreover, the communities display "low intra-community educational and occupational"[12] separation between deaf and hearing people (Nonaka, 2009). Another essential ingredient for the so-called "deaf villages" (Zeshan, 2007) is an extraordinary high prevalence of (often hereditary) deafness (Sandler, 2005) (cf. Table 1). While the prevalence of deafness for developed countries is usually estimated between 0.1% and 0.2% (Woodward, 2003), the figures from the deaf villages show a much greater rate of incidence of deafness as shown in Table 1, ranging from 0.58% in Ban Khor village to 3.71% in the Bedouin community in Israel.

Table 1. The prevalence of deafness in selected deaf villages

Sign language	Deaf people	Village population	Percentage of deaf people	Source
Kata Kolok	47	2,186	2.15%	Marsaja (2008)
Ban Khor	16	2,741	0.58%	Nonaka (2009)
Adamorobe	35	1,345	2.6%	Nyst (2007)
Al-Sayyid Bedouin	130	3,500	3.71%	Meir, Aronoff, Sandler, & Padden, (2010)
Yucatec Maya	13	400	3.25%	Johnson (1991)
Providence Island	20	3,000	0.66%	Washabaugh, Woodward, & DeSantis (1978)

2.3.2. Social homogeneity

The small size of the community and the high degree of kinship relations among its members seem to facilitate the growth of the social homogeneity, which is witnessed in the dense social networks and the large amount of communally shared information[13] between the community members. Meir, Sandler, Padden, & Aronoff (2010) consider these feature as crucially important when categorizing village sign languages. Thus, unlike the signers in Deaf community sign languages, people in a deaf village share a common social environment, a common culture and a common village identity. In such small socially homogeneous communities, there is a great amount of sharing of communal experiential knowledge (Kisch, 2008). Meir, Sandler, Padden, & Aronoff (2010, p. 268), while discussing community members, allude to this social factor which they think "make[s] it easier for them to communicate than it is for people with diverse backgrounds" as it is the case in Deaf community sign language settings. They continue by saying that "this degree of familiarity may allow them [community members, AB] to be less explicit verbally then people who do not have as much in common, yet at

the same time to communicate effectively across a range of topics, provided the context is shared". The recent linguistic investigation of village sign languages provides some evidence for this. Deictic systems in such homogeneous communities are, for example, very well developed (see Washabaugh, Woodward, & DeSantis, 1978 for Providence Island Sign Language; De Vos, 2007; 2012 for Kata Kolok; Schuit, 2013 for Inuit Sign Language), because deixis depends on shared background information. Village sign language signers make use of indexic signs for a wider variety of entities than do signers of DCSLs (Washabaugh, Woodward, & DeSantis, 1978). Reportedly no lexical signs exist for entities such as ocean, sun, mountain, river or town names because their locations are always known among the community members and can be easily pointed to. DCSLs with less shared information and less social networking would need to build more information into the message and be more explicit.

2.3.3. (Socio-)Linguistic context

The factor of social homogeneity is closely interrelated with the absence of distinct Deaf communities in the deaf villages (Washabaugh, 1986; Groce, 1985). Deaf people are usually reported to be part of the whole village community rather than to form an alternative deaf subcommunity within the village[14] (Lanesman & Meir, 2010). In such village sign language settings cross-modal multilingualism is usually the norm. The hearing members of the community are usually fluent in two or more spoken languages and the local sign language as well. The use of sign language is never restricted to deaf members in such communities. Moreover, the hearing signers play an extremely important role in the acquisition and transmission of the village sign language as many deaf members acquire the sign language from fluent hearing signers. However, some variations in hearing people's signing proficiency have also been reported (Nyst, 2007; Marsaja, 2008). Nonaka (2007) calls such communities with cross-modal multilingualism *speech/sign* communities. Hearing people have been repeatedly argued to play a vital role in spread and maintenance of these local village sign languages (Washabaugh, 1979; Nonaka 2007; Zeshan, 2011a; Lanesman & Meir, 2012). However, a very important note can be made here that hearing people in deaf villages "almost exclusively sign only when deaf people are present"[15] (Nonaka, 2007, p. 13). This feature might be seen as one of the crucial differences to alternate sign languages, which are predominantly used among hearing members (see 2.4 below).

2.3.4. Degree of endangerment

As Nonaka (2009, p. 210) points out in her article, "village sign languages arise suddenly, spread rapidly, and disappear quickly". As example, consider two village sign languages found in North America: Martha's Vineyard Sign Language (MVSL) (Groce, 1985) and Maritime Sign Language from Nova Scotia (Carbin & Smith, 1996, cited in Padden, 2011). Both sign languages existed in the twentieth century, but are now considered extinct, sadly before they could be linguistically documented and described. As Zeshan (2011a) explains, all village sign languages are endangered for two reasons. First, it is immediately threatened through the contact with a larger Deaf community sign language. Exposure to a Deaf community sign language can lead to a loss of prestige for and subsequent death of the village sign language. A similar development occurred with Konri Sain in Jamaica, when Signed English and American Sign Language were introduced to the area by American missionaries (Cumberbatch, 2012). The second reason for the endangerment of a village sign language is the necessary presence of deaf people in the community. The village sign language is, thus, dependent on the existence of deaf people and might disappear when deaf individuals no longer live there (Zeshan, 2011a).

Village sign languages are not only endangered, they are also un(der)documented from the linguistic and anthropological point of view (Nonaka, 2009). Several village sign languages have been identified around the world but more research is needed to "broaden our understanding of the possible range of structural diversity in sign languages" (Zeshan, 2011a, p. 222). Village sign languages diverge linguistically, culturally and geographically (Nonaka, 2009). Currently, as more comparative work appears on these sign languages and the communities in which they have emerged, various terms are introduced to describe them. These sign languages are referred to as "indigenous" (Woodward, 2000; Nonaka, 2009; Adone, Bauer, Cumberbatch, & Maypilama, 2012), "rural" (Jepson, 1991; De Vos & Zeshan, 2012) or "shared sign languages" (Nyst, 2012). I adopt here the term used by Nyst (2012) to highlight the shared use of sign language by hearing and deaf signers (see 2.5 for discussion of this term). The list below sketches some of the shared sign languages to be mentioned in this study and the communities in which they evolved.

- Adamorobe Sign Language (AdaSL), village of Adamorobe in Ghana (Nyst, 2007),
- Algerian Jewish Sign Language (AJSL) emerged in isolated Jewish communities in the sub-Saharan M'zab region of Algeria. Today AJSL is used across areas of Israel (Lanesman & Meir, 2010, 2012),

- Alipur Sign Language, village of Alipur in the southern Indian state of Karnataka (Panda, 2010, 2012),
- Al-Sayyid Bedouin Sign Language (ABSL), the Negev desert of southern Israel (Meir, Padden, Aronoff, & Sandler, 2007; Kisch, 2008),
- Ban Khor Sign Language, Ban Khor village in northeastern Thailand (Nonaka, 2004, 2007),
- Bura Sign Language, Kukurpu village in northeast Nigeria (Blench, 2012),
- Dogon Sign Languages, the villages in the Dogon area in Mali (Nyst, Sylla, & Magassouba, 2012),
- Inuit Sign Language (IUR), Inuit communities from Greenland to Alaska (Schuit, 2009a; Schuit, Baker, & Pfau, 2011),
- Konchri Sain (JKS), Saint Elisabeth's, Top Hill in Jamaica (Dolman, 1986; Cumberbatch, 2006, 2012),
- Mardin Sign Language, the town of Mardin in South-eastern Turkey, and also in Istanbul and Izmir (Dikyuva, 2008, 2012),
- Kajana Sign Language, Kajana village in Surinam (van den Bogaerde, 2006),
- Kata Kolok, Bengkala and Bila villages of North Bali (Marsaja, 2008; De Vos, 2012),
- Providence Island Sign Language (PROVISL), Providence island, Columbia (Washabaugh, 1979, 1980, 1986),
- Urubú Kaapor Sign Language, Urubú village in northeast Brazil (Kakumasu, 1968; Ferreiro-Brito, 1983, 1984),
- Yucatec Mayan Sign Languages (YMSL), Mayan villages in Mexico on the Yucatan peninsula (Johnson, 1991; Fox Tree, 2009; Le Guen, 2011ab, 2012; Escobedo, personal communication).

2.4. Alternate sign languages

The group of sign languages to be presented here is by far not as homogeneous as the ones presented above. The sign languages put together under the label *alternate sign languages* (sometimes referred to as 'secondary' or 'auxiliary') differ greatly from each other in their origin, their usage, their social and sociolinguistic settings, and lastly in their linguistic characteristics (cf. Pfau, 2012). Being considered "half-way" sign languages (Nyst, Sylla, & Magassouba, 2012), alternate sign languages have been largely overlooked by the sign language scholars (see for example Figure 1 above) and have found little attention in the sign language literature

(Green, Woods, & Foley, 2011). These languages, however, require a particular attention, since they are not only severely underdocumented, but also seriously endangered (Davis, 2010; Meir, Lanesman, Adone, & Cumberbatch, 2012).

Before I consider different alternate sign languages, I briefly outline the term *alternate sign language* and how it originated. In the concluding discussion of this chapter, I discuss the recently proposed term "shared sign languages", which, as I argue, also includes Yolngu Sign Language and some other alternate sign languages as well due to their social and sociolinguistics features (see 2.5).

Sign languages are referred to as *alternate* in the literature, if they "have been developed as alternatives to speech by people who have full and normal access to it" (Kendon, 1990, p. 315). Alternate sign languages are usually believed to be "strongly influenced by spoken language" and therefore, are explicitly "distinguished from those forms of signing used by the deaf, and by hearing people in interaction with the deaf" (Kendon, 1988, p. 5). Various sign communication systems have been, therefore, considered as alternate sign languages, including sign languages used by Central Desert Australian Aboriginals, sign languages used by the Plains Indians of North America, sign systems used by sawmill operators in British Colombia, various monastic sign languages, hunting sign languages or military signs (Kendon, 1988; 1990; West, 1960 cited in Davis, 2010; Meissner & Philpott, 1975a; Bakker, 2012b; Pfau, 2012; Mohr & Fehn, 2013). In the following, I will provide some information for the selected examples of alternate sign languages, their users and their structure paying particular attention to the Aboriginal sign languages of Australia[16]. The alternate sign languages will be shown to be extremely different in the circumstances of use and their grammatical complexity (cf. Pfau, 2012).

2.4.1. Sawmill Sign Language

Sawmill Sign Language developed spontaneously between hearing sawmill workers in British Columbia (Canada) in a particularly noisy working environment (Meissner & Philpott, 1975ab). The sawmill workers were signing with each other while the mill was running and verbal communication was simply impossible due to the noise it created. Against all expectations, the scholars were surprised to find that not all communication was restricted to the transmission of technical information. In some cases, some non-technical communication was observed as illustrated by the example in (1).

[Sawmill SL]

(1) HOW LONG/BIG INDEX WOMAN/FEMALE MARRY
'How long have you and your wife been married?'
(Meissner & Philpott, 1975b, p. 347)

An interesting observation is the occurrence of the so-called "audiomimic" signs, which rely on phonological resemblance to the corresponding English words (Meissner & Philpott, 1975a). To denote 'week', for instance, the sawmill signers grasped the biceps of the other arm as for 'weak' and to denote 'year', they grasped the ear lobe. Overall, a dictionary of sawmill sign language contains only 133 different signs (Meissner & Philpott, 1975b). There are a number of compounds such as WOMAN+BROTHER 'sister' or MONEY+HOUSE 'bank' (Meissner & Philpott, 1975a). The sign order of the Sawmill sign language strictly follows the word order of English.

2.4.2. Monastic sign languages

Monastic sign languages developed as alternatives to speech in monasteries of different Benedictine orders (Cluniacs, Cistercians or Trappists) to maintain the prescription of silence according to the rule of St. Benedict (Umiker-Sebeok & Sebeok, 1987). Thus, the presence of these sign languages has nothing to do with the hearing impairments or the ability to understand speech, but rather with the law of silence imposed on the monks in particular monastic establishments. The use of signs in monasteries has a long history. Rijnberk (1954, cited in Kendon, 1990) suggests that signs were used before the tenth century, long before the first official manuscript with sign drawings appeared in 1050. The lexicon of the Cistercian Sign Language comprises 518 basic signs (Barakat, 1975). Most dictionary items are common nouns for objects, with which monks are likely to come into contact during everyday life. Many compounds are reported such as WHITE+RAIN 'snow', HIDE+HORSE 'storeroom' or GOD+UP+DAY 'Easter' (Kendon, 1990, p. 321). Unlike Sawmill Sign Language, monastic sign languages seem to make use of the handshapes from manual alphabet, a set of manual symbols corresponding to the letters of the alphabet. However, the manual alphabet is used differently from DCSLs. Consider, the two examples below.

[Cistercian SL]

(2) DRINK+T+COURTYARD
'England'

(3) SECULAR+COURTYARD+SHOOT+PRESIDENT+K
'Dallas, TX'

(Barakat, 1975, p. 105)

In (2) T stands for 'tea' and in (3) K stands for 'Kennedy'. With regard to sign order, similar to the Sawmill Sign Language, the signing of the monks appears to rely upon the word order that matches their native spoken languages, such as English, Dutch, French, German or Latin. The strong influence of the corresponding spoken languages is also seen in the presence of the "audiomimic signs" such as SHINE+KNEE 'shiney', which are comparable to the ones found in sawmill signing.

2.4.3. Plains Indian Sign Language

The sign language developed by the Plains Indians of North America as a means of communication between groups that did not share the same spoken language has also been considered a type of alternate sign language. The use of sign was observed by different American Indian tribes through the North American continent stretching from Texas in the south to Canada in the north. Plains Indian Sign Language or simply "Hand Talk" (henceforth: PISL) was predominantly used in previous times as a *signed lingua franca* and is still used today in "storytelling, rituals, legends, prayers and conversational narratives" (Davis, 2010, p. 15). Most important for the further discussion is that PISL was and is still used today by American Indians who are deaf. Moreover, McKay-Cody (1997, cited in Davis, 2010, p. xviii, 13) suggests, "the alternate sign languages used by hearing Indians became linguistically enriched when learned as a primary language by members of Indian communities who are deaf". She assumes the deaf American Indians to be "the most proficient signers", who "probably served as linguistic models" for the hearing signers of PISL (ibid.). The structure of PISL seems to be independent of the ambient spoken languages. Unlike North Central Desert Area Sign Languages of Australia (henceforth: NCDSLs), PISL verbs are reported to be spatially modified to convey information about subject and object (Davis, 2010). This finding led Kendon to conclude that PISL is very similar to DCSLs and "clearly different from the Australian Aboriginal NCDSLs" (1988, p. 423). However, some dissimilarities to Deaf community sign languages have also been observed. For example, PISL does not seem to make an extensive use of nonmanual marking for various grammatical purposes. Rather a high degree of sign and speech co-occurrences has been

found (Bakker, 2012ab). As far as the origin of PISL is concerned, the fact that it was initially developed by hearing people remains a matter of speculation. As Davis explains:

> PISL has been transmitted from one generation to the next and acquired as the primary and secondary sign language by deaf and hearing members of these communities. PISL most likely developed from the emergent signed language of trial members who were *deaf* or with *deaf* family members; and, over time, members of the larger hearing community acquired it as an alternative to spoken language. As PISL was transmitted from one generation to the next, and acquired by both deaf and hearing Indian participants, it was linguistically expanded with greater lexical and grammatical complexity.
>
> (Davis, 2010, p. 182, emphasis added)

2.4.4. Keresan Pueblo Indian Sign Language

Another alternate sign language used by hearing and deaf American Indians is the Keresan Pueblo Indian Sign Language (henceforth: KPISL) (Kelley & McGregor, 2003). The small township in New Mexico, where this sign language is used, displays a high degree of hearing loss (2,31%[17]) comparable to the numbers presented for the village sign languages in Table 1. Not much is known about the linguistic structure of this sign language. Kelley & McGregor (2003, p. 141) report that KPISL functions "in two significant ways: (a) as an alternative to spoken languages for hearing tribal members and (b) as a primary or first language for deaf tribal members". Such a high number of deaf members in this Keresan pueblo has been attributed to the middle ear infection (otitis media), which might lead to the hearing impairment caused by repeated severe episodes of infections (see also 3.5 for the discussion of middle ear infections among Indigenous Australians).

2.4.5. Australian Aboriginal sign languages

The use of sign languages has long been known to be widespread among Australian Aborigines. These languages are highly endangered, severely understudied and have been completely overlooked by contemporary sign language research. A notable exception is the seminal research by Kendon (1984, 1985, 1987, 1988), who sheds more light on this issue than anybody else hitherto by giving an exhaustive account of the complex sign languages in the North Central Desert area.

The documentation of Australian Indigenous traditional cultural knowledge has arisen historically through missionaries and anthropologists very shortly after the Europeans arrived in Australia. However, the usage of a sign language among the Aboriginal groups has encountered little interest or may have simply stayed undiscovered for a long period of time. The first observations of Australian Aboriginal sign language provide no descriptions of the language, but simply recognize its existence. One of the earliest reports of an Australian Aboriginal sign language is found in the literature in 1874 by Gason, who published his observations of the Dieri Aboriginal group in the south of Australia (Kendon, 1988, p. 17). A more detailed account of Aboriginal sign language with the description of roughly 200 signs is given by Roth in his *Ethnological Studies in North-West-Central Queensland* in 1897 (Kendon, 1988, p. 21). The extent to which sign language is used by different Aboriginal groups across Australia has first been described by Howitt (1890), who concludes that "the use of sign language is more common in Central and North-eastern Australia than in the South-eastern quarter of the Continent" (p. 724). The distribution of Aboriginal sign languages known prior to the research conducted by Kendon is shown in Figure 2.

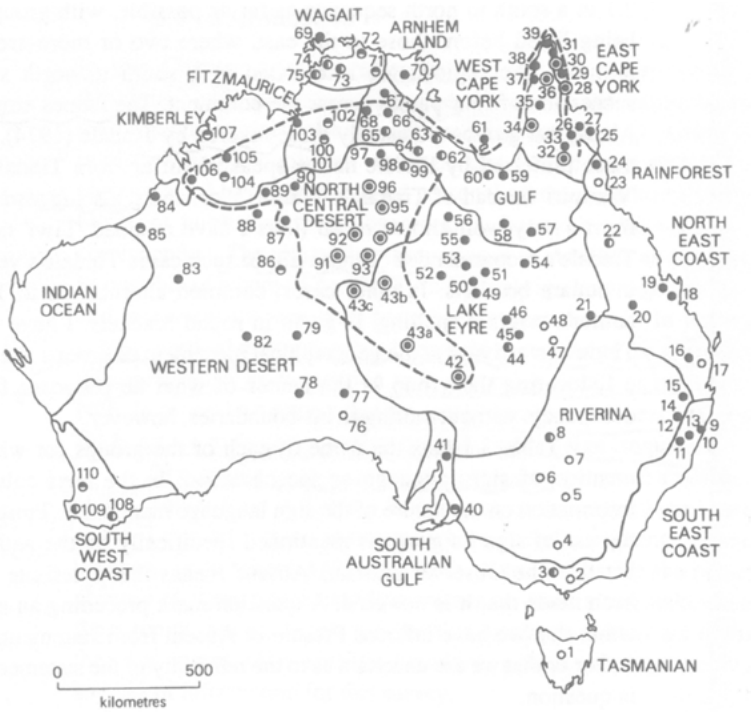


Figure 2. Distribution of sign languages in Australia[18]

The circles in the map (see Figure 2) are to be interpreted in the following way. An empty circle means that signing is absent in this area; the half filled circle – signing may be present; upper half filled – signing present but limited; full circle – signing is present (as in the case of Arnhem Land, where data collection for the present study has been made); full circle with outer ring – sign language is highly developed. The map, thus, suggests that the most complex signing systems are to be found in the North Central Desert area and on Cape York. Previous research and my analysis of Yolngu Sign Language in this study show that YSL is very different from the sign languages used in the North Central Desert (see also Cooke & Adone, 1994). Moreover, my analysis of the collected YSL data tentatively suggests that the signing found in NE Arnhem region is extensive and highly developed, similarly to the signing found in North Central Desert area (Kendon, personal communication, 2012).

Some important contributions to the description of Aboriginal sign language in Australia are as follows. Roth (1907) presents his observations on the sign language in the Cape York Peninsula area; Meggitt (1954) publishes the first paper on Warlpiri Sign Language (Kendon, 1988). The Warlpiri Sign Language pictorial dictionary presents another valuable contribution to the discussion of the Aboriginal sign languages (Wright, 1979). It contains, however, neither descriptions nor linguistic information about the signs depicted.

Kendon's work (1984, 1985, 1987; 1988, 1990) gives the most extensive and comprehensive analysis on Australian Aboriginal sign languages used in North Central Desert communities. Figure 3 shows the places, in which sign language data was gathered by Kendon (area enclosed by a heavy broken line).

A further account of the Indigenous sign language in Australia is done in a paper by O'Reilly (2006)[20], which primarily discusses some issues surrounding interpreting for Indigenous deaf people from Aboriginal communities in far north Queensland. The author acknowledges the existence of a variety of Indigenous sign languages among the communities of far north Queensland and the Torres Strait Islands and notes its use, inter alia, by hearing and deaf fishermen for communication between boats. O'Reilly's report is extremely important, since it reveals striking influence of Auslan or signed English on the Indigenous sign language in far north Queensland. It can, for instance, be seen in the example of a two-part sign meaning 'aboriginal'(see Figure 104, p. 285). It consists of the sign FIRST and an initialized handshape indicating the letter A. Initialized handshapes, i.e. handshapes taken from the hand alphabet of the surrounding spoken language are very atypical of

Figure 3. The North Central Desert communities[19]

village and Indigenous sign languages, mainly due to the absence of writing and education in such rural signing communities. Thus, the presence of the contact-induced structures such as initialization can be viewed as support for the increasing influence of Auslan or signed English through school or Deaf community contact in a nearby Australian cities and at the same time, endangerment of the Indigenous sign languages.

The most recent studies (Green, Woods, & Foley, 2011) focus on the use of sign languages *iltyem-iltyem* (lit. 'signalling with hands, using hand-signs'[21]) used by Aboriginal people in Arandic speaking communities of Central Australia. Using the newest technologies, Green and her colleagues study the "culturally valued and highly endangered" sign language previously documented by Kendon in Central Australia (1988) (Green, Woods, & Foley, 2011, p. 66). The researchers aim not only at documenting the sign language but also, more importantly, at providing new resource such as a web-based video dictionary for use in school for the maintenance of Indigenous sign languages.

In his study on Australian Aboriginal sign languages of Central Australia, Kendon (1988) proposes the term *alternate* sign language for the languages he scrutinizes to contrast them to primary sign languages such as ASL, due to a "radical difference in their origins and use" (1988, p. 7). Kendon describes these sign languages in the Central Desert as "systems which *represent* their associated spoken languages" (Kendon, 1988, p. 402, emphasis in original), whereas the contrary has been claimed for the other sign languages (Stokoe, 2005 [1960]). North Central Desert Area sign languages (NCDSLs) came into being due to the mourning rituals including the maintenance of prolonged speech taboos by the deceased's spouse – usually widows. Thus, the language is developed by hearing Aborigines as an alternative to speech in circumstances, where silence must be observed, a situation reminiscent of the origin of monastic sign languages. The use of sign language among Australian Aborigines appears to have extremely high cultural value. Additionally to the circumstances, when speech is forbidden, signs are used by Aborigines when speech in not convenient or as an accompaniment to it (ibid.).

Studying the NCDSLs, Kendon discovers a very striking influence of the surrounding spoken language on the linguistic structure and organization of NCDSLs signs (Kendon, 1988, p. 251). He finds that "signs were employed as if they were the morphemes of the spoken languages, including many bound morphemes, such as semantic case-endings" (Kendon, 1990, p. 121). Despite the strong impact of the surrounding spoken languages, Kendon concludes that these alternate sign languages are highly complex and fulfill virtually all functions of a spoken language. Prolonged speech taboos were certainly, according to Kendon, a contributing factor to the elaboration of these sign languages. However, not all Australian Aboriginal sign languages exist due to speech taboos. YSL, for example, is found to be quite different from NCDSLs in this respect (see 3.5 for a discussion of this issue). Even though there are many similarities between the surrounding spoken languages

and YSL, the data to be presented in this study reveal a number of important differences, so that YSL signs cannot be regarded gestural representations of any surrounding spoken language (see Kendon, 1988 for a different view with regard to NCDSLs). Yolngu communities are, however, multilingual (see 3.4), in the way the North Central Desert communities are not. The fact that YSL is used by speakers of different spoken languages, thus, distinguishes it from NCDSLs (see also Kendon, 2013).

Kendon did not encounter deaf Aborigines in Central Australia using any Aboriginal sign language[22]. Thus, proposing the term *alternate*, he did not take into account the process of nativization and the first language acquisition. To date, no study exists describing the acquisition of any Australian alternate sign language by deaf Aborigines[23] and the possible effects it might have on the language structure. Davis (2010) argues that PISL became grammatically and lexically more complex after being acquired as the primary sign languages by deaf members. The effects of nativization previously described for sign and spoken languages are known to be enormous with regard to the language structure, even in the absence of a conventional language-model (see Senghas, 1995 for the role of nativization in Nicaraguan Sign Language). More recent studies and the present research of YSL have found that the alternate sign languages used by Indigenous Australians can also serve as the primary sign language for some deaf or/and hearing impaired Aboriginal individuals (Kwek, 1991; Cooke & Adone, 1994; O'Reilly, 2006; Green, personal communication).

2.5. Shared sign languages

The examples of alternate sign languages above cited in section 2.4 differ from each other on the basis of three features: 1) their origin, 2) their linguistic structure and 3) their function.

We see from that discussion that not all alternate sign languages were developed by hearing people. Whereas Sawmill Sign Language and monastic sign languages are known to have been developed by hearing signers (Meissner & Philpott, 1975a; Barakat, 1975), PISL and KPISL possibly evolved as the primary sign languages among deaf members and only later became an alternate means of communication for the hearing community members (Davis, 2010; Kelley & McGregor, 2003).

In his recent study, Pfau (2012) compares four alternate sign languages (see Table 2) and shows considerable variation with regard to the linguistic structure of these languages. His evaluation of selected linguistic features of these languages, including compounding, (spatial) agreement, realization

of interrogatives and the influence from the surrounding spoken language has made particularly evident, that Sawmill Sign Language and Cistercian Sign Language, languages without deaf L1 signers "show the simplest grammatical structure as well as a strong influence from the surrounding spoken language" (p. 543).

Table 2. Comparison of selected (socio-)linguistic features of alternate sign languages[24]

	Compounding	(Spatial) agreement	Interrogatives	**Influence from spoken language**
Sawmill SL	-mostly SP-loans -no PR/A	NO	-no sim. NMM -only one G-QS, sentence initial	STRONG -mouthing -audiomimic signs -compounds -word order
Cistercian SL	-mostly SP-loans -no PR/A	NO	-no sim. NMM -QM in air -only one G-QS, sentence initial	STRONG -audiomimic signs -MA in compounds -MA for copula -word order
North Central Desert area SLs	-mostly SP-loans -no PR/A	YES	-no sim. NMM	STRONG -mouthings -compounds -reduplication -suffix markers -word order
Plain Indian SL	-few loans from SP -no PR/A	YES	-sim. NMM -only one G-QS, sentence initial and/or -final	WEAK -few compounds -word order (?)

It is also significant to note that the alternate sign languages vary with regard to their function. While some alternate sign languages, such as Sawmill Sign Language and monastic sign languages, are used exclusively by hearing individuals (Meissner & Philpott, 1975a; Barakat, 1975). Other alternate

sign languages, such as PISL, KPISL and YSL, may be shared by hearing and deaf signers (Davis, 2010; Kelley & McGregor, 2003; Cooke & Adone, 1994) (for YSL see 3.5 for a detailed discussion). It is the shared use of a sign language between the hearing and deaf signers that allows me to label some alternate sign languages as *shared sign languages* (Nyst, 2012).

The term "shared signing communities" was recently coined by Kisch (2008) describing the Bedouin community of Al-Sayyid. While Kisch proposes this term mainly to refer to village signing communities listed in 2.3, I find this notion particularly useful in a broader context. The term *shared signing communities* elegantly captures what villages with high rates of (often hereditary) deafness and communities with fewer numbers of non-hereditary deafness (see also Nyst, Sylla, & Magassouba, 2012) in which (an alternate) sign language exists have in common: "the pervasive use of signing by both hearing and deaf" (Kisch, 2008, p. 284). Hence, I maintain the term alternate sign languages for the sign languages listed in 2.4, which function as an alternate means of communication among hearing signers even in the absence of deaf people. Additionally, I adopt the term *shared signing communities* to address the communities with varied incidence of hereditary and non-hereditary deafness, in which a local sign language is widespread among hearing and deaf. Whereas Nyst (2012) reserves the term "shared sign languages" for sign languages described in 2.3 as village sign languages, I use this term to refer to all sign languages (e.g. village and alternate) which are shared by hearing and deaf signers[25].

2.6. Summary

Chapter 2 distinguished four major sign language types mainly on the basis of their sociolinguistic characteristics: 1) Deaf community sign languages (DCSLs), such as ASL and Auslan, are found to be in use by larger groups of signers in urban settings. 2) Emerging sign language, NSL, ISL and MSL are by definition young sign languages, which are reported to have evolved in the context of deaf education (Senghas, 1995; Meir & Sandler, 2008). 3) Village sign languages were dealt with in more detail to show that they differ considerably from DCSLs by at least four parameters, including socio-economic and demographic settings, social homogeneity, (socio)linguistic context and degree of endangerment. Finally, 4) a rather non-homogeneous group of alternate of sign languages was presented. Some alternate sign languages were used exclusively by hearing people (e.g. Sawmill Sign Language and monastic sign languages). Other alternate sign languages,

such as PISL, KPISL and Yolngu Sign Language are shared by both deaf and hearing members of the community. Hence, I suggest that the recently coined term *shared sign languages* (Kisch, 2008; Nyst, 2012) can also be extended to include only those alternate sign languages, which also function as the primary means of communication for deaf individuals (cf. Figure 4).

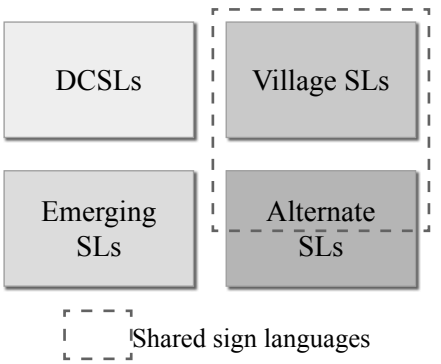


Figure 4. Sign language types

The term *shared sign languages* is found useful for the purposes of this study. By using this term, I attempt to illustrate one common sociolinguistic characteristic between village sign languages and a number of alternate sign langauges: a situation when a sign language is shared among both hearing and deaf community members. Moreover, the languages characterized here as shared sign languages will be shown to share many similar linguistic structures (see section 12 for discussion).

The next chapter provides information on sociolinguistic background of YSL and methodology of this study. The question of how Yolngu Sign Language structures its signing space is presented in chapters 7–11 and how it compares to other sign language types in the spatial organization will be discussed in chapter 12.

Part II

Sociolinguistic Background & Methodology

Chapter 3
Cultural and sociolinguistic context

The sign language observed in places of data collection is locally referred to as *goŋu djäma* (lit. *goŋ* – 'hand'; *djäma* – 'work') or by the English word *actions*. At the present moment, it is unclear whether the sign language encountered in three data collection locations (see section 4.1 for more information) is used throughout the Yolngu territory. Earlier publications indicate the use of the same sign language by different peoples in North East Arnhem Land (Warner, 1978, p. 389; Williams, 1981, pp. 44–45; Elwell, 1982, p. 89; Kendon, 1988, pp. 52–53[26]; Ngandama & Williamson, 1989). Furthermore, my research takes as its point of departure the study by Cooke and Adone (1994), who label a sign language they analyze, based on the data collected in Galiwin'ku, as *Yolngu Sign Language* (YSL). On these grounds, I am inclined to suppose the sign language data collected for this study should be referred to as *Yolngu Sign Language*.[27]

The chapter is organized as follows. Section 3.1 examines the previous work on the sign language in North East Arnhem Land. Further, some background on the Yolngu communities is provided. Some significant historic and geographical facts are discussed in 3.2 and some outstanding cultural and sociolinguistic features in 3.3. Section 3.4 explores which spoken languages surround YSL and how they linguistically relate to each other. In 3.5 I discuss how YSL is being used in the Yolngu communities today.

3.1. Previous studies

The use of sign language in North East Arnhem Land (henceforth: NE Arnhem Land) has only received scant attention. Almost all that is known on this topic, until today, derived from the following five publications.

The earliest mention of sign language in NE Arnhem Land was published in 1937. Warner refers to it as *Murngin Sign Language* and states the following: "All the tribes in northeastern Arnhem Land have a very elaborate sign language, which is used between peoples who do not understand each other's spoken languages, between the deaf and dumb, and by young men who are observing taboos of silence after certain initiations" (Warner, 1978, p. 389). *Murngin* is alongside with *Wulamba*, *Miwuyt* or *Malag* one of the terms, which have been used in the earlier literature to refer to the Indigenous

people in NE Arnhem Land Region of Australia. Today the term *Yolngu* as the collective term for the languages and dialects of this area (e.g. *Yolngu Matha*) and its people seem to have replaced the above mentioned terms[28]. In his short article, Warner presents descriptions for 67 signs out of which 54 seem to be identical with the data collected for this study. Some of the signs (e.g. for 'dugong' or 'jaribu'), which Warner accounts for, were not elicited. Other signs such as sign for 'honey' or 'tobacco' seem to have changed and are not found in the same appearance in the corpus of the study undertaken here.

In his book on Aboriginal kinship Williams (1981) explains that the kinship terms can be expressed in NE Arnhem Land via signs. Illustrations denoting ten various kinship relations are documented in the form of photographs (ibid. p. 45–46, 63, 78). All of the signs presented by Williams are consistent with the data collected for this study. Additionally, another YSL kin sign was collected.

Elwell (1982) reports about "an extensive system of sign language" in the Maningrida area, which is located on the coast at the western edge of the NE Arnhem Land (cf. Figure 5). Elwell offers no description of this sign language, but merely underlines its inter-lingual communication function by refering to it as "a traditional but silent *lingua franca*". Elwell assumes that sign language in this linguistically highly diversified area is used between people who do not share the same spoken language. Elwell points out that in Maningrida 11 spoken languages are used by five distantly related families, while a single sign language is common to all of them:

> "Everyone understands it and uses it at various times, for example: between relatives who are not permitted to speak aloud because of a taboo placed on their oral communication; when communication is required over a distance, especially when silence is essential, as in hunting situations, as a way of introducing oneself to a stranger and finding out about that person; to communicate with deaf people (who are thus not socially isolated, as tends to be the case among European Australians); and, finally, when no common language exists between people" (ibid. p. 89–90).

The only pictorial dictionary of Yolngu Sign Language found contains 45 photographs demonstrated mostly by Aboriginal children with a brief explanation of sign production at the end of the booklet (Ngandama & Williamson, 1989). The authors divide the signs into five semantic domains: family relationship signs, signs for food and animals, signs for not eatables, traditional signs and non-traditional signs. All of the presented signs occur in the data collected for this study.

Cooke and Adone (1994) are the first linguists to formally examine Yolngu Sign Language. Based on the analysis of a series of videotaped dialogues involving one deaf and one hearing Yolngu from Galiwin'ku, the authors argue that Yolngu Sign Language (YSL) should be considered a developed sign language and can be employed as a mode of discourse on its own. To illustrate this argument, they discuss major aspects of grammar such as word order, WH-questions and negation in YSL. Their observations are interpreted as supporting the view that YSL morphology and syntax display little relationship with spoken Yolngu languages and demonstrate some similarities with primary sign languages such as ASL or BSL. The findings of Cooke and Adone's (1994) investigation are taken as point of departure for the present study. Their findings will be considered in the chapters to follow.

Following Cooke and Adone's research in 1994, no further publically available studies of NE Arnhem sign language are known. The present study represents the first linguistic account of the use of space in YSL and hopes to contribute to a small, but growing body of literature on Yolngu Sign Language (see Adone, Bauer, Cumberbatch, & Maypilama, 2012).

3.2. Historic & demographic background

Indigenous Australians living in NE Arnhem Land were first referred to in the anthropological literature under the name *Murngin* (Warner, 1978 [1937]), later under the term *Wulamba*, which has been attributed to Berndt (1955) (Devlin B. C., 1986). Schebeck is said to have introduced the term *Yolŋu*[29] in his original paper in 1968, although this term seems to have had its forerunners in the literature. Chaseling has called the people of Arnhem Land with a similar term of *Yulengor* in his book in 1934 (Wilkinson, 1991, p. 1). Since the sixties, however, the term *Yolŋu* has been favored in the literature and has been adopted by linguists, anthropologists and the Indigenous people themselves. Today the term Yolngu customary refers to a sociocultural unit and the language varieties within this unit. This study employs the transcription method used by Wilkinson (1991)[30], however, a spelling *Yolngu* is preferred throughout for practical reasons (see footnote 28).

The area under consideration is located in the northeastern corner of Australia's Northern Territory. Arnhem Land stretches from east and southeast of Darwin across to the western coast of the Gulf of Carpentaria. The Yolngu region, NE Arnhem Land, starts from east of the Blyth River and covers almost 40, 000 square kilometers of Arnhem Land. Before the contact with Europeans, there is evidence that Yolngu in the coastal regions had

significant, intensive and long-lasting cooperation with the Macassan traders, who came from Indonesia in search of trade in the early sixteenth century. In the beginning of the seventeenth century, the Dutch and the Portuguese had discovered this part of Australia. It was not until 1803 that the first European contact was recorded in this area (Berndt & Berndt, 1954, pp. 15, 72). Yolngu have long been trying to resist the occupation of their lands. In the 1880s, the land was divided into eleven pastoral leases, to what Trudgen (2000, p. 18) refers to as the 'first pastoral war'. Later in the 1930s, it was declared an Aboriginal reserve. From then on, Yolngu Aboriginal communities began to be forcibly moved into new settlements away from their lands in line with the 'assimilation policy'. In 1935, the first Methodist Mission Station was established at Yirrkala (see Figure 5) fundamentally changing the traditional lifestyle of Indigenous people.

Figure 5. Yolngu communities and homelands in the NE Arnhem Region[31]

Another Aboriginal settlement was established in 1942 on the Elcho Island, known as Galiwin'ku. With the discovery of bauxite on Yolngu lands in the 1950s, a new mining town of Nhulunbuy was established, which is located on lease areas of the Alcan Gove mining company. As late as 1976, after various attempts to gain legal recognition of the ownership of their land, Yolngu people were recognized as the owners according to the *Aboriginal Land Rights Act* passed by the Australian Government

(Devlin, 1986). Today almost half of the Northern Territory is Aboriginal land[32]. Only after disbanding the assimilation policy by the NT government in 1973, groups of Aboriginal people began to move back and establishing communities on their traditional lands and waters. This became known as the start of the *homeland movement,* which has been effectively lasting until today (Calma, 2009, p. 111). Yolngu decided to move back to the so-called homelands[33] away from the hub towns created by non-Indigenous people. Aboriginal families relocate back to their traditional lands to avoid the increased social tensions between different clan groups being put together on the another clan's land. Almost one-third of Indigenous people in the Northern Territory today live on homelands. Research has proven that homelands have a positive effect for an individual Yolngu and the community wellbeing[34] (Altman, Kerins, Fogarty & Webb, 2008; Calma, 2009; Greatorex, personal communication, 2010). Living on homelands allows Yolngu to maintain their spiritual and economic connection to their land and raise their families according to their traditional culture[35]. Recent studies show that homelands have lower levels of social problems and the health of Indigenous people living on homelands is significantly better than of those living in larger communities. According to recent statistics, there are 500 homelands in Northern Territory with approximately 10,000 people associated with them and additional 40,000 people who might wish to permanently vacate their ancestral lands, but cannot do so and are forced to live in larger settlements e.g. during the school terms (Altman, Kerins, Fogarty, & Webb, 2008).

Today Yolngu people live either in former mission settlements of between 500 and 2000 along the northeastern coast of Arnhem Land as Galiwin'ku (see Figure 5) or on homelands such as Mapuru.

The third group of Yolngu lives in distant Darwin, the capital city of the Northern Territory, far away from Yolngu land. Some of them are to be found among "long-grassers", who live in parks, on the beaches or other public places (Christie & Greatorex, 2004).

Although Arnhem Land covers a large area, its population is now considerably small. The number of Aboriginal people is known to have decreased after the colonization of Australia. Today Indigenous people are a small minority, which accounts for approximately 3% of the Australian population. The Northern Territory has the largest Indigenous population in percentage terms and is estimated to be approximately 30% of the Territory population (Nakata, Byrne, Nakata, & Gardiner, 2005), which forms about 70,000[36]. The Yolngu population was estimated at about 5000 people in year 2004 (Christie & Greatorex, 2004).

3.3. Cultural background

Because social and cultural factors tend to affect the linguistic situation in NE Arnhem Land to be described in the next section, it appears worthwhile to consider these factors here.

As noted earlier, the culture of Yolngu is very rich and complex. The social life of Yolngu is governed by *gurruṯu*, the complex, extended kinship system. Clans and moieties are building the fundament of Yolngu social structure. A clan is an extended family group, which is associated with a particular land and a particular linguistic unit. Thus, every Yolngu belongs to a clan of his or her father. Identity of an individual Yolngu and the clan to which they belong is expressed through their own dialect of Yolngu matha, their song lines, dance, designs and ceremonies that relate to this same tract of land, their own traditional land. There are more than 50 Yolngu patrilineal clans in NE Arnhem Land[37].

Yolngu clans and the entire Yolngu universe is divided into two different, mutually exclusive, but complementary, interrelated and interdependent groups or moieties, termed *Yirritja* and *Dhuwa*. Each individual is by birth a member of the moiety of his or her father (Christie, 2007). Thus, every named thing of the Yolngu world belongs either to the Dhuwa or the Yirritja moiety: the land, the people, the animals, the stars and the languages. Marriages are always exogamous, which means that a man has to find a wife belonging to the other moiety (Christie, 2007). As a result, husband and wife speak different language varieties. The children subsequently inherit first their father's moiety, clan affiliation and language variety (Christie, 2007). Traditionally, a child's first language will be his father's variety and his second language will be that of his mother's clan. Each Yolngu is, therefore, always bilingual (Heath, 1978, p. 19). This leads to strong linguistic abilities of the children and their solid metalinguistic awareness. Albeit several surveys reveal (Devlin, 1986; Wilkinson, 1991 among others), that today many Yolngu in main settlements such as Galiwin'ku have adopted one dominat dialect for every day use, it still can be claimed that younger speakers have an extensive passive knowldege of their traditional clan languages. The shift towards the use of Djambarrpuyŋu for regular interaction seems to be influenced by the extra-linguistic factors such as the establishment of the mission (Devlin, 1986). This suggests that a change from centralized townships to smaller traditional communities within the homeland movement might launch a inverse development towards the clan-language maintenance. It is an established fact that Yolngu as well as other Aboriginal Australians possess an exceptionally strong and intrinsic relationship between their social identity

and the language variety, which in turn is a kind of "passport" (Evans, 2010, p. 8), which gives people the right to stay in a particular tract of land. While English is simply a communication variety which can be spoken anywhere in the world, Aboriginal languages and their names are predominantly associated with a particular geographic region.

3.4. Linguistic context

It has already been shown that Yolngu Sign Language is not a signed version of any spoken Yolngu language (Cooke & Adone, 1994). Yet coexisting in the same sociolinguistic and cultural environment, languages tend to have some impact on each other. In addition, Australian Aboriginal sign languages are claimed to have been developed by the hearing members already competent in a spoken language (Kendon, 1988, p. 406). Given these sociolinguistic circumstances, comparison with the surrounding spoken Yolngu languages cannot be ignored. After a high level overview of the Yolngu linguistic bloc within the wider context of Australian languages, I examine individual languages and/or dialects spoken in the NE Arnhem Land in order to be able to identify likely causes of influence on YSL or vice versa.

Historical genetic relations, classification and comparative analysis of Australian languages have caught the attention of many researchers (Dixon & Blake, 1983; Dixon, 2002; Evans, 2003, 2005, 2010; Bowern & Koch, 2004; Sutton & Koch, 2008 among others). A particular emphasis has been attached in the research literature to the 'Pama-Nyungan' and 'Non-Pama-Nyungan' linguistic distinction. After the lexicostatistic classification work by Hale, O'Grady and Wurm in the 1960s (cited in Koch, 2007), this linguistic and geographical division has largely become to be widely accepted by the majority of linguists, anthropologists and other specialists with Dixon (2002) being a notable exception.

As illustrated in Figure 6, a large part of Australian languages has been classified as belonging to the "Pama-Nyungan"[39] family group. What most scholars refer to as the "Non-Pama-Nyungan" family is represented by 28 language families found in the north-western and north-central part of the continent. Without tackling the controversial issue of 'Pama-Nyungan' and 'Non-Pama-Nyungan' linguistic division, it suffices here to state the language varieties in the NE Arnhem Region have been classified by most Australianists as a subgroup of 'Pama-Nyungan'[40]. The evidence for Yolngu languages as a part of the 'Pama-Nyungan' group comes from inter alia personal pronouns (the occurrence of *ŋali* as the 1dual inclusive

Figure 6. Distribution of Pama-Nyungan and Non-Pama-Nyungan language families[38]

pronoun) or case morphology (Heath, 1978, p. 12; Alpher, 2004, p. 122; Bowern & Koch, 2004; Sutton & Koch, 2008, p. 490, among others). As seen in Figure 6, the enclave of Yolngu linguistic bloc is exceptional since it is isolated geographically from other 'Pama-Nyungan' languages by the group of 'Non-Pama-Nyungan' languages to the west. The outer fringes of the Yolngu languages are thought to be influenced linguistically to some extent by the neighboring 'Non-Pama-Nyungan' languages (Heath, 1978; Morphy, 1983; van der Wal, 1992). The Yolngu languages are typologically quite distinct from the surrounding languages. They are entirely suffixing, whereas the 'Non-Pama-Nyungan' languages make usually use of pronominal prefixes referring to core arguments of the clause (Dixon, 2002).

The Yolngu linguistic bloc has attracted the attention of many linguists. In particular, much research has been addressed to the issue of dialectology and relationships between the languages in the NE Arnhem Land (Morphy, 1977; Heath, 1978; Schebeck, 2001, among others). Yolngu recognize their languages as being distinct from those of adjacent groups and refer to them collectively as *Yolngu Matha*[41]. These languages are according to Evans (2005, p. 256) as closely related to each other as Romance languages, which is as compared to other parts of Australia quite remote genetically (Heath, 1978, p. 1). The internal genetic classification of the Yolngu group, however, seems to be quite a challenging task which has been complicated by the use of disputable concepts such as 'language', 'dialect', 'dialectal group' or 'subgroup' (Morphy, 1983, p. 3). Van der Wal (1992) reported on

the disagreement and confusion of linguists with regard to classification of the relations between Yolngu languages. Today, almost twenty years later, no widely accepted precise genetic and lexico-statistical relationships between languages in the Yolngu area has been agreed on. The purely linguistic criterion of mutual intelligibility for distinguishing between languages and dialects seems to be an insufficient descriptor of the linguistic varieties in the Yolngu area. As described in section 3.2, most Yolngu are multilingual, knowing many Yolngu varieties and understanding (if not speaking) several distantly related ones. Using native terms such as *matha*, as claimed by Schebeck (2001, p. 61), is likewise unsuitable, since the word is used to denote 'dialect, 'language', as well as, 'dialect group', 'language group' without distinguishing between them.

Academic literature citing classifications of Yolngu languages is strikingly inconsistent. The number of linguistic varieties in the classifications offered in the literature ranges from 5 to 11. For example, Morphy (1983, p. 3) speaks of 5 *languages*. Walker (1984) and van der Wal (1992) identify 6 *speech groups* in the Yolngu bloc (cited in van der Wal, 1992, p.14/17). Heath (1978) first distinguishes between a northern and a southern *group* and records 7 Yolngu *languages* (Ritharngu, Dhayʔyi, Dhuwal, Dhuwala, Dhaangu, Dyaangu, Nhaangu) (Heath, 1978, pp. 2–3). In his later work, he differentiates 10 *languages* in "dialect-chain fashion" (cited in van der Wal, 1992, p. 12). Wilkinson (1991, p. 32) uses the term *varieties* to refer to these different forms of speech in this area. Dixon (2002, p. xxxvi) divides the Yolngu genetic group into three subgroups: the southern, northern and western subgroup, accounting that way for 8 *languages*[42] with each containing at least two *dialects*. Schebeck (2001) classifies the Yolngu bloc on the basis of the empirical research and sociolinguistic factors into 11 *dialect groups* (see Figure 7) by avoiding the term *language*. Every dialect group according to Schebeck contains more than two dialects. This study follows the terminology proposed by Schebeck (2001) to avoid confusion due to the intricacies of dialectal variation in NE Arnhem Land.

Despite the discrepancies mentioned above, the general patterns of the relationship between languages and dialects in NE Arnhem Land are clear. A general consensus has been, for example, reached that the dialect groups (cf. Figure 7) are named according to the form of the proximal demonstrative 'this' and 'here'. As the proximal demonstrative in Djambarrpuyŋu is *dhuwal*, it belongs to the Dhuwal dialect group. Similarly, Gupapuyŋu is grouped under Dhuwala dialect groups for its demonstrative *dhuwala*.

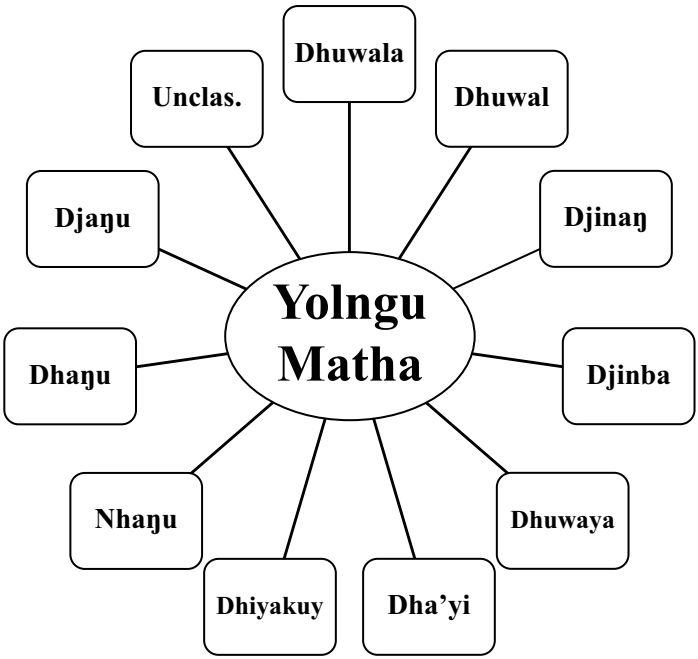


Figure 7. Schebeck's classification of dialect groups in North East Arhem Land[43]

The informants of this study used Dhuwal and Dhuwala dialects. While Schebeck (2001) separates these two dialect groups as seen in Figure 7 above, Morphy (1977) has shown that Dhuwal and Dhuwala dialect groups are more closely related to each other than any other Yolngu dialects. His insightful account reveals that Dhuwal-Dhuwala distinctions result from the vowel deletion rule, which can be exemplified in the following Gupapuyŋu (Dhuwala) clause and its Djambarrpuyŋu (Dhuwal) counterpart[44]:

						[Djambarrpuyŋu]
						[Gupapuyŋu]
1)	Gup.	*dhuwala+*	*nydja*	*yätjkurru*	*mirithirri*	
	Djam.	*dhuwan=*	*dja*	*yätjkurr*	*mirithirr*	
		"this/here"+	PROM	bad	INTENS	
		'This is really bad.				
	Gup.	*bili+*	*na*	*ŋarra*	*dhipuŋuru+*	*nydja*
	Djam.	*bili+*	*n*	*ŋarra*	*dhipuŋur+*	*nydja*
		COMPL+	SEQ	1SG	"this/here".ABL+	PROM
		I'm finished here'.				

(Wilkinson, 1991, p. 30)

From this example, it is apparent that a vowel deletion process has affected selected grammatical morphemes. Arguing the deletion rule is "consciously maintained marker of social differentiation", Morphy (1977) has shown that the Dhuwal-Dhuwala distinction is not dialectal, but *sociolectal*. It is indeed the case, that all Dhuwal dialects (Djambarrpuyŋu, Djapu, etc.) are associated with the Dhuwa moiety and all Dhuwala dialects (Gupapuyŋu, Gumatj, etc.) with the Yirritja moiety (see section 3.3 for the discussion of the two moieties). Morphy's line of argumentation is also confirmed by a continuous geographical space, which these dialect groups occupy in the NE Arnhem Region as shown in Figure 8. As can be seen in Figure 8, Dhuwal and Dhuwala speakers are found literally side by side, and are, therefore, rather divided into eastern and western Dhuwal/Dhuwala dialect group (Morphy, 1977, p. 51; Wilkinson, 1991, p. 13).

Figure 8. Map of the approximate territories of Yolngu dialect groups[45]

The spoken dialect used more often in the fieldwork setting of this study was Djambarrpuyŋu in all fieldwork sites. In accord with the hierarchy of descriptive terms proposed in the literature, it is possible to talk about the Pama-Nyungan language family, the Yolngu group, the southern Yolngu sub-group, Dhuwal-Dhuwala dialect group, eastern Dhuwal sociolect and the Djambarrpuyŋu dialect (cf. Devlin, 1986; Wilkinson, 1991).

Djambarrpuyŋu is a highly agglutinating suffixing language with particularly rich nominal and verbal morphology. Today, Djambarrpuyŋu dialect is associated with the Galiwin'ku settlement and it is the "official language" used in school[46]. Djambarrpuyŋu has evolved as a lingua franca in Galiwin'ku and other settlements and communities in NE Arnhem Land, which has been mentioned by Devlin (1986) who found the shift towards the use of the single dominant dialect contradicting the traditional clan affiliations. The development of Dhuwal dialects as a modern lingua franca in Galiwin'ku could be connected with the establishment of the mission about 70 years ago when different clans with different dialects were brought together to live in close proximity. A similar situation was described for Yirrkala, where a major shift in language towards a koine or Dhuwaya has been identified by Amery (1993).

Today, a considerable body of data on Djambarrpuyŋu has been collected. The most useful studies focused on the grammatical aspects of Djambarrpuyŋu were contributed by Tchekhoff & Zorc (1983), Devlin (1986) and Wilkinson (1991).

3.5. The use of YSL in Yolngu communities

> "*What are you doing here?*"- one of the community workers from Sydney asked me in Galiwin'ku,
> "*I am investigating the local sign language*" – I said,
> "*Oh, yeah, I have seen them waving with their hands*".

This section gives some insights into how the Yolngu Sign Language is used today in the communities of NE Arnhem Land. The findings reported here are primarily based on the observational data gathered during the fieldtrips and conversations with the participants of this study (cf. section 4.3 for information about participants of this study).

The use of Australian Aboriginal sign languages has primarily been associated in the literature with the widespread practice of speech taboos usually imposed on hearing women as reported by Kendon (1988) for NCDSLs. However, the use of elaborate sign language by Yolngu in NE Arnhem Land

is apparently caused by other communicative reasons. The literature has attributed various communicative functions to this language such as the use as lingua franca, the use for communication at a distance, when hunting in order not to scare off prey and communication with the deaf (Warner, 1937; Elwell, 1982; Cooke & Adone, 1994). Cooke and Adone report, for example, that YSL was also used "where proximity to highly sacred objects demands quietness as a form of respect" (1994, p. 3). Presently, there is no evidence of Yolngu practicing extensive speech taboos, in which spoken language is prohibited for prolonged periods of time and sign language is being used instead (Greatorex, personal communication). The more complex Aboriginal NCDSLs among the women at places like Yuendumu and Willowra appear to be associated with speech taboos in these communities. Signing is favored in Central Australia throughout prolonged periods of speech bans during and after male initiation or death and burial rituals (Kendon, 1988, p. 442). The fact, that signing persists without the periods of enforced silence in NE Arnhem Land, shows that some other factors might be at work in the case of YSL.

The observational data collected during fieldwork for this study suggests that Yolngu Sign Language is used today mainly for the two following purposes:

1) communication between/with the deaf and/or hard of hearing Yolngu,
2) interaction (usually between hearing Yolngu) at a distance within the settlement or outside of it (e.g. hunting, fishing etc.)

3.5.1. Communication with deaf Yolngu

It is difficult to quantify the number of hearing impaired YSL users in NE Arnhem Land, as there is no demographical data available regarding the number of deaf or hard of hearing people in Yolngu region. However, recent research shows that the Indigenous population in Australia has a high propensity towards hearing loss (Coates, Morris , Leach, & Couzos, 2002; Morris, et al., 2005; Howard & Hampton, 2006; Howard, 2004; 2007; de Plevitz, 2010; Stoakes, Butcher, Fletcher, & Tabain, 2011, among others). The studies estimate that Indigenous people experience 50 times as much hearing loss as other Australians and attribute this fact to the uncorrected damage to the middle ear caused by repeated severe episodes of infections (otitis media) during childhood. The predisposition to and persistency of otitis media

among Aboriginal children have been generally found in developed Western countries with Indigenous minorities such as Inuit in Canada, Maori in New Zealand, American Indians in the United States and Aboriginal people in Australia (Bowd, 2005). Overcrowded housing in artificially constructed communities, poor nutrition and hygiene, limited access to medical treatment have been named as factors which contribute to the likelihood of children experiencing middle ear disease (De Plevitz, 2010). Indigenous Australians are reported to have the highest recorded levels of prevalence of otitis media in the world (Morris, et al., 2005). Having examined nearly seven hundred children aged 6–30 months from 29 remote Aboriginal communities in Northern and Central Australia, Morris et al. (2005) conclude that almost all children (91%) had some form of middle ear disease. Studies show that infections associated with otitis media are unfortunately persistent. Later in life as many as 70% of the adult Australian Aboriginal population in remote communities is reported to suffer from some degree of hearing loss (i.e. greater than 25dB) (Couzos, Metcalf, & Murray, 2001; Stoakes, Butcher, Fletcher, & Tabain, 2011). As no official numbers exist, the prevalence of deafness for the settlement Galiwin'ku in NE Arnhem Land where data for this study has been collected may be estimated to be 0.32%, a percentage that is three times[47] higher than has been estimated for non-Aboriginal Australia (Schein & Delk, 1974 in Johnston & Schembri, 2007). Support for the above mentioned estimation comes from the conversation with Yolngu informants, who reported to the author during the fieldwork in 2010 that there were 7 deaf Yolngu at that time in Galiwin'ku. Recent studies (Morris, et al., 2005) and fieldwork observations indicate, however, that there is a greater number of Yolngu in the settlement and the neighboring homeland centers who have less severe and sometimes fluctuating levels of hearing loss. Most deaf YSL signers are told to have acquired deafness postlingually as a result of the otitis media. It thus becomes unlikely that the primary cause of deafness in Galiwin'ku settlement is hereditary. Yet the case of Yolngu Sign Language is not an exception. There are other „communities with a high incidence of non-hereditary deafness" in which the use of sign language was observed (Nyst, Sylla, & Magassouba, 2012).

In their recent study, Butcher, Fletcher, Stoakes, & Tabain (2012) cautiously speculate as to whether the existence of alternate sign languages in Aboriginal Australia could be attributed to the hearing impairment caused by otitis media. The development of another alternate sign language, the Keresan Pueblo Sign Language (see 2.4), has been, for example, ascribed to this medical condition (Kelley & McGregor, 2003). This "untestable hypothesis" as called by Butcher, Fletcher, Stoakes, & Tabain (2012) would, if

confirmed, change our understanding of the origin of Yolngu Sign Language. If middle ear infections have been the norm for many generations in these Aboriginal communities before Europeans first made contact, this could offer a plausibe explanation for the development of Yolngu Sign Language as a result of hearing impairments occurring in the communities, similar to the origin scenario proposed for village sign languages around the globe (Zeshan, 2008). From present-day accounts it is difficult to tell whether deafness or hearing impairment could have been a factor in the original emergence of sign languages in Australian Aboriginal communities. Without any evidence for or agains this hypothesis, the origin of YSL remains unclear[48].

Althouth the estimated percentage of deaf people (0.32%) in Galiwin'ku is lower than the ratio of deaf people found in deaf villages (cf. Table 1, section 2.3), it is significantly higher than the expected rate of 0.1 percent of congenital deafness in the general population. It must be kept in mind, however, that signing is by no means restricted to deaf Yolngu but is widespread among the hearing Yolngu community members in daily interaction, even when deaf people are not present. This fact makes it difficult to determine an accurate number of YSL signers. Similar to the descriptions of deaf villages in Thailand, Bali or Ghana (cf. section 2.3), deaf Yolngu seem to participate in the community's social and economic life the same way as hearing Yolngu do (Nonaka, 2007; Nyst, 2007; Marsaja, 2008). Deaf Yolngu who participated in the study seemed to be very capable members of their community. E.R. (female ~30), who became deaf due to the middle ear infection, went to school in Galiwin'ku and is now working at the Elcho Island art gallery. W.G. (female ~40) was born deaf, went to school and is now working at the Shire Council. It is clear that YSL serves as a main means of communication for her. YSL is also a main means of communication for R.G. (male, 10 years old), who was also born deaf in a Yolngu settlement. He goes to school with hearing children, since there is no education for the deaf. At the time of my fieldwork, it was reported that this deaf boy was being visited by one Balanda woman from Sydney, who apparently teaches him AUSLAN signs. Since both deaf and hearing people share Yolngu Sign Language, I refer to it as shared sign language (cf. Nyst, 2012, see section 2.5 for the discussion). There is no Deaf[49] community per se, rather, the deaf people are part of Yolngu communities. All three deaf Yolngu participants do not meet and converse with each other more often than they do with other members of the community. No deaf-only activities have been observed in Yolngu communities similar to deaf gatherings described by Marsaja (2008) or Johnson (1991). There is no *Deaf* culture, i.e. there is no deaf-identified culture. Yolngu seem to have a positive attitude toward deafness, which does not result in disablement.

3.5.2. Interaction over distance

The second observed occurrence of sign language use in Yolngu communities is the interaction between community members at a distance. Signing is used when speech appears to be impractical or undesirable, for instance, when people are separated by some distance or when music or noises are loud and speaking causes too much effort. Observation of daily interaction in two Yolngu communities reveals that nearly all members are able to transmit messages using YSL by standing "where a person can just see you" (Trudgen, 2000). During the elicitation sessions for this study, the informants were asked to sign while sitting close to each other in front of the camera. All of the hearing informants found this situation very unnatural, since they saw no need to use sign language within such a short distance from the addressee. However, instances of code-switching between a spoken dialect and Yolngu Sign Language at a short distance were also observed. This fact that signs are used in daily interaction could be attributed to the Yolngu communication culture, which differs strongly from the dominant European Australian practice. As a number of authours have reported, Yolngu interaction can be characterized by the pervasiveness of silence. Yolngu people mainly use indirect communication modes, are not involved in direct debate, do not offer any criticism, do not make requests and avoid a direct eye contact in the process of conversation (Trudgen, 2000, pp. 78–80). In contrast to European Australian speaking etiquette, it cannot be expected that an answer will be given if a question was asked (Harris, 1977, p. 442, cited in Kendon, 1988, p. 452). On the contrary, frequent questioning may intimidate an Indigenous person and make him or her feel uncomfortable. Given the described character of Yolngu interaction, it becomes clear that a silent mode of communication in the visual-gestural modality as an alternative to speech may be preferred by Yolngu in some daily situations (see also Kendon, 1988, p. 459).

3.5.3. Further aspects of YSL origin and use

In Central Australia, it is usually women, who use a very complex sign language. Men only occasionally use signs, as, for example, in the male initation ceremonites or in hunting (cf. Kendon, 1988 p. 87; Green, Woods, & Foley, 2011, p. 68). In NE Arnhem Land, women, men and children seem to be conversing in YSL with a similar fluency. In some cases, the use of sign language supplementary to speech seems to be redundant since sign and speech are used simultaneously in the discourse. However, in some cases, the

meaning of many utterances such as in (2) accompanied by signs cannot be understood without knowledge of the YSL.

(2)	*balanya*	*rraku*	*wahna*	[YSL]
	such as	*my*	*where*	
	YAPA	ŊARRA	QS	
	sister	1SG	where	
	'Where is my sister?'[50]			
				Sequnce12_G_sentences_2009.mpg

In (2) every YSL sign is complemented by the spoken components, the so-called 'mouthings' (Boyes-Braem & Sutton-Spence, 2001) of Djambarrpuyŋu words. The YSL sign YAPA is accompanied in this case by the mouthing *balanya* meaning "something like/such as". Thus, the meaning *sister* is exclusively conveyed through the manual modality and the oral modality seems to attrack the attention of the interlocutor to a particular sign. Examples such as (2) are very frequent in the YSL data corpus and are referred to here as 'emphasis mouthings' (see 5.3.2 for the discussion of mouthings in YSL). Such examples may well illustrate that the knowledge of YSL signs is very widespread in the Yolngu communities and YSL represents an intergral part of Yolngu communicative practices.

Another instance of sign language use is mentioned by Lowell and Devlin (1999) who draw attention to miscommunication between Aboriginal students and their non-Aboriginal teachers in the bilingual Aboriginal school in Galiwin'ku and report the following: "In the classrooms observed in this study, many children consistently exhibited behaviors that […] suggested that they were not listening. These children were constantly moving, lying down, fidgeting, *using Yolngu Sign Language to tease other children*…" (p. 152, emphasis added).

Taking together the above observations, Yolngu Sign Language is used today as

1) the alternate means of communication by hearing people and
2) as the main means of communication by deaf people.

Hence, YSL can be considered a shared sign language (see 2.5 for discussion) that has developed for the variety of reasons. In the case of YSL and the sign languages of Central Australia, the use of sign language among hearing people is recognised as a common practice and is part of the Aboriginal communication economy (see also Kendon, 1988). In the case of other sign

languages, this is usually not the case. Although a relatively large number of nonnative hearing signers (such as educators, interpreters and others) in any Western country contribute to the spreading of the sign language, and a great number of hearing people in deaf villages are fluent in the local Indigenous sign language (see Marsaja, 2008, Lanesman & Meir, 2010), to date only a few situations were described, in which hearing people use a sign language for interaction with other hearing people for various reasons, when deaf people are not around (see Nonaka, 2007 for some exceptionals uses of Ban Khor between the hearing signers).

The origin of Yolngu Sign Language cannot be accurately dated. As mentioned in previous chapter, the first descriptions of sign language used by different Aboriginal groups in the northern Australia were done in the 19th century (Howit, 1890). In many different parts of the continent, signing was noticed in use by the first Europeans that encountered Aborigines (Kendon, 1988). Thus, the sign language may be at least as old as the first Yolngu settlements in the NE Arnhem Land. It is conceivable that the sign language existed before the contact with Europeans. The indications are that Australian Aboriginal sign languages generally are a very old practice. This seems to be the implication of what has been gathered about their presence in Aboriginal cultures from the earliest observations of them, from considerations regarding the nature of the signing itself as well as from considerations put forward, for example by Kendon (1988), regarding the relationship between ecology sociality and propensity to use sign in Australia (see chapter 14 of his book) as well as the use of signing in other societies such as the San and the pygmies of the Congo.

Historically, Yolngu and other Aboriginal people in Arnhem Region were hunter-gatherers and led a nomadic way of life. It is possible that gestures used for silent communication while hunting have gradually evolved into a sign language among Yolngu, and later developed into a lingua franca to make communication possible between Yolngu speaking different dialects. Notwithstanding the genetic relation between most spoken Yolngu languages, many of them are quite distinct from each other in many respects, e.g. in terms of morphological structure; and thus, mutual intelligibility in the Yolngu region in the past times cannot be taken for granted (Heath, 1978, p. 5; Kabisch-Lindenlaub, forthcoming; 2011, personal communication). Thus, Yolngu Sign Language might have developed as means of communication between different clans speaking different dialects. And if that is so, this would in part account for why YSL does not have the close link with any spoken Yolngu language, which is the case, for example, among the Warlpiri (Kendon, 1988).

Moreover, an additional factor might have contributed to the development of a signed lingua franca among Yolngu. In contrast to the language of industrialized societies such as English, language in Australian Aboriginal society is considered as property (Amery, 1995; Lowe, 2001). A particular dialect is, therefore, seen as the intellectual property of a particular clan. People can be called as a 'language X' person without being able to speak language X (Turpin & Green, 2010). It has been made particularly evident by Morphy (1977) that dialectal differences are consciously maintained by Yolngu as a marker of social differentiation (p. 51). Languages are thus owned and not simply spoken in Aboriginal Australia (Rigsby & Sutton 1980, cited in Kendon 1988, p. 385). It has been noted that no such ownership ideology is assigned to sign languages in Aboriginal Australia (Kendon, 1988, p. 385). Thus, it seems plausible that Yolngu developed a language which is not possessed by any group to deal with multilingualism in NE Arnhem Land (see Brandl & Walsch, 1982). The development of such mutually intelligible sign language appears to be advantageous for communication between different Yolngu groups since it does not conflict with any traditional spoken Yolngu dialect as an entirely different medium.

The use of sign language for intertribal communication has received statistical support in earlier literature (Divale & Zipin, 1977). Davis (2010) has put forward a similar proposition concerning the use of PISL, which, he concludes, was used extensively as a lingua franca for communication among North American Indian nations before spoken English replaced it (p. 172).

Today, Yolngu Sign Language similar to many Australian Aboriginal languages is faced with serious endangerment (Meir, Lanesman, Adone, & Cumberbatch, 2012) (see also section 3.1 for the discussion of the influence of Auslan or Signed English on the Indigenous sign languages used in far north Queensland). There are currently no precise estimates concerning the vitality of this language. Fewer Yolngu seem to learn and transmit the traditional way of signing. Consequently, Yolngu Sign Language as a part of the undocumented oral Indigenous knowledge might be threatened by the Australian culture and Auslan, the sign language of Australian Deaf community, even in such traditional parts of Aboriginal Australia as Arnhem Land. Meir, Lanesman, Adone, & Cumberbatch (2012) suggest that YSL is already affected by intergenerational loss since many younger people do not appear to be gaining a productive knowledge of this sign language. Therefore, there is an urgent need to describe the language, which is the aim of the following chapters.

Chapter 4
Data collection

This chapter describes the methods used in data collection and information about the fieldwork trips, the stimuli used, the participants and the subsequent data annotation for the YSL research.

The chapter is organized as follows: section 4.1 describes the places where the data were collected, 4.2 explains what types of data were gathered and what elicitation methods were used. In section 4.3 I present the essential information about the participants of the study before discussing the transcription and encoding of the collected sign language material in 4.4.

4.1. Fieldwork

The analysis presented here is based on data primarily collected during two periods of fieldwork between August 2009 and July 2010. On the first fieldtrip, the fieldwork took place in the city of Darwin, the capital of Northern Territory, Australia (see Figure 9). During the second fieldtrip data was collected in two places in North East Arnhem Land: in Mapuru and in Galiwin'ku at the Elcho Island (see Figure 9).

4.1.1. Fieldwork sites

During the fieldwork in 2009, the data were collected from two language informants, who were staying in Darwin for temporary work as language interpreters and originally stem from Galiwin'ku (Elcho Island), where subsequent data collection took place. Both women can hear but have a deaf sibling with whom they maintain sign language contact on a regular basis.

The second fieldwork, in 2010, started in northeast Arnhem Land, the Yolngu native land in a remote Aboriginal homeland community, Mapuru, with a population of approximately 70 people including 30–40 children (see Figure 9 and Figure 10). Mapuru (see Figure 5) is situated on the mainland neatly 600 km away from Darwin (see Figure 9 & Figure 10) and was established by two families in the 1960s. There is one school in Mapuru where various languages are spoken (Greatorex, 2010 personal communication). Due to the remoteness of this community, a great deal more organization

Figure 9. Northern part of the Northern Territory, Australia[51]

Figure 10. Map of North East Arnhem Land, with fieldwork locations indicated[52]

and flexibility was required. A research permit had to be obtained from the Northern Land Council before entering the Aboriginal community. Finance and provisions had to be well prepared in advance: The nearest post office and bank are both situated in Darwin, approximately 600 km away; the closest store is located in Galiwin'ku, which can be reached via air charter in about half an hour. However, during the wet season between October and March the high quantities of rain can lead to the closure of Mapuru's airstrip and cancellation of all the flights. Similarly, cyclones in April 2011 flooded all access roads to the central Arnhem Highway and to the boat landings, cutting off the region entirely and leading to the cancellation of medical, mail, diesel, fresh food or emergency equipment flights from Darwin or Galiwin'ku. To minimize the difficulties arising from the weather conditions, the fieldwork had to be conducted during the dry season months.

Many adult residents of Mapuru were competent in Yolngu Sign Language with varying levels of fluency. All of the community members were hearing. One member's deaf sister, who lives in one of the nearest settlements of Gapuwiyak (approximately 50km away from Mapuru), comes to Mapuru very often and interacts with the people in this sign language. Two of the elders agreed to participate in various elicitation sessions and allowed their signed conversation to be recorded on video.

The second stop on this field trip was Galiwin'ku settlement, which was originally established as a Methodist mission. Galiwin'ku is situated on the Elcho Island (see Figure 9 and Figure 10) and lies approximately 700 kilometers to the east of Darwin. Galiwin'ku is approximately 60 km long and 6 km wide and belongs to one of the most remote and largest Aboriginal settlements in Australia. Galiwin'ku is located near the island's southern tip and is the main settlement on the island next to further homelands such as Gäwa, Ban'thula, Djurranalpi, Ŋayawili (First Creek) and others (see Figure 11).

The settlement is populated by approximately 2200 Yolngu[54], made up of some 60 different *mala* (hereditary groups) whose homelands are spread across the whole region (Gumbula, 2005) and a handful of non-Indigenous administrators, community workers and teachers. The exact Yolngu population in Galiwin'ku is unknown, since it varies widely when many of the residents migrate to the outstations during the wet season.

In Galiwin'ku, I was able to work with deaf and hearing signers competent in YSL (see Table 4). On all occasions, I was guided by a multilingual language assistant and experienced interpreter. She constantly guided me through the web of Yolngu kin relations: 'He is your *gurruŋ* (cousin), stay away from him'.

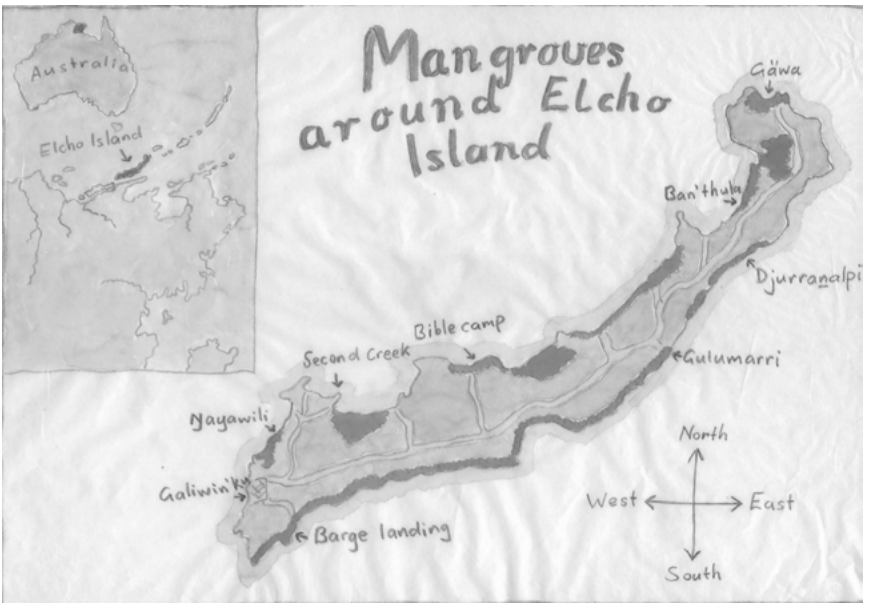


Figure 11. Elcho Island and the settlement of Galiwin'ku[53]

4.1.2. Cultural issue

Yolngu people exist in a world with an important system of kinship structure as social organization and 'moral order' (Morphy, 2008) which is very different to Western societies. Similar to many other Australian Aboriginal societies, Yolngu is a kin-based society determined by kin relations between people (McGregor, 2012). To be assimilated into the community, I was given a Yolngu name (Guyula) and adopted into the system of Yolngu kinship (Wamuttjan). Establishing my role in the community was critical to conducting any field research without disrupting the Yolngu way of life. When Yolngu visit their relatives, the position of the visitor within this kinship system must be ascertained, if unclear prior to that. Only after the relationships of the 'domestic moral economy' (Morphy, 2008) are established, can the members of the group engage one another appropriately. Every effort is made to help children internalize the system of kinship relations from a young age. Research shows that children grasp the structures of Yolngu kinship as early as by the age of 8 (Williams, 1981, p. 117). In case Yolngu invite a *balanda,* a non-Yolngu, to their community, the *balanda's* place within the *gurruṯu*, the Yolngu kinship system, must be established if they were to engage in an ongoing relationship. After "adopting" a *balanda* into

a family, a stranger becomes an existent entity in Yolngu world (Watson & Chambers, 1989). This act of adoption allowed for the opening of dialogue, observation, association with the new "kin" and participation in various gatherings. In such process of adoption, I was assigned a place in the hierarchy of the community, which guided my interaction with Yolngu members.

4.2. Stimulus materials

In this section, the methods of data collection are reviewed. All data referenced in this book was collected by the author, except a recording with duration of ca. 10 minutes done by one of the teachers at Shepherdon College at Galiwin'ku in 2009. This video was kindly made available for my YSL study with the written permission of the school and the two signers seen in this video. These two hearing signers are, thus, not counted as participants of the present study (see Table 4). The two women are both in the 60s and live in Galiwin'ku.

In 2009, both spontaneous and elicited data were collected with two hearing signers. Approximately two hours of video footage was recorded. Similarly in 2010, a total of five and a half hours of spontaneous and elicited video footage was acquired with fourteen deaf and hearing signers (see Table 4). The total raw recordings (approximately eight hours) were later reduced to six hours and eighteen minutes of edited footage. As shown in Table 3, two types of data were collected 1) spontaneous dialogs and monologs of personal narratives and 2) stimulus-based elicited signing (for information about the distribution of data among the participants see Table 5).

Table 3. Types of collected YSL data

	Elicited signing	**Spontaneous signing**	**Total**
	267, 20 min (72%)	103 min (28%)	
Visual material	173 min (47%)		
Questionnaires and games	17, 20 min (4%)		
Translation from English and Djambarrpuyŋu	77, 20 min (21%)		
			371 min (100%)

4.2.1. Spontaneous signing

Almost 30% (see Table 3) of the collected data is spontaneous signing, which was enacted for recording purposes without the use of any specific props such as pictures or toys. Spontaneous YSL data thus include free monologs or dialogs on various topics without the interference of the researcher. It must be kept in mind, however, that such data do not represent a natural conversation. It was rather produced for data collection purposes only. Natural data presents actual communicative routines of the participants, which are being observed or recorded by the researcher (see Himmelmann, 2004, pp. 71ff. for a typology of communicative events with respect to their 'naturalness').

It was, unfortunately, not possible to record any natural interaction in Yolngu Sign Language. During the field trips, in addition to the formal recording sessions of spontaneous and elicted data, some naturalistic signing could be observed in the communities. These observations play a role in contributing to the discussion of the usage of this sign language in the Yolngu communities today (see section 3.5). However, the linguistic analysis of YSL to follow in the next chapters is based only on the spontaneous and elicited data collected for this study. Therefore, additional naturalistic data must be collected in order to produce conclusive results in this segment of the study. Moreover, it must be emphasized, that more systematic collection and further analysis of YSL data has yet to be undertaken to ensure accuracy. The findings presented here should be considered to be preliminary and may be subject to revision at a later date. I hope that these preliminary findings on YSL may already deepen a discussion and our understanding of linguistic diversity of sign languages.

4.2.2. Elicited signing

Various elicitation methods were developed and used during the fieldtrips. During most tasks, the participants were shown visual material such as photos, pictures or video clips and asked to describe or tell what was happening. These methods are described below.

4.2.2.1. Visual materials

For the first elicitation of basic YSL vocabulary, a set of 35 pictures was designed prior to the fieldwork. The set contained pictures and photographs

of local objects, known to the Aboriginal people in the area of data collection (e.g. damper, woven basket, didgeridoo etc., for a sample see Figure 103 in Appendix II). The pictures were shown one at a time to the signer, who described what he/she saw on the picture to another signer. Since no corpus of YSL signs existed prior to this study, a set of lexical signs was needed for a phonological analysis of YSL presented in chapter 6.

Another stimulus set containing 23 images of various house objects and animals, typically found in that part of Australia, was developed for the picture selection task. The elicitation procedure required one signer to view the picture showing, for example, one kangaroo and to produce a sign for kangaroo, the other signer was confronted with three different pictures, printed on the other side showing e.g. one kangaroo, two baby kangaroos and an emu, and was asked to identify one of them, which best corresponds to the sign produced earlier by the first signer. The signer was then asked to point to the picture that matched what was signed earlier. This technique was only possible with the presence of two or more signers. This elicitation procedure was chosen in order to measure the comprehension of the signers.

Further, a set of 30 short video clips, designed by Irit Meir and her colleagues Mark Aronoff, Wendy Sandler and Carol Padden (see Padden, Meir, Aronoff, & Sandler, 2010) was used for the elicitation of grammatical use of space. Each clip depicts a single action in a motion across space of either a human or inanimate entity by itself or involving another entity. Different objects in motion were presented: a ball rolling (see Figure 12b) or a woman running. The following procedure has been applied. A signer was asked to view a short video clip on a laptop screen and describe the event in each clip to another YSL user. The signer was shown, for example, a clip showing a woman rolling a ball (see Figure 12c). Another signer who views the signed production is than asked to identify one of three pictures (see Figure 12 for an example taken from (Padden, Meir, Aronoff, & Sandler, 2010, p. 577)) best corresponding to the action just described. One of the three pictures correctly depicts the action and entities involved, the second has a different subject but the same action (someone is rolling a ball, see Figure 12b), and the third shows the same subject performing a different action from that shown in the video (video clip is showing a woman giving a man a shirt, see Figure 12a). If the viewer has chosen an incorrect picture, the signer was asked to repeat the description. If the descriptions was not clear enough (e.g. when the signer dropped the subject of the action), the addressee could ask for clarification.

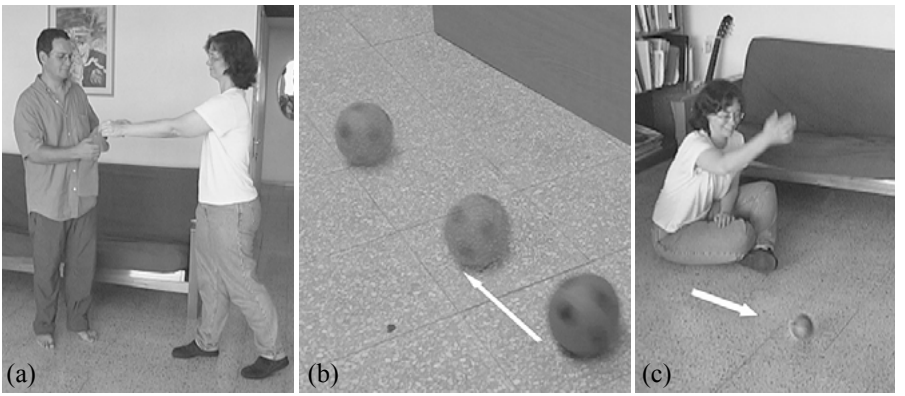


Figure 12. Frames from video clips used for the elicitation

Number stimuli materials kindly made available by Inge Zwitserlood, Asli Özyürek and Pamela Perniss at the MPI in Nijmegen, the Netherlands were used to elicit number, numerals and spatial information. This set of 43 stimulus pictures and photographs showing objects and animals in static configurations. These pictures and photographs showed different numbers of objects that were in various spatial relations to each other. They contained one, two, three or four, or uncountable numbers of cup(s) on a table (see Figure 13) or in a cupboard or boat(s) on water and beach; and cows in a meadow (behind a fence). The signers were asked to describe each printed picture to another signer.

Figure 13. A sample from the number stimuli material

Other stimuli material developed and kindly made available by Inge Zwitserlood were used for the elicitation of classifier verb constructions, motion verbs, and the use of space (see Figure 14). They have already been successfully used in the foregoing studies on DCSLs (Zwitserlood, 2003; Eccarius & Brentari, 2007) or emerging sign languages (Adone & Bauer, 2009).

Figure 14. Stimulus items for eliciting classifiers

Additionally, signers were asked to retell a story from a 24-page wordless picture book "Frog, Where Are You?" (Mayer, 1969). It was used to elicit expressions of motion and location, such as classifier constructions.

4.2.2.2. Questionnaires and games

For further elicitation of YSL vocabulary and grammar, the questionnaires developed by Ulrike Zeshan and Connie De Vos at the iSLanDS centre in Preston (UK) were used. They were prepared to elicit lexical signs in particular semantic fields (nominal number, kinship and color terminology) and

to register the inventory of some grammatical constructions (e.g. possessive and existential constructions). The stimulus material consisted of different tasks, which were also performed by pairs of signers. A simplified version of the family tree task (Perniss & Zeshan, 2008) was used. One signer asked another signer about his/her family and the other responded without filling out a family tree chart. This task was used for elicitation of possessive constructions, possessive pronouns and various kinship terms, which are performed by pointing to different body parts. Additionally, the doctor-patient game was used (cf. Perniss & Zeshan, 2008). One signer (in the role of the doctor) inquired about the illness and the symptoms of the other signer (in the role of the patient). This task elicited constructions which make use of signing space in sign languages, such as predicative possessive constructions, first-, second- and third person pronouns, possessive pronouns, which are produced by pointing signs in YSL and will be elaborated on in the chapter 8. Additionally, it elicited the instances of spatial modifications of verbs, which will be considered in 9.

4.2.2.3. Translation from English and Djambarrpuyŋu

Despite various potential issues associated with using translations from the spoken languages in elicitation of sign language as reported elsewhere (Fischer, 2009, p. 11; Vermeerbergen, 2006, p. 173), translation from English and the surrounding spoken lingua franca (see chapter 3.4 for more information on the linguistic context of YSL) was chosen as elicitation technique for this study. There is support for this choice. In several studies on village sign languages reported so far "substantial influence from the surrounding spoken language(s)" (Zeshan, 2011a, p. 226) has been identified due to sociolinguistic settings (Nyst, 2007; Nonaka, 2011). In the case of alternate sign languages, the relationship with the surrounding spoken languages can be even more intense (cf. Kendon, 1987). Given these findings, it was important to explore the extent to which YSL signers were influenced by the structure and grammar of the surrounding spoken language, especially in the case where the use of space was expected in the visually gestural modality. Therefore, a native speaker was asked to read aloud the sentences in Djambarrpuyŋu (the surrounding spoken lingua franca) or/and in English, whereas the other participant was asked to sign these in YSL in front of the camera. This elicitation approach was possible exclusively with the hearing signers competent in YSL. Working with deaf informants, pictures and videos have been used.

4.3. Participants

A total of eight hours of unedited digital video footage of YSL signing was collected. The data was gathered from sixteen (hearing, hard of hearing and deaf) Yolngu signers, ranging in age from ten years to over sixty five years with an average age of approximately forty years old (see Table 4). Table 4 provides an overview of the participants' characteristics, the locations where data was acquired, date of fieldwork, signers' age, gender and hearing sensitivity.

Table 4. Participants' characteristics

Location	Year	Subject	Gender	Age	Deaf/Hearing
Darwin	2009	HG	female	late 50s	hearing
		RB	female	early 30s	hearing
Mapuru	2010	JŊ	male	early 40s	hearing
		LB	male	late 60s	hearing
Galiwin'ku	2010	JD	female	late 30s	hearing
		EB	male	late 20s	hearing
		MD	male	late 20s	hearing
		ER	female	late 30s	became deaf postlingually
		DT	female	late 40s	hearing
		EG	female	late 60s	hearing
		EM	female	late 40s	hearing
		WG	female	early 40s	deaf
		DM	male	early 60s	hearing
		LM	female	late 40s	hearing
		SY	female	early 40s	hearing
		RG	male	10 y.o.	deaf

Table 5 provides information about the distribution of the collected YSL data among the participants. It reveals how many minutes of spontaneous or elicited data come from each participant.

Table 5. Distribution of the YSL data[55]

Subject	Elicited data	Spontaneous data	Total
HG	85 min	5 min	90 min
RB	26 min	4 min	30 min
JD	8 min	10 min	18 min
LB	8 min	10 min	18 min
JD	15 min	5 min	20 min
EB	4 min	5 min	9 min
MD		5 min	5 min
ER	25 min	5 min	30 min
DT	10 min	10 min	20 min
EG	21 min	4 min	25 min
EM	20 min	12 min	32 min
W	18 min	3 min	21 min
DM	5 min	5 min	10 min
LM	10 min	14 min	24 min
SY	5 min	4 min	9 min
RG	8 min	2 min	10 min
	268 min	103 min	371 min

Almost all of the participants in the study identified themselves as Djambarrpuyŋu speakers, the dominant dialect of Elcho Island (see section 3.4 for information about the clan-related dialects of the Dhuwal dialect group). Additionally, two participants who live near Yirrkala (see Figure 10) and were visiting Galiwin'ku during the fieldwork in 2010 identified themselves as the speakers of Gumatj. There were various levels of English competence within the participants of this study.

Deaf or hard of hearing informants who used YSL as primary means of communication were selected along with hearing members of the community who used YSL to communicate with at least one of their family members. Previous studies in deaf village communities report, that hearing individuals with deaf family members are often the most fluent signers (Marsaja, 2008). Hearing Yolngu were included in the study, since they play an important role along with deaf members in the acquisition and transmission of YSL (see also Nonaka, 2007; Lanesman & Meir, 2012).

All participants have been informed about the methods and goals of this research. The help of the language assistant and consultant must be acknowledged here since her translation work was essential in providing information and obtaining consent from the participants.

Elaine L. Maypilama translated the written consent forms from English into both spoken *Yolngu Matha* (see 3.4 for more information about the spoken languages in the Yolngu region) and Yolngu Sign Language. The consent forms were developed following the standards of the German Science Foundation (Deutsche Forschungsgemeinschaft, DFG)[56] for projects working with human subjects and contained questions such as following:

- Do you understand what this project is about?
- Do you agree to participate in this project?

Since video was the primary means of data collection, signers consent had to be obtained in advance, as their anonymity could not be preserved. In only one case, a participant did not wish to be recorded. Therefore, written notes were used instead[57].

Furthermore, it was important to clarify, whether the signers agreed to have their videos shown or published in publications, databanks or websites. Besides questions typically used for various scientific projects with subjects conducted in Western societies, the cultural context, in which the data was obtained, needed to be taken into account. Thus, the following question was included in the consent forms given the strict restrictions on viewing images of the deceased in Yolngu communities:

- After you pass away, do you want us to remove your photo/video so no one can see it?

This question provided an option for the participant of removing their videos after they pass away. After the death in an Aboriginal community, the name of the dead usually cannot be spoken, the photographs of the dead (also films, video, or audio recordings) have to be either destroyed or placed securely out of sight for a specific amount of time, determined by the family (Deger, 2008). After this time, the display of these pictures can be allowed. This taboo on viewing images of deceased people might be explained by the cultural concern Yolngu have about relationships with their kin and country. The deceased are becoming "same" as ancestors; hence, their images are not appropriate or even dangerous to look at (Deger, 2008). Recently, it has been, however, argued for a slight reconsideration of perception of such images among Yolngu communities (Deger, 2008). The new practices, which are said to cohere with growing technological sophistication of Yolngu people,

show a drastic ease of traditional prohibitions, since family members decide to view and display the images of deceased people on particular occasions for grieving and remembering. The shift away from traditional rituals surrounding death was evident during my fieldwork trips in 2009 and 2010. About 70% of all participants have allowed unrestricted use of their videos and photographs in publications and websites or databases after their death. 33% (6 out of 18 participants) of the signers have imposed clear and definite restrictions surrounding the display and publication of their images after their death. Two of these participants stated that all their videos and images should not be displayed within one year after they pass away, one signer wished for 2 years of image display prohibition. Another three participants did not wish their images being shown after their death at all. Two of the latter signers were in their 20s and belonged to the youngest participants in this study, and seem not to approve of the new practice surrounding photos of the dead. This is interesting, since according to Peterson (2003), it is usually older people who are "not keen to see images of their dead relatives" (as cited by Deger, 2008, p. 298).

4.4. Data annotation

Digital video recorder was the essential tool for the fieldwork, as it allowed for easy editing of over eight hours of footage. The original footage was condensed to six hours and eighteen minutes with Adobe Premiere CS5, and further arranged into 28 separate AVI clips (see Appendix III for the list of the clips), which were then compressed with TMPGEnc into MPG1 and MPG2 for annotations. The individual clips range in length from 1 minute 20 seconds to 35 minutes (mean length of the annotated movie file is 13 minutes). There are 3955 signed tokens (occurrences), which can be boiled down to 688 types. All in all, the dataset consist of over 26,000 separate annotations across all tiers. The digitization of all video materials has been supported by the *Multimedia-Gruppe* of the RRZK (*Regionales Rechenzentrum*[58]) at the University of Cologne. All video files are archived at the University of Cologne with the support of RRZK. All data has also been sent for storage to the community administration at Galiwin'ku, Elcho Island.

The YSL data have been annotated and coded using digital video annotation software called ELAN (Eudico Linguistic Annotator)[59], which has been chosen for the following reasons: ELAN allows for the annotation of video data in unlimited number of tiers defined by the user, which is ideal for the purposes of sign language annotation. Since ELAN was developed

exclusively for linguistic purposes, the program permits the coordination of video source with its annotation, which is very beneficial for further data analysis. The software supports complex search functions (multi-tier and multi-file searches) in large data domains and allows one to edit, import and export the annotations and controlled vocabularies as text files. As the most widely used sign language annotation software in Europe, ELAN proved to be the ultimate tool for the purposes of this study. It is free and downloadable[60] from the Max-Planck Institute for Psycholinguistics website in Nijmegen, The Netherlands (http://www.lat-mpi.eu/tools/elan/).

Since sign language annotation conventions have not yet been uniformly developed (Konrad, 2010) and conventionalized and some existing transcription conventions maintain some problematic cases (Herrmann, 2008), no single method of annotation was employed in this study. However, to guarantee comparative analysis similar annotation methodologies were adopted here following mostly two sophisticated transcription conventions, namely the ECHO conventions (Nonhebel, Crasborn, & van der Kooji, 2004) and the guidelines used for the Auslan Corpus (Johnston, 2011). Figure 15 presents a snapshot of an open ELAN window showing the tiers which were used. Below is the description of these tiers.

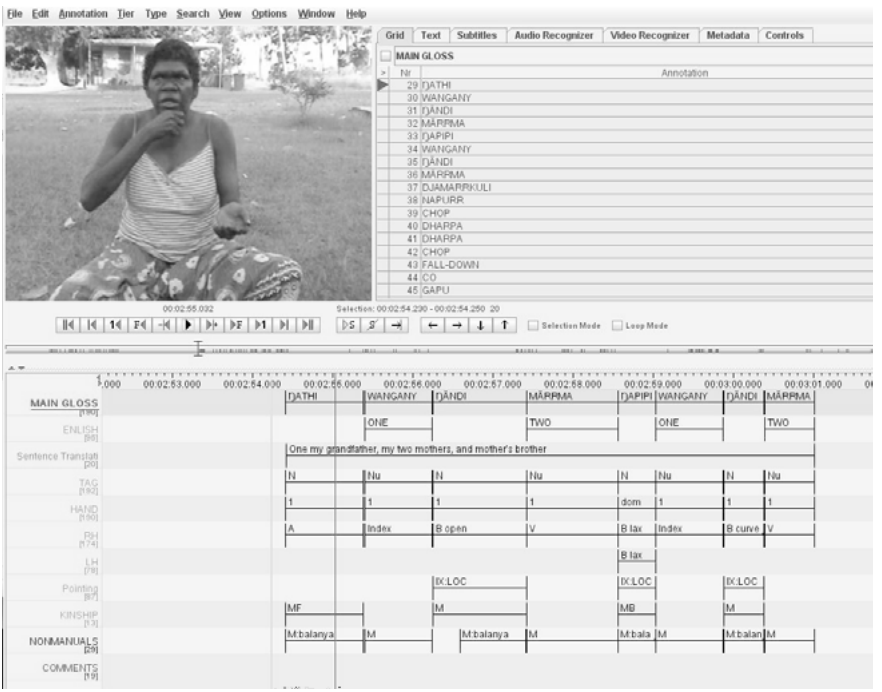


Figure 15. A snapshot of an open ELAN window

MAIN GLOSS identifies a lexical sign and is bound to the movement of the hands. Following the common practice in sign language literature, I use uninflected words of the surrounding spoken language, Djambarrpuyŋu, as glosses, which are used as label for signs. This tier does not serve as translation of a sign, since glosses do not represent the full range of meaning of a particular sign. Instead, they are simply used for identification of various signs. This tier glosses all manual signs produced with one or two hands. Following the practice in the Sign Language Typology Research Group at the MPI for Psycholinguistics in Nijmegen, the following symbols are used within this tier[61]: hyphenated glosses indicate that glosses consist of several words, e.g. WANDIRR-MUTIKA (DRIVE-CAR); + symbol (e.g. ONE+WEEK) indicates compounding.

ENGLISH contains an English translation equivalent of the main gloss.

SENTENCE TRANSLATION – contains free English translation. It is placed in annotation field time aligned with suitable parts of the signed text it refers to. It may mark different utterance units such as YSL clauses or sentences.

TAG – contains information about the morphosyntactic category of the sign units. Earlier studies suggest that some parts of the lexicon in sign languages are challenging from a theoretical point of view and therefore difficult to assign to a particular word class (Schwager & Zeshan, 2008). At the current stage of research, there is no commonly accepted description of word classes in a sign language. Different authors rely on different criteria for identifying word classes in sign languages: some researchers use semantic, syntactic and morphological criteria (Padden, 1988; Zeshan, 2000; Schwager & Zeshan, 2008), other researchers rely on phonological criteria (Supalla & Newport, 1978; Kimmelman, 2009). Having no commonly accepted criteria for the classification of word classes in sign languages, YSL signs were assigned to classes relying on the widest possible range of criteria including semantic ones. In cases where assigning a grammatical class category to an individual sign unit appeared to be disputable, this tier was left empty. This tier uses specific controlled vocabulary, a limited set of choices for options such as verb (V), noun (N), adjective (Adj), adverb (Adv), question word/marker (WH) and etc. These choices appear in a drop-down menu and can be easily entered into an annotation field to help the annotator avoid errors. These abbreviations are added to the controlled vocabulary attached to this tier and can be altered by the author as needed.

HAND- encloses information about the phonological properties of the sign from the point of view of articulatory complexity: one-handed or two-handed sign. Additionally, given the different types of two-handed signs, this tier reveals whether the two hands share the same handshape and move simultaneously or in alteration according to Battison's Symmetry Condition (1978, pp. 33–35) and in this case the sign is interpreted as SYM on this tier. In an alternative case, one hand of a two-handed sign may be passive and mostly serve a location while the active or the dominant hand articulates the movement. In that case, the hands usually do not share the same handshape and the sign is marked as DOM in accordance with the Dominance Condition (Battison 1978, pp. 33–35).

RH – defines the handshape of the right hand, which is assumed to be signer's dominant hand in two-handed signs[62]. This tier also uses specifically created controlled vocabulary, a limited set of choices for values such as flat handshape (B), index handshape (IX), etc. (see Attachment for the precise handshape specification used in the gloss annotations of this study).

LH – represents the handshape of the left hand. In two-handed signs with the two hands sharing the same handshape, the handshape of the signer's left hand is reduplicated on this tier.

POINTING – defines all instances of pointing with the widely accepted abbreviation IX (for 'index'), which can be made with different handshapes, e.g. ☝ or ☝ handshape, an outward movement of the arm or with lips toward some aspect of the immediate real-world environment, a nearby object, the signer's body, the addressee, a referent or to an empty location in space. The index signs are initially identified and appear as IX in the TAG tier (cf. Figure 15) regardless of the handshape used. This tier was created to account for multiple pointing signs with different functions in the YSL data corpus. When interested in any kind of pointing, one can search for IX, however to analyze the instances of locative pointing only, one should search for IX: LOC in this tier. These additional specifications were added as controlled vocabulary to this tier with regard to its function. The ECHO project suggests using the glossing IND (for index or indexical) for any kind of pointing signs without distinguishing pronouns, articles or locatives (Nonhebel, Crasborn, & van der Kooji, 2004). Such annotation of pointing signs without any detailed distinction appeared insufficient for this study. For that reason, the annotation labels for pointing signs were adopted from Auslan Corpus annotation guidelines (Johnston, 2011), without assuming any particular theoretical framework of index sign prior to the annotation of the collected data.

Following labels of additional specification were used in this tier (but see notation conventions for pointing signs in this study):

IX	indicates a general class of deictic/pointing signs and was usually used when the grammatical meaning of a particular pointing sign could not be clearly identified
IX:PRO	a sign that points to a referent, i.e. the pointing action intends to identify a participant, not the location of the participant.
IX:LOC	a sign points to a location, i.e. the pointing action intends to identify a location, not a participant at a location. Thus it may function as a locative adverb or locative predicate (e.g. 'here', 'there').
IX:PRO/LOC	a sign that points to a referent and a location, i.e. the pointing actions seems to mean both equally. It appears impossible to separate either of these two meanings (e.g. "it there", "he over there").

KINSHIP – denotes the kin terminology of a given YSL sign. Given the complex system of Yolngu kin classification, English translation for the kinship terms might appear confusing. Therefore, more specific descriptions of the kin terms were necessary to account for in the transcription of the YSL data. Conventions employed in anthropological publications (such as Scheffler 1978; Parkin 1997) were used to represent Yolngu family relationships using single or juxtaposed upper case initials. The examples for such description are: MB for mother's brother, FZH for father's sister's husband or MBW for mother's brother's wife.

NONMANUALS – comprises information about the nonmanual actions such as facial expressions, head movements, body postures and mouth actions, which convey linguistic messages during the production of the manual sign. This tier is an independent tier allowing for the possibility that a nonmanual marker associated with a sign begins or ends after or before the production of the manual sign. It allows, moreover, the annotation of nonmanual spreading behavior, which has been documented earlier in the literature for various sign languages especially in the studies concentrating on mouth actions (cf. Crasborn et al., 2008). The following nonmanual behaviors were coded: mouthing, mouth gesture (*mg*), raised or lowered eyebrows (*re* or *le*), head nod (*hn*) and head shake (*hs*) etc. (see notational conventions). The abbreviations used for annotation were chosen following the guidelines for the

ECHO project taking in account some improvement suggestions made by Herrmann (2008, p. 72). This tier has been most useful to annotate the eye gaze behavior during the production of pointing signs.

DJAMBARRPUYŊU – provides Djambarrpuyŋu translation of the YSL clauses.

COMMENTS – entails miscellaneous remarks and observations.

Spontaneous data, which totals one hour and eighteen minutes (28% of the YSL data, see Table 3) were first glossed in Djambarrpuyŋu and were afterwards translated into English during the fieldwork with the help of Elaine L. Maypilama, senior researcher, who has also translated some of the elicited data into Djambarrpuyŋu. Further translation of elicited data into English was however completed by the author with the aid of a Yolŋu-Matha dictionary (Zorc, 1986), after spending a considerable amount of time mastering the fundamentals of Djambarrpuyŋu and YSL. All transcriptions and annotations of the data were made by the author.

Part III

Selected Aspects of YSL Grammar

In this part of the book, selected aspects of YSL grammar will be discussed. It is clear that numerous grammatical phenomena do not receive a discussion here, but providing a detailed description of YSL grammar is beyond the scope of this book. Selected phonological (see chapter 5) and syntactic phenomena (see chapter 6), which have received a considerable amount of attention within the sign language research and were attested in the available YSL data are presented in the following and compared cross-linguistically as well as cross-modally. The morphospatial aspects of the YSL grammar are not taken into consideration in this part. The spatial morphological processes present the core of the study and will be discussed in some detail in chapters 7–11. This part consists of two chapters. Chapter 5 deals with the phonological aspects in YSL grammar. Chapter 6 is dedicated to two syntactic aspects, namely negation and interrogatives.

Chapter 5
Phonological aspects

This chapter is concerned with the sub-lexical structure of YSL. This chapter presents first insights into some selected phonological structures of this language without intending to provide an exhaustive account of YSL phonology.

The chapter is structured around the four selected domains – including i) the parameter of handshape, ii) the parameter of location, iii) the sign types and iv) the use of nonmanual marking. All four domains have been chosen because they are likely to be interesting from a cross-linguistic perspective. Throughout this study, the YSL findings will be compared to what has been observed in other sign language types (DCSLs, emerging, alternate or shared sign languages). Section 5.1 focuses on the major manual parameter of handshape, where the marked and unmarked handshapes are described. YSL patterns with other shared sign languages not only in the number of phonetic handshapes, but also in proliferation of locations and the size of the signing space. In the section on the YSL sign types (see 5.2), I discover a striking feature of YSL, the preference for one-handed signs. The final section (5.3) shows that YSL makes an extensive use of nonmanual marking, such as mouth actions, against the expectations, based on the earlier research on alternate sign languages (Kendon, 1988; Bakker, 2012b).

5.1. Handshapes

Signs are comprised of four major phonological formational categories: hand configuration, location (sometimes also referred to as place of articulation), movement (how the articulators move) and nonmanual markers (what other articulators besides the hands (face, body) are doing)[63]. Hand configuration is divided into two main subcategories: handshape and orientation (how the hands are related with respect to location) (Sandler & Lillo-Martin, 2006). Examples below (see Figure 16) exemplify that these categories contain contrastive features. Similar to the minimal pairs found in spoken languages, such as the two English words ‘pin’ and ‘bin’ that differ only in their onset consonant, signs might differ in only one of these aspects of their production (Battison, 1995).

Figure 16 shows the signs MIYAPUNU ‘sea water turtle’ and LATJU ‘young, beautiful, nice’, which are distinguished by two handshapes, and . As

MIYAPUNU ‘sea water turtle’ vs. LATJU ‘young, beautiful, nice’

Signs distinguished by handshape feature

WAƊA ‘talk, speak, say’ ƊHIƊKIƊ ‘think’

Signs distinguished by location feature

MAPURU ‘Mapuru’ NHE ‘you’

Signs distinguished by movement feature

__bäpi *_teacha*

BÄPI ‘snake’ BÄPI ‘teacher’

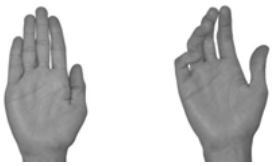
Signs distinguished by nonmanual parameter

Figure 16. Phonologically distinguished minimal pairs in YSL

location and movement are similar in these two signs, they represent a minimal pair in YSL. Similarly, the YSL signs WAƉA 'talk, speak, say' and ƊHIƉKIƉ 'think' (Figure 16) are minimal pairs distinguished by the feature of location (the lower lip vs. the right temple respectively). The third minimal pair of signs DARWIN and NHE 'you' is distinguished by movement alone (straight and arc movement respectively), whereas the handshape and location stay the same. The fourth minimal pair is distinguished solely by mouthing of the word *bäpi* or *teacher* (see 5.3 for information about the nonmanual parameter), whereas the manual components of the signs are identical.

The preliminary analysis of YSL handshapes identifies the use of at least 33 phonetic handshapes (see Appendix I for illustration of all handshapes identified in the YSL data corpus). It is evident, that the set of phonetic handshapes in YSL is relatively small, if compared to DCSLs such as NGT with 70 phonetic handshapes (van der Kooij, 2002) or Auslan with 62 phonetic handshapes (Johnston & Schembri, 2007). Thus, sign languages may vary with respect to the number of handshapes found in the repertoire, similar to spoken languages varying in number of phones, discrete meaningless elements. Interestingly, all shared sign languages investigated to date such as PROVISL, AdaSL, KK or IUR report a rather small set of phonetic handshapes (Washabaugh, 1986; Nyst, 2007; Marsaja, 2008; Schuit, 2012) (see chapter 12 for a discussion). Kendon (1988) distinguished 41 contrastive handshapes, but not all of these were shared by all of the NCD sign languges he studied. More detailed comparison between YSL and NCDSLs in this respect thus appears to be very useful.

It is quite likely that a set of phonemic handshapes in YSL compiled on the basis of contrastiveness will be considerably smaller than 33 handshapes. Many of the 33 handshapes (see Appendix I) should rather be considered allophones of the same phoneme and not separate phonemes. This is particularly true for handshapes that differ in realization: lax vs. tense realization as shown in Figure 17. However, a more in-depth contrastive phonological analysis remains to be undertaken to reveal whether such handshapes are phonemes of YSL or variant handshapes, which differ non-contrastively from each other.



B Blax

Figure 17. Tense vs. lax realization of two YSL handshapes

As shown in one minimal pair in Figure 16, YSL signs can be distinguished by the handshape feature. Nevertheless, considerable variation in handshape was noticed in different YSL tokens of the same sign used by the same signer. One example is shown in Figure 18. The variant in (a) is articulated with the 𓂝 handshape, the variant in (b) is signed with the Blax (see Figure 17) handshape and the variant in (c) is produced with the 𓂧 handshape. Data additionally show that it is also possible to sign GAPU 'water' with the 𓂋 handshape, which is not represented in Figure 18.

(a) (b) (c)

Figure 18. Variation in handshape in YSL tokens for GAPU 'water'

5.1.1. Basic handshapes

Previous research on sign language phonology (Battison, 1978; Klima & Bellugi, 1979; Sandler & Lillo-Martin, 2006) identifies that certain handshapes are more marked[64] than others. The less marked handshapes in a sign language are referred to as basic or unmarked handshapes, which are found as being:

(1) the most frequently occurring of all handshapes across different signs;
(2) used by the non-dominant hand in non-symmetrical signs according to the *Dominance Condition*;
(3) the first to be acquired by children;
(4) universal, i.e. found in all natural sign languages described so far;
(5) "maximally distinct, basic geometrical shapes";
(6) the easiest to articulate (so that aphasics make fewer errors articulating these handshapes) (Battison, 1978).

In the following subsections, I will mainly draw upon the criteria (1)–(2) in order to identify the basic handshapes in YSL. Thus, I focus on the most frequently occurring handshapes in the data and those used by the non-dominant hand in non-symmetrical signs.

5.1.1.1. Token frequency

According to the frequency criterion in (1) above, eight the most frequent handshapes have been identified in the YSL corpus (see Figure 19). These are (Index), Blax[65], (Bopen), (Bcurved), (A), (B), (5) and (V) handshapes. As can be seen in Figure 19, these eight frequent handshapes account together for 98% of tokens (n=3955). Other handshapes occurring in the data account for only 2% of all signed tokens in the YSL data corpus.

According to the results presented in Figure 19, is the most frequent handshape accounting for 27% of all YSL tokens in the data. The handshape is consequently the least frequent one occurring in only 2% of all YSL tokens of the collected data.

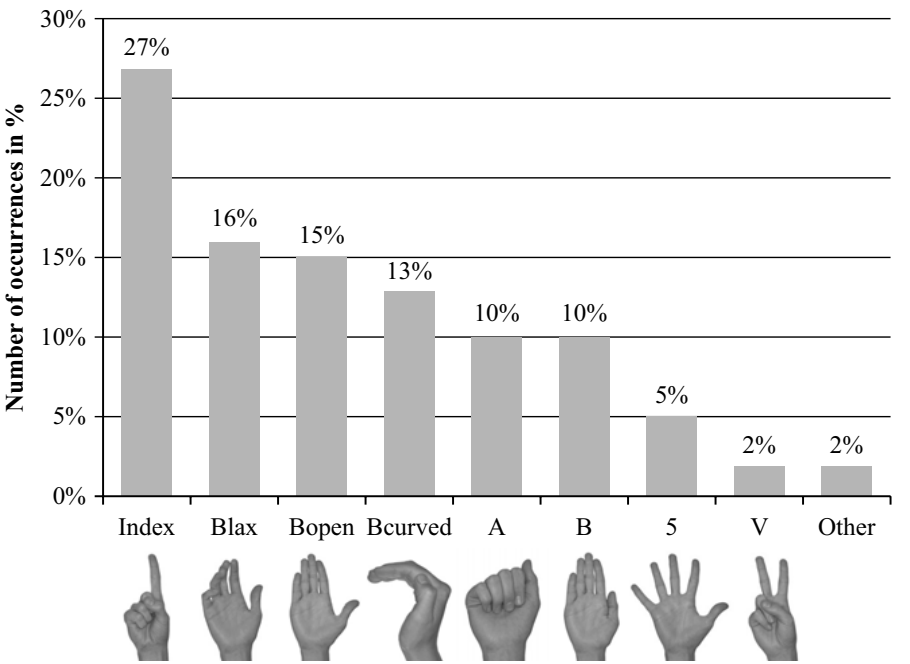


Figure 19. Relative frequency of the phonetic handshapes based on tokens (n = 3955)

5.1.1.2. Type frequency

The analysis based on the YSL sign types[66] (n=688 signs) shows that the majority of the YSL signs (94 %) in the corpus are produced with one of the eight handshapes in the following order: (Index), (Bopen), (B), Blax, (A), (Bcurved), (5) and (O) handshapes.

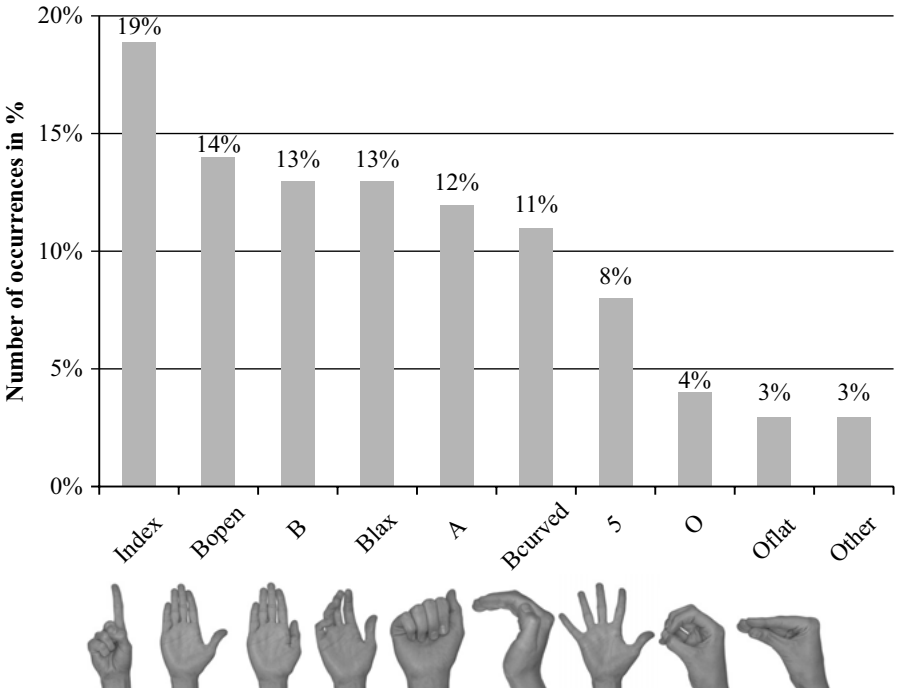


Figure 20. Relative frequency of the phonetic handshapes based on types (n= 688)

5.1.1.3. Non-dominant hand frequency

On the basis of the second criterion presented in (2) above (use by the non-dominant hand in non-symmetrical signs according to the *Dominance Condition*), the seven following handshapes were identified (see Figure 21). The handshapes Blax, (A), (Bopen), (Index), (5), (C) and (O) were used most often by the non-dominant hand in non-symmetrical signs in the YSL data corpus (see 5.2 for the information about the two-handed YSL signs).

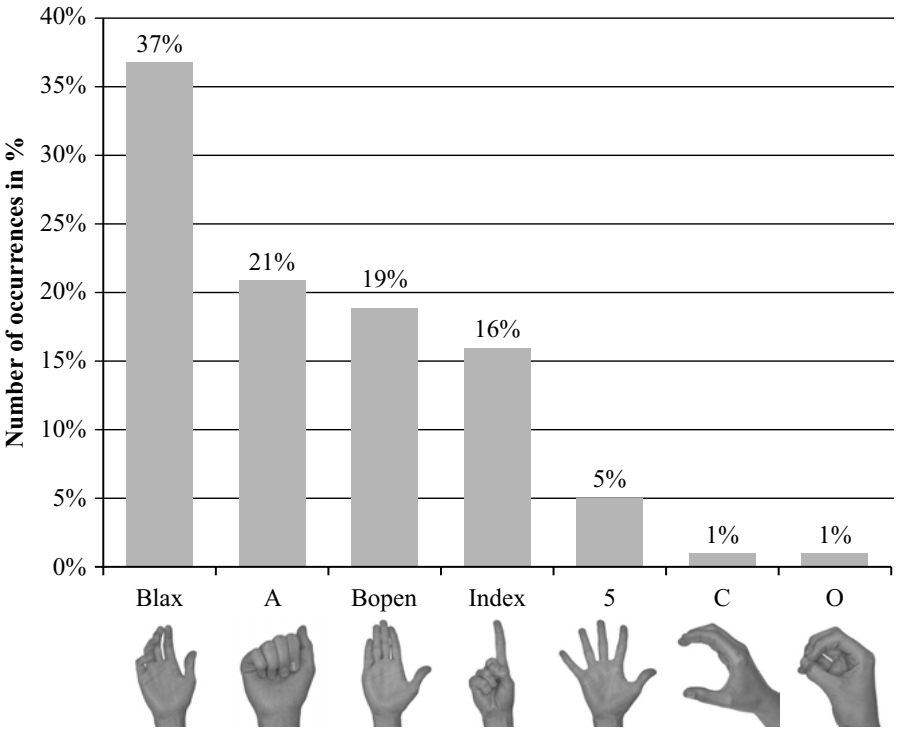


Figure 21. Relative frequency of the handshapes of the non-dominant hand in two-handed YSL signs (n=109)

No information on the acquisition of YSL is yet available, so criterion (3) as well as further criteria (4)–(6), cannot be applied to YSL in this study for identification of basic handshapes. Thus, based on the first two criteria, the following four handshapes can be regarded as the unmarked or basic ones in YSL: ☝ (Index), Blax, 👆 (Bopen) and ✊ (A).

However, the number of the above proposed four unmarked handshapes in YSL can be further limited to three basic handshapes in YSL (see Figure 22). This follows from the fact that the handshapes ✋ (B), Blax and 👆 (Bopen) were very difficult to differentiate from each other during the transcription. The analysis suggests that these three handshapes should be rather considered as allophones, i.e. variants of the same handshape rather than three separate handshapes. Various YSL sign tokens of the same type can be found in the data with Blax as well as with 👆 (Bopen) or ✋ (B) handshape. The distinction between these three handshapes is, therefore, not phonemic but allophonic, i.e. not lexically contrastive as there is no minimal pair in which the three handshapes could contrast. Based on this observation, I conclude

that the following three handshapes shown in Figure 22 can be identified as basic in the available YSL data.

Figure 22. Basic handshapes in YSL

Current findings provide evidence for a set of these three basic handshapes in YSL based on such parameters as frequency and the shape of the non-dominant hand in two-handed signs.

For ASL and ISL the following set of unmarked shapes based on the same properties is reported: (Sandler & Lillo-Martin, 2006, p. 161). Battison (1978) additionally considers handshape as an unmarked shape. For BSL the most basic handshapes are (Sutton-Spence & Woll, 1999, p. 162). The following six basic handshapes were identified for KK: (Marsaja, 2008; De Vos, 2012, p. 80). As one can see, there is a variation in the quality and quantity of the proposed basic handshapes across various sign languages. One notices however, that (C) and (O) handshapes are relatively infrequent in YSL (see Figure 21) if compared, for example, to ASL or BSL. Similar findings have been reported for AdaSL (Nyst, 2007). These hand configurations are often used in Western DCSLs as initialized handshapes, i.e. handshapes taken from the hand alphabet for letters C and O. Given that many village signing communities lack school education for the deaf (see section 2.3 for the sociolinguistic context of village sign languages), the influence from the written language is less apparent in these sign languages. Thus, the scarcity of manual alphabet handshapes such as (C) and (O) appears to be a structural similarity among many shared sign languages.

5.1.2. Marginal handshapes

The previous section shows that some handshapes in YSL are very frequent in the corpus and, thus, can be considered more basic or unmarked than the others. This section displays some less frequent handshapes. The majority of these handshapes account for 2% of all YSL tokens in the data corpus (see Figure 19). A sample of infrequent handshapes is depicted in Figure 23 below (see Appendix I for more infrequent handshape illustrations).

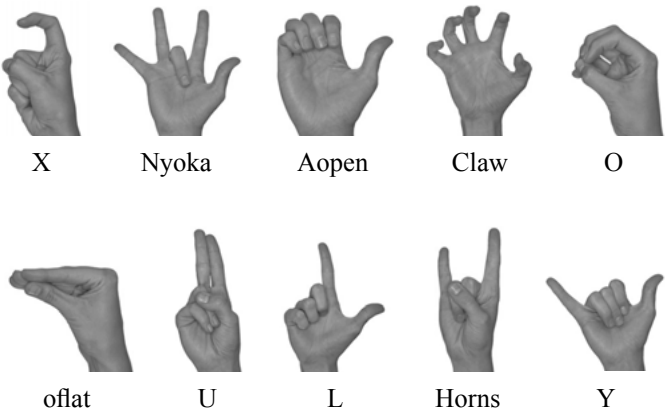


Figure 23. Infrequent YSL handshapes

Some of these handshapes, including handshapes referred to as X, Nyoka, Aopen and Claw occur in less than one percent of all the YSL signs in the data collected for this study. This small percentage reflects the fact that each of these handshapes occurs only in one particular sign in the dataset[67].

Handshape X, for example, occurs only in the sign WARRNYU 'flying fox' shown in Figure 24.

Figure 24. The YSL sign WARRNYU 'flying fox'

The handshape Nyoka is used exclusively in NYOKA 'crab' as depicted in Figure 25, the handshape Aopen is only produced in WÄYIN 'fresh-water-turtle' and the handshape (Claw) occurs in the sign DHIŋGA 'to die' (see

Figure 25). These handshapes may be considered marginal or marked but still relevant to the phonological system because they occur in the core lexicon of YSL.

NYOKA ‘crab’ WÄYIN ‘fresh-water-turtle’ DHIŋGA ‘to die’

Figure 25. Three infrequent YSL handshapes

Other infrequent handshapes in the data corpus were only found in number signs. Such number-related handshapes presented in Figure 26 are referred to here as 2, 3, 3reverse, 4, 4open, I and W handshapes.

2 3 3reverse 4 4open I W

Figure 26. Number-related handshapes in YSL

5.2. Sign types: preference for one-handedness

This section describes the YSL sign types and demonstrates YSL’s adherence to phonological constraints governing two-handed signs (such as Symmetry & Dominance Conditions). Moreover, this section shows that YSL is quite peculiar with regard to the frequency of non-symmetrical two-handed signs.

Signs are distinguished by use of one versus two hands. Compare a one-handed YSL sign MIYALK ‘woman’ with a two-handed sign YOTHU ‘child’ (cf. Figure 27).

MIYALK ‘woman’ YOTHU ‘child’

Figure 27. One-handed versus symmetrical two-handed YSL sign

Battison’s (1978) typology of sign types was originally based on ASL phonology but it was found to be relevant to the phonologies of other sign languages as well. All four sign types described by Battison (see (1)) were also found in the YSL data.

One-handed signs such as MIYALK ‘woman’ represent Type 0 (Battison, 1978). Whether a one-handed sign is performed with the right or left hand does not appear to have an impact on its intended meaning. The variance from right to left-hand use of Type 0 signs is only dictated by the signer’s preference, and characteristically signed with a dominant hand.

Since the early days of the sign language research (Stokoe, 2005 [1960]), the two-handed signs were considered more complex. Three types of two-handed signs are distinguished in the sign languges literature based on the Symmetry and Dominance constraints formulated by Battison (1978):

> *The Symmetry Condition* states that (a) if both hands of a sign move independently during its articulation, then (b) both hands must be specified for the same handshape, the same movement (whether performed simultaneously or in alternation), and the specifications for orientation must be either symmetrical or identical.
>
> *The Dominance Condition* states that (a) if the hands of a two-handed sign do not share the same specification for handshape (i.e., they are different), then (b) one hand must be passive while the active hand articulates the movement and (c) the specification of the passive handshape is restricted to be one of a small set: A, S, B, G, C, O.
>
> (Battison, 1978, pp. 33–35)

As listed in (1) below, the two-handed signs are organized into three types according to their complexity.

(1) Battison's four types of signs
- Type 0: one-handed signs – e.g. MIYALK 'woman'
- Type 1: two active hands with the same handshape performing the same movement – e.g. YOTHU 'child'
- Type 2: two-handed signs with one dominant and one non-dominant hand, both with the same handshape – e.g. GUn̲d̲A 'rock, stone'
- Type 3: two-handed signs with a dominant and non-dominant hand, each having a different handshape (according to the Dominance condition) – e.g. RRUPIYA 'money'

In Type 1 as in sign YOTHU 'child' (see Figure 27) both hands are active and equally dominant[68]. I call these signs here *symmetrical* signs[69]. Type 2 and Type 3 signs as shown in Figure 28, in which only the dominant hand functions as articulator, are referred to as *non-symmetrical* signs here (see Figure 29). Thus, for preliminary examination of YSL sign types, I chose to focus on two types: symmetrical and non-symmetrical ones (see Figure 29 below).

GUn̲d̲A 'rock, stone'

RRUPIYA 'money'

Figure 28. Two-handed signs in YSL

The finding worth highlighting is the uneven distribution of one-handed vs. two-handed signs in the YSL data corpus. As can be seen in Figure 29, the majority of all YSL signs (66%) were articulated with one hand (Type 0 signs), while approximately only a third of all YSL signs (34%) were

performed with both hands (i.e. Type 1, Type 2 and Type 3). The preponderance of one-handedness was also noticed by Kendon (1988) as he studied NCDSLs.

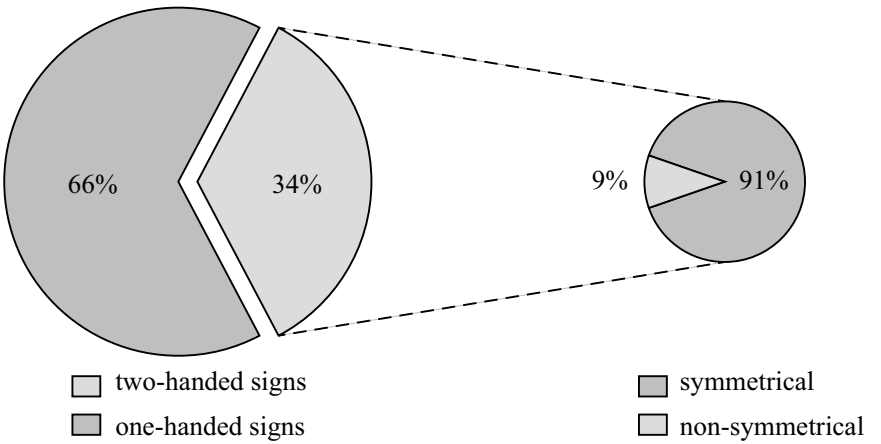


Figure 29. Relative frequency of sign types in YSL (n=3955)

A propensity toward one-handed signs in YSL is striking as compared to Deaf community sign languages. The recent survey of BSL lexicon reveals, for example, that "there are many more two-handed signs than there are one-handed signs" (Sutton-Spence & Kaneko, 2007, p. 290)[70]. While in YSL, 66% of all signs are one-handed and 34% of all signs are two-handed signs (see Table 6 for comparison), in BSL lexicon, the researchers observed percentages, which present the mirror image of this YSL finding: one-handed signs – 37%, two-handed signs – 62%[71].

Table 6. The percentage of one vs. two-handed signs in YSL and BSL

	YSL	**BSL**[72]
One-handed	66%	37%
Two-handed	34%	62%

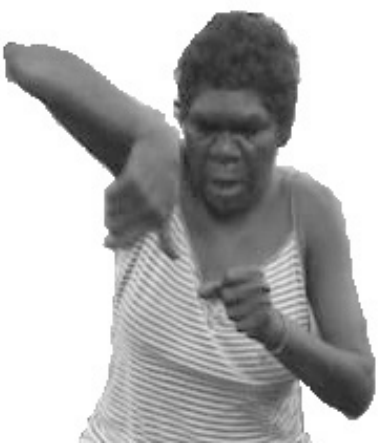
In my analysis of the YSL data, the majority of the two-handed signs (91%) were symmetrical signs as in the example YOTHU 'child' (see Figure 27). Only 9% of all two-handed YSL signs were identified as non-symmetrical. A comparison shown in Table 7 reveals that while in BSL only the half of the analyzed signs are symmetrical, in YSL symmetrical signs clearly outnumber the non-symmetrical ones.

Table 7. The percentage of symmetrical two-handed signs in YSL and BSL

	YSL	**BSL**
Symmetrical	91%	53%
Non-symmetrical	9%	34%

It is worth mentioning that in 90% of all non-symmetrical two-handed signs in YSL (cf. Figure 29), the non-dominant hand functions as a place of articulation as in RRUPIYA 'money' (cf. Figure 28). There is only a handful of two-handed signs in which the non-dominant hand does not function as the place of articulation as in the sign OPEN-CL:BOTTLE in Figure 30. Such signs are all polymorphemic, where both hands appear to articulate signs independently. Similar signs have been found in other sign languages and have been termed elsewhere as *two-hand complexes* (Schmaling, 2000).

In summary, more than a half of the YSL signs are performed with one hand (66%). If the sign is two-handed, it is very likely to be a symmetrical sign, in which the non-dominant hand has the same handshape as the dominant hand and moves either in similar (as in YOTHU 'child' in Figure 27) or in alternating pattern (as in the sign WARRNYU 'flying fox' in which both hands move up and down in alternating manner, Figure 31). In case of non-symmetrical two-handed signs, the non-dominant hand in YSL is most likely to serve as a place of articulation only as, for example, in the sign RRUPIYA 'money' (see Figure 28).



OPEN-CL:BOTTLE

Figure 30. A two-handed sign in YSL

WARRNYU 'flying fox'

Figure 31. Two-handed symmetrical alternating sign in YSL

In his analysis of NCD sign languages, Kendon (1988, p. 113) states that over 80% of all signs are one-handed. Based on this unimanual character of these sign languages, he puts these alternate sign languages in stark contrast to DCSLs exemplified by ASL, in which the distribution of one vs. two-handed signs is balanced. The findings from YSL presented here (cf. Figure 29) do show a tendency towards one-handed signs, as compared with other sign languages documented so far. In BSL, as already discussed, more two-handed than one-handed signs were observed accounting for 62% of all lexical signs in the dictionary (Sutton-Spence & Kaneko, 2007). In AdaSL and NGT one vs. two-handed signs are distributed equally: 52% - one-handed vs. 47 % two-handed in AdaSL; 54% one-handed vs. 46% two-handed in NGT (Nyst, 2007, p. 68). Although the picture is not as clear as the one presented by Kendon (1988), the results of my analysis display a general preference of YSL towards one-handed signs and symmetry in sign types. Few cases of *Weak Drop*, one-handed realization of a two-handed sign (Padden & Perlmutter, 1987; Brentari, 2007), were observed in the available YSL data and if counted do not change the numbers based on the tokens presented above in a significant way. An example of a *Weak Drop* in YSL is shown in Figure 32. The underlying form of the sign YOTHU 'child' is two-handed, as shown in Figure 27. Only 4% of the tokens of this type in the data were articulated with one hand due to the assimilation to a one-handed environment or due to some extra-linguistic reasons[73].

Figure 32. An example of a weak drop in YOTHU 'child'

Hence, the data shows a clear preference of YSL towards one-handed signs. At this stage of research, no well-developed theoretical arguments can be offered to explain why this appears to be the case. It is interest to note that YSL patterns with other alternate sign languages such NCDSLs (Kendon, 1988) and Ts'ixa Hunting Sign Language observed in Africa (Fehn & Mohr, 2012), in which more than 80% of analyzed signs are one-handed.

5.3. Nonmanual markers

Nonmanual markers in sign languages are by definition any actions produced by a wide range of articulators other than hands: the head and the upper part of the body, the face including the mouth actions, the eyes, the eyebrows, the cheeks, the head and the shoulders (Herrmann & Steinbach, 2011). Recent sign language research shows that the nonmanual components[74] in sign languages express a wide range of functions on the following linguistic levels: phonological, prosodic, lexical, morphosyntactic, semantic, pragmatic and discourse levels (Boyes-Braem & Sutton-Spence, 2001; Neidle, et al., 2000; Zeshan, 2004ab; Crasborn, et al., 2008; Dachkovsky & Sandler, 2009; Pfau & Quer, 2010; Herrmann & Steinbach, 2011, among many others). Nonmanuals may mark adverbial modification, sentence types (declarative, interrogative, imperative or conditional), reported speech, negation, indicate structural units such as topic and focus, and express agreement or modify a noun. There is a general agreement in the sign language literature that nonmanual markers represent an integral part of the grammatical system of signed languages and some of them can be compared to intonation in spoken languages (Dachkovsky & Sandler, 2009; Pfau & Quer, 2010).

The use of nonmanuals in YSL is especially interesting since other elaborate alternate sign languages have been claimed to make little or almost no use of nonmanual parameter (see Kendon, 1988, pp. 97, 100, ff. for NCDSLs and Bakker, 2012ab for PISL). This section examines a few examples of the range of nonmanuals that are available to the YSL signers and shows that they play an important role in sign production. I will focus on the lexical and grammatical functions of nonmanual markers in YSL.

5.3.1. Mouth gestures

Nonmanual components are recognized as an integral, formative part of certain signs in sign language. In such cases, a nonmanual is a part of the

sign's phonological description just as other phonological formational categories of hand configuration, location and movement (see section 5.1 for explanation) (Pfau & Quer, 2010, p. 2). In the Israeli Sign Language example in Figure 33, a nonmanual marker is phonologically significant: the sign AWESOME is accompanied by the obligatory facial expression (furrowed/squinted eyes and pursed lips).

Figure 33. ISL sign AWESOME[75]

Similarly, a number of YSL signs are obligatorily accompanied by a nonmanual marker. For example, the YSL sign MÄNA 'shark' as shown in Figure 34 is always accompanied by a repetitive headshake and a protruded tongue.

MÄNA 'shark'

Figure 34. Nonmanual in the YSL sign MÄNA

YSL signs that never occur without a particular nonmanual are for example the ones shown in Figure 35.

mg:pf
GAPU 'water'

mg:teeth
ŊARALI 'cigarettes, to smoke'

mg:open mouth
ŊATHA 'food'

mg:blowing air
GURTHA 'fire'

Figure 35. YSL mouth gestures

Signs shown in Figure 35 are articulated with accompanying mouth actions, commonly referred to as mouth gestures (Boyes-Braem & Sutton-Spence, 2001). Mouth gestures are considered to be unrelated to the surrounding spoken language and are organized into three subtypes according to their properties such as: adverbials, echo phonology and enaction (Crasborn, et al., 2008; Woll, 2009).

In previously studied alternate sign languages no use of mouth gestures has been reported. In NCDSLs, this has to do with the immobilization of the mouth (Kendon, 1988). A Warlpiri woman observing the speech taboo does, however, accompany her signing with characteristic kind of "grunting", which seems to imitate certain emphasis uses of voicing in speaking. A kind of grunted or "hummed" prosody may be heard while signing.

In YSL, mouth gestures are used quite frequently. An example of an adverbial mouth gesture in YSL is shown in Figure 36. The mouth expression

specifies adverbial information (manner and degree) to indicate that the object is small.

_mg:pursed lips
NYUMUKUNINY 'small'
Figure 36. An adverbial mouth gesture in YSL

Examples of an enacting mouth gesture in YSL are an open mouth in the sign ŋATHA 'food' or blowing of air in GURTHA 'fire' (see Figure 35), where the mouth actions perform the 'eating' and 'air blowing' actions respectively. In echo phonology, the mouth gesture echoes the hand actions "in terms of onset and offset, dynamic characteristics and direction and type of movement" (Woll, 2009, p. 210). No such mouth gesture has been identified in the YSL dataset. Consider a frequently cited BSL sign DISAPPEAR in Figure 37 for an example of an echo phonology mouth gesture.

BSL sign DISAPPEAR
Figure 37. Echo phonology mouth gesture in BSL[76]

In this case (cf. Figure 37), the "manual components of the sign (a closing movement and abrupt final stop) are echoed on the mouth by an inter-dental fricative followed by a bilabial stop" (Crasborn, et al., 2008, p. 49).

5.3.2. Mouthings

Mouthings are the second type of mouth actions, which has its origin in the surrounding spoken language (Boyes-Braem & Sutton-Spence, 2001). Mouthings are the movements of the mouth corresponding to the spoken word of the surrounding language. For example, consider the DGS sign BRUDER 'brother' shown in Figure 38, which is accompanied by a silent or voiced articulation of the German word *Bruder*. In this example, mouthing disambiguates this sign from the manually identical sign SCHWESTER 'sister'.

Figure 38. DGS sign BRUDER 'brother'[77]

In YSL mouthings also possess an important disambiguation function. The sign for 'snake' and 'Balanda' have identical manual components and are distinguished from each other only by the mouthing *bäpi* and *balanda* respectively (see Figure 16).

Mouthings in YSL appear to substitute lexical variation in Wh-questions (see 6.2 for information about Wh-questions in YSL). YSL has a minimal question word paradigm with a single general question sign similar to IPSL (Aboh, Pfau, & Zeshan, 2005). Various wh-question words in YSL are distinguished by mouthings (see also Meir (2004) for the same function of mouthings in ISL).

There is considerable variation in the use of mouthings between different signers of a particular sign language and different sign languages in general. In

IPSL, women are said to generate more voiced mouthings than men (Zeshan, 2000, p. 43). Pfau and Quer (2010) attribute the frequency of mouthings to a subject's exposure to the spoken language. Their claim is supported by my analysis of the YSL data. Hearing YSL signers tend to use much more (voiced) mouthings than deaf signers. One deaf signer (10 year-old boy), who participated in this study, used almost no mouthing in his signing. As he has just started going to school, this observation implies that education has a significant impact on the use of mouthings (Pfau & Quer, 2010). An obvious difference between hearing and deaf YSL signers is the use of the inflected mouthings by the former participants of the study. As shown in (1) during the sign production, spoken words are produced with their own morphology, i.e. case suffixes[78].

(1)

yothu	*galkirrin*	*mutikaŋur*	[YSL]
YOTHU	GALKIRRI	MUTIKA	
child	fall-down	car	

'A child fell from the car'.

Sequence13_G_sentences_2009.mpg

The use of inflected mouthing is reportedly not infrequent in DCSLs such as ASL (Emmorey, Borinstein, & Thompson, 2005). Such bimodal utterances, i.e. utterances including both speech and signing, frequently appear in the YSL corpus. A high proportion of such 'composite utterances' has also been observed in other alternate sign languages (Kendon, 1988, p. 298, ff.; Green, Woods, & Foley, 2011, p. 78). At the same time, (voiced) mouthings accompanying YSL signs are not necessarily words from the surrounding spoken language with the corresponding meaning. As shown in (2), in many intances mouthings of words *balanya* or *bitja* are produced, which appear to emphasize the use of a particular sign to the interlocutor. They are referred to here as emphasis mouthings. Consider the example in (2).

(2)

nhe	*bitjan*	*balanya*	*ŋunhu*	[YSL]
IX.PRO$_2$	RIRRIKTHU	MÄRI	IX.PRO$_2$	
2SG	sick	mother's mother	2SG	

'Your grandmother is sick'.

Sequence4_G_D_2009.mpg

In (2) the sign RIRRIKTHU 'to be sick' is accompanied by the voiced mouthing of a verbal determiner *bitja-* 'do, be thus' with an appropriate

verbal inflection. This emphasis mouthing appears to have two functions: (i) to attract the attention of the addressee to the manual sign itself (in case of hearing YSL users) and (ii) to determine a word class in an utterance. Consider the next sign MÄRI 'mother's mother' which is accompanied by the voiced mouthing of a general nominal determiner *balanya* 'such, this'. Mouthing of the nominal determiner *balanya* occurs with nominal signs such as kin terms, places, food etc. and mouthing of *bitja* usually accompanies various verbs such as sit, stand, go and so on.

The frequency of mouthings in the dataset was not quantified for this study. Overall, the proportion of the bimodal utterances in YSL appears very high.

5.3.3. Head movements

This section examines the use of other phonological or lexical nonmanual markers in addition to the mouth actions (i.e. mouth gestures and mouthings described in the previous sections), which are specified in the lexical entry of a YSL sign. In particular, I will focus here on the head movements in the lexical sign with the meaning 'to sleep, exist, stay' and two negative particles found in the YSL data.

5.3.3.1. SLEEP vs. EXIST

An interesting case of lexically or phonologically specified head movements is attested in one YSL sign, which can mean both 'to sleep' and 'to exist/lie down'. The sign was originally glossed using Djambarrpuyŋu as DORRA in the corpus. The manual articulation of sign (see Figure 39) is accompanied by the nonmanual head tilt towards the palm of the hand(s). This sign can be articulated with one or two hands, although this sign with the meaning 'to sleep' was produced with two hands more often than the same sign with the meaning 'to exist, stay'.

The nonmanual marker occurring with this sign is very similar to the one reported for other sign languages in the sign for SLEEP: one hand is brought to the side of the head as if supporting it (Pfau & Quer, 2010) (cf. Figure 39). What is interesting in the case of YSL is that the intensity and the angle of the head tilt may define a minimal pair. Upon further analysis, it became clear that the nonmanual marker is specified in the lexical entry of this sign and, thus, differentiates between the two meanings. As a result, the verbs were

glossed as exception in English as SLEEP and EXIST, because Djambarrpuyŋu does not make this difference[79].

Figure 39 shows the sign SLEEP, in which the YSL signer notably and slowly tilts the head towards the shoulder as if showing the position of the head while sleeping (see example in (3)).

(3) DIRRAMU **SLEEP** IX.PRO$_{3a}$ DIRRAMU [YSL]
ht
man sleep 3SG man
'The man is sleeping'
Sequence8_13JUL_E2_2010.mpg

Figure 40 illustrates the minimal head tilt, which always accompanies the sign EXIST. In (4), for example, the YSL signer's head is slightly tilted to his right shoulder in a quick and unnoticeable manner.

(4) ŊALI.EXC **EXIST$_{3a}$** [YSL]
ht$_{minimal}$
DU.EXC stay-here
'We (he and I) are staying here.'
Sequence05_10JUL_Mapuru3_2010.mpg

A detailed analysis of all occurrences (n=53) of this manual sign in the YSL data confirms the distinction between different head tilts: extensive head tilt always accompanies the sign SLEEP and the slight head tilt always occurs on

Figure 39. YSL sign SLEEP

Figure 40. YSL sign EXIST

the sign EXIST. These examples support the assumption that this nonmanual marker has phonological significance. Notice that the endpoints of the verb EXIST may be spatially modified, i.e. it can be moved and/or oriented towards various locations as shown in (4) (see 9 for an extensive discussion of the optional spatial modification of YSL verbs), whereas the verb SLEEP is never modified in space. This finding further validates the distinction of these two lexical signs.

5.3.3.2. BÄYƉU vs. YAKA

Another interesting example of nonmanuals belonging to the phonological description of the YSL signs is found in two negative particles BÄYƉU and YAKA (for description of negation in YSL see chapter 6.1). This section is focused on the different head movements, which accompany the negative particles in YSL.

Head movements have been generally reported to accompany negative particles in various sign language documented to date (Pfau & Quer, 2010; Zeshan, 2004a). Two different head movements are attested in the YSL data occurring on the two negative particles BÄYƉU and YAKA with a combination of facial expressions such as lowered eyebrows, nose wrinkling, pulling down the corners of the mouth and mouthing. These are (i) a repeated side-to-side head movement (see Figure 41), (ii) a single sideward head tilt (see Figure 42).

Figure 41. YSL negative particle yaka

A careful examination of 93 instances of negative particles in the YSL data remarkably reveals that they are lexically specified for these two kinds of head movements. My preliminary analysis suggests that the negative particle YAKA is accompanied by the repeated side-to-side headshake (*hs*) in 76% of all instances in the corpus (n=47). As can be seen in Figure 41, the side-to-side headshake is usually combined with the lowered or furrowed eyebrows (*le*) and nose wrinkling.

The negative particle BÄYƉU, which includes two hands rotated from palm down to palm up as shown in Figure 42, is accompanied by the single sideward head tilt (*ht*) in 78% of all instances in the corpus (n=46), a distinctive mouth gesture (corners of the mouth are down) and mouthing.

Figure 42. YSL negative particle BÄYƉU

There is not enough information in the data to conclude whether the facial expressions described above must accompany negative particles in YSL. However, there is evidence to support the use of the described nonmanual markers paired with the corresponding negative particle. Thus, YAKA appears to be accompanied by the side-to-side headshake, whereas BÄYƉU is never used with this nonmanual in the data, but is rather accompanied by the single sideward head tilt with the corners of the mouth being pulled down (see Figure 42). Due to the combination of nonmanual markers occurring with the negation BÄYƉU, this sign is easily distinguished from the general Wh-question sign, which has the same manual components but never appears with the corners of the mouth pulled down (see 6.2.3 for an example and more information about nonmanual marking in YSL interrogatives).

5.4. Summary

The primary findings on YSL phonology highlight the relatively small set of phonetic handshapes, which is similar to the handshape sets found in other documented shared (Nyst, 2012) and alternate sign languages (Kendon, 1988). With respect to the handshape formation, considerable variation has been identified in the data set, which has also been reported for other rural signing varieties (Israel & Sandler, 2009). Furthermore, as discussed earlier, the YSL signs tend to be one handed; two-handed signs are relatively rare in the data similar to certain other alternate sign languages (Kendon, 1988). Notably, it has been shown that nonmanual markers play an important role in YSL. Mouthings are found to have various significant functions, such as disambiguation and emphasis. Potentially YSL signing exhibits a great amount of (voiced) mouthings making the utterances multimodal, i.e. including both speech and sign. Finally, different facial expressions have been observed in YSL to compliment various negative particles. This finding suggests that nonmanual markers play an important role in Yolngu Sign Language.

Chapter 6
Syntactic aspects

6.1. Negation

Negation in sign languages can be realized at the manual and non-manual levels (for non-manual negation markers in YSL see section 5.3.3.2). Cross-linguistic variation has been found in the combination of these two types of negation and in the extent, to which they can encode sentential negation independently of each other (Quer, 2012). The majority of documented sign languages to date appear to be of a *non-manual dominant* type according to specific typological classification proposed for sign language negation by Zeshan (2004a). Non-manual dominant sign languages are languages in which a clause can be negated by a non-manual negation alone. This type of negation has been attested in languages such as DGS (Pfau, 2008), ASL (Neidle, Kegl, MacLaughlin, Bahan, & Lee, 2000) and others (see Zeshan, 2004a; 2008 for examples). *Manual dominant* type of sign language negation is much less widespread cross-linguistically than the non-manual dominant systems. In manual dominant languages, a non-manual marker is insufficient to negate a proposition, and so a manual negator must be present in the sentence. In such languages, the use of the manual negative is obligatory. The manual dominant pattern for negation has been reported for TİD (Zeshan, 2003b; Gökgöz, 2011), LIU (Hendriks, 2008, p. 96), Kata Kolok (Zeshan, 2004a, p. 18) and IUR (Schuit, 2013).

In this section, after briefly addressing negation in Djambarrpuyŋu in 6.1.1, I provide an overview of YSL negation in 6.1.2.

6.1.1. Negation in Djambarrpuyŋu

Negation is a domain where sign languages differ considerably from spoken languages. Nonmanual negation is clearly a modality-specific phenomenon. Nevertheless, this section provides some available information on negation in Djambarrpuyŋu in order to compare the paradigm of negators or the syntactic realization of negation in Yolngu signed and spoken languages.

The information on negation in Djambarrpuyŋu or other Yolngu matha (for the description of the term and information about Yolngu spoken varieties

see section 3.4) is unfortunately very sparse. In her comprehensive study on Djambarrpuyŋu, Wilkinson (1991, p. 356) deals with the interaction between verb inflection and negation and provides only some basic information on two negative particles, namely *bäyŋu* and *yaka*. Both negative particles may appear in spoken Djambarrpuyŋu as propositional negators as shown in (1)–(2) (Wilkinson, 1991, p. 261; 357).

[Djambarrpuyŋu]

(1) *ga* ***bäyŋu*** *ŋayi* *gi* *nhini* *barpuru* *dhiyal*
and **NEGQ** 3SG IMPV-2ND sit-2ND yesterday PROX.LOC
'and s/he wasn't there yesterday'

(2) ***yaka*** *ŋarra* *nhuna* *wäwun'kuŋ* *barpuru* [Djambarrpuyŋu]
NEG 1SG 2SG.ACC promise-2ND yesterday
'I didn't promise (to get) you (something) yesterday'

Bäyŋu also appears to be used for negation of existence or as a negative quantifier as in (3), whereas *yaka* occurs in negative imperatives (see example in (4)) (Wilkinson, 1991, p. 357; 271).

[Djambarrpuyŋu]

(3) **bäyŋu** ŋarraku gi ŋorri ŋula dhiyal
NEGQ 1SG.DAT IMPV.2ND lie.2nd INDEF2 PROX.LOC

wäŋaŋurnydja
place.LOC.ROM
'I don't have any here'

(4) ***yaka*** *ŋayathul* *dhuwali* [Djambarrpuyŋu]
NEG touch.TR.2ND MED
'Don't touch that/there (a hot stove)'

Any further information on negative particles in Djambarrpuyŋu such as their syntactic position is unfortunately not available.

6.1.2. Negation in YSL

Two manual signs were found to function as clause negators in the YSL data: BÄYIÐU 'no, none, nothing, not have, there is not' and YAKA 'no, not'. BÄYIÐU is produced with a Blax handshape. The hands are flipping from palms down

to palms up twisting the wrist as shown in Figure 43 on the left. Some occasional instances of single sideways movement with both hands were also attested (see Figure 43 on the right).

Figure 43. Two variants of YSL clause negator BÄYḎU

YAKA is usually one handed. It is articulated with a handshape, palm facing downwards[80] (cf. Figure 44).

Figure 44. yaka

YSL data analysis has revealed interesting differences in nonmanual negation occurring with these two negative signs. As already discussed in section 5.3.3.2, the two YSL negative particles BÄYḎU and YAKA are accompanied by different nonmanual markers: YAKA occurrs in the majority of cases in the dataset with a repeated side-to-side head movement[81], furrowed eyebrows and wrinkled nose as depicted in Figure 44 (see also example (5)). The

negative particle BÄYƉU (see Figure 43) is usually accompanied by a single sideward head turn, pulled down corners of the mouth and a corresponding mouthing (see example (5) – (6)).

[YSL]

(5) *le*

hs

DHARRWA	GUNDA	IX_{3a}	ƉARRA	**YAKA**	DIR-GO-THERE
many	stone	there	1SG	**NEG**	go

'There are too many rocks on the beach, I am not going there'

Sequence06_D_2009.mpg

(6) *cd* *cd*

BÄYƉU	IX_a	LAKARA	**BÄYƉU**
NEG	3SG	tell	**NEG**

'She didn't say anything'

Sequence12_G_sentences_2009.mpg

The manual signs BÄYƉU and YAKA do not require the nonmanual components and can stand on their own to negate a proposition by themselves. YSL does not allow for the possibility of expressing negation entirely by nonmanuals, as it is the case, for example, in Greek Sign Language (Antzakas, 2002 in Zeshan, 2004a) or DGS. The nonmanuals are not sufficient to negate a YSL clause in the absence of any manual negative particle. Given this observation, YSL, thus, belongs to a typologically rare type of manual dominant sign languages (see Zeshan, 2004a for a typology of negation strategies in sign languages around the world). Other rural sign languages such as Kata Kolok (Zeshan, 2004a) and IUR (Schuit, 2013) have also been described as manual dominant sign languages. Deaf community sign languages with a manual dominant negation pattern are, for example, Turkish Sign Language, Chinese Sign Language or Italian Sign Language (Zeshan, 2004a). As mentioned above, the use of the manual negative in such languages is obligatory.

YAKA can be considered a negative particle in YSL that conveys basic clause negation. It negates a whole clause rather than a particular constituent only and appears to convey negative polarity without any other meaning components. In the widest variety of context, including an example in (7), YAKA can be regarded an instance of basic clause negation.

(7)

ƉARRA	DHIƉKIƉ	**YAKA**	MÄNA	**YAKA**
1SG	think	**NEG**	shark	**NEG**

[YSL]

'I think it is not a shark'

Sequence1_13JUL_G_2010.mpg

Similarly, BÄYŊU can also negate a whole clause as shown in (8).

(8) **BÄYŊU** NHÄMA IX.LOC MIYALK [YSL]
NEG to know/ to see this/that woman
'I don't know this woman'
Sequence13_16JUL_W_2010.mpg

In some cases, however, BÄYŊU has an additional meaning and functions as a negative existential as illustrated in (9).

(9) **BÄYŊU** RRUPIYA GANA **BÄYŊU** RRUPIYA [YSL]
NEG money enough **NEG** money
'There is not enough money'
Sequence14_19JUL_L_2010.mpg

Given the intimate connection between existential and possessive functions (Zeshan, 2004a), 'not have' and 'not exist' are expressed in the same way in YSL (see (10)). BÄYŊU can thus be regarded a special clause negator, which can convey negative polarity and has an additional function of negative existential.

(10) WÄWA IX.PRO$_2$ QS? [YSL]
son 2SG where
'Where is your son?'

BÄYŊU. DHIŊGA
NEG dead
'I don't have any. He passed away'
Sequence05_10JUL_Mapuru3_2010.mpg

Due to the small amount of data, clear syntactic position of YSL clause negators could not be determined in this study. Sometimes it was difficult or even impossible to decide whether a negative particle in a given YSL utterance is in post-predicate or in clause-final position. Moreover, since basic word order has not been clearly established (see section 9.4 for some information on word order in YSL) in YSL, no definite statement with regard to syntax of clause negators can be made here. Nevertheless, preliminary observation shows that the two negators behave differently. BÄYŊU occurs in most of the cases in pre-predicate position (see example in (8)). YAKA, however, shows a slight preference for post-predicate or clause-final position (see example in (7)). Additionally, YAKA appears in many elicited YSL utterances in a

double construction in both pre-predicate and clause-final position. Similar doubling patterns are reported to be very common in various sign languages (Zeshan, 2004a).

A preliminary cross-modal comparison suggests that both languages, YSL and Djambarrpuyŋu, have two negative particles: 1) a basic clause negator YAKA and 2) a negative existential BÄYƉU. Comparing YSL and spoken Djambarrpuyŋu in the domain of negation, it should be noted, however, that more data from both languages is needed. Due to the lack of information on syntactic patterns of negation in Djambarrpuyŋu, no comparison can be drawn. A comparison has to be deferred until more information becomes available.

6.1.3. Summary

This section offered a short overview of negation systems in Djambarrpuyŋu and YSL. Possible manual (see 6.1.2) and nonmanual (see 5.3.3.2) mechanisms for sentential negation in YSL have been presented.

Based on the collected data, YSL can be characterized as manual dominant sign language similar to other shared sign languages such as KK or IUR. Similar to Djambarrpuyŋu, YSL has two negative particles. A basic clause negator YAKA is produced by a side-to-side waving -hand. In addition to the manual sign, there is a non-manual side-to-side headshake that usually appears with it. BÄYƉU is a negative existential, usually articulated with Blax hands rotating from palm down to palm up. BÄYƉU is usually accompanied by the single sideward head tilt, a distinctive mouth gesture (corners of the mouth are pulled down) and mouthing. These nonmanuals, however, cannot be used for negation independently of the manual signs.

With regard to the position of negators, the analysis of the YSL data was far from conclusive, given the small set of data. In the majority of cases, YAKA was observed to follow the predicate which it negates and BÄYƉU was usually produced before the predicate.

6.2. Interrogatives

The structure of interrogative sentences, in particular WH-questions (content question containing WH-words such as ‘what’, ‘why’, ‘where’ etc.) has

received considerable attention in the sign language literature on DCSLs and shared sign languages (Sandler & Lillo-Martin, 2006; Zeshan, 2004b; Meir, 2004; Nonaka, 2011; Šarac Kuhn & Wilbur, 2006), thus allowing to compare YSL with other sign languages described in the literature.

This chapter is concerned with the issue of how questions are marked in YSL. I will discuss in turn the following aspects: (i) the structure of YSL content questions in 6.2.1 considering the size of question word paradigm in 6.2.1.1 and the syntactic position of question words in 6.2.1.2; (ii) the structure of polar questions in YSL in 6.2.2 and (iii) the nonmanual marking of questions in 6.2.3. These aspects are selected for description here because they seem particularly interesting in the light of cross-linguistic (comparison with other sign languages) and cross-modal (comparison with the surrounding spoken language) comparisons.

6.2.1. Content questions

6.2.1.1. Question word paradigm

In the first broad typological study based on data from thirty-five genetically unrelated sign languages, Zeshan (2004b) finds that signed languages show extensive variation with regard to the size and structure of question word paradigms in content questions. Three different types can be identified here: sign languages with minimal, intermediate or large question word paradigms (cf. Zeshan, 2004b, p. 23). A sign language with a minimal paradigm has "only one question word that covers the entire range of interrogative meanings" (Zeshan, 2004b). This pattern is considered to be largely exceptional across sign languages and has been found so far in PROVISL, IPSL, Kata Kolok and PISL[82] (Washabaugh, Woodward, & DeSantis, 1978; Aboh, Pfau, & Zeshan, 2005; Marsaja, 2008; Davis, 2010). The languages mentioned above are described as having a minimal question word paradigm with a single question word. In IPSL, for instance, one general wh-sign shown in Figure 45 is used to express the whole range of question words such as 'why', 'where' etc. Its interpretation needs to be inferred from the context. Consider examples in (11) (Aboh, Pfau, & Zeshan, 2005, p. 23).

(11) a) CHILD ANGRY **G-WH** b) INDEX GO **G-WH** [IPSL]
'Why is the child angry?' 'Where are you going?'

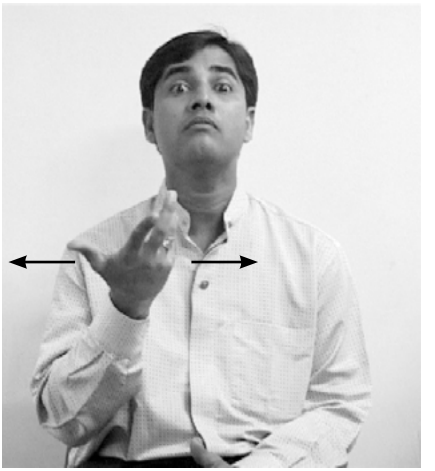


Figure 45. IPSL general wh-sign[83]

Similar discourse-linked interpretation of question signs is observed in Kata Kolok, which also possesses only one manual question sign. However, this WHQS can also be combined with a number of noninterrogative signs such as time marker PIDAN to express the meaning of 'when' as shown in (12).

(12)	**WHQS**	PIDAN	CAI	TEKE	[Kata Kolok]
	WHQS	time-marker	2SG	come	
	'When did you arrive?'				

(Marsaja, 2008, p. 207)

In languages with an intermediate question word paradigm, a general interrogative is used for some interrogative meanings. Additionally, other interrogative signs are also used for further meanings. This type can be best exemplified by Ban Khor Sign Language with two manual question signs: WH1 and WH2 (Nonaka, 2007, p. 124). While WH1 covers the meaning of 'what', 'who', 'where', 'why', 'which', 'when' and 'how', the meanings of 'how many' and 'how much' are conveyed by WH2. Nihon Shuwa (NS) is also described as a type of language with an intermediate question word paradigm (Zeshan, 2004b, p. 23; Morgan, 2006).

Languages such as ASL with large question word paradigms are very common cross-linguistically (Zeshan, 2004b). These languages typically have a full paradigm of monomorphemic question signs at their disposal. RSL has, for instance, distinct question words such as КТО *kto*[84] 'who', ЧТО *što* 'what', ГДЕ *gde* 'where', ОТКУДА *otkuda* 'from where', ЗАЧЕМ *začem* 'what for', КОГДА *kogda* 'when', КУДА *kuda* 'where to', ПОЧЕМУ *počemu*

'why', чей *čej* 'whose' etc. plus some lexicalized interrogative phrase such как дела *kak dela* 'how are you?' (Zaitseva/Зайцева, 2004; Viktorova/Викторова, 2007).

YSL patterns with PROVISL, IPSL, Kata Kolok and PISL and can be classified as a language with a minimal question word paradigm. There is one single question sign in YSL. It is formed by quickly turning one or two open 🤚-shaped hands from a palm downward to a palm upward position as shown in Figure 46.

Figure 46. YSL question sign (QS)

Interestingly, Zeshan (2004b) finds some similarities in the formation of interrogative signs across distinct signed languages. A certain type of movement (the whole hand or parts of it, fingers wiggling) seems to be very common cross-linguistically in sign languages. In fact, the YSL general question sign shown in Figure 46 appears to be very similar to the question particle PALM-UP found in FSL (Zeshan, 2004b, p. 33), DSL (Engberg-Pedersen, 2002), NZSL (McKee & Wallingford, 2011) or in Urubú Kaapor Sign Language (Kakumasu, 1968, p. 249)[85]. Interestingly, Franklin, Giannakidou, & Goldin-Meadow (2011) find that homesigners systematically use a similar flip gesture to convey question meanings. The flip form is, however, not restricted to questions, but is also a broad-ranging wh-form. In Warlpiri the question sign (also used for many types of questions) is a hand, in which thumb and indices are extended and the foream is rotated rapidly until palm of hand faces upwards[86]. Speakers in places such as Italy and England, when using a gesture as they ask certain kinds of questions also use an action, in which forearm is roated to bring an open palm to face upwards (Kendon, 2004). It is conceivable, that such flip hand gesture presents a kind

of universal gesture, however much more systematic investigation is needed both among signers and speakers (Kendon, personal communication).

The YSL question sign (glossed here as QS[87]) can be interpreted as any question word. Consider the following examples in (13)–(14):

(13)	*nhä*	*nhe*	*bitjan*	
	QS	IX.PRO$_2$	BATHAN	[YSL]
	what	2SG	cook	
	'What do you cook?'			
				Sequence3_G_2009.mpg

(14)	*litja*	*balanya*	*bitjan*	*wanha*	
	ŊALI.INCL	ŊAPIPI	EXIST	**QS**	[YSL]
	DU.INCL	mother's brother	stay	**where**	
	'Where is our uncle?'				
					Sequence10_14JUL_T_2010.mpg

In (13) the question sign is interpreted as 'what' and in (14) it has the meaning of "where". Notice that both signs are accompanied by mouthings of the Djambarrpuyŋu words *nhä* 'what' and *wanha* 'where' respectively. The YSL question sign is obligatorily accompanied by mouthings, i.e. articulation of the corresponding Djambarrpuyŋu interrogative pronoun, in order to disambiguate the question signs (see also Cooke & Adone (1994) for a similar observation). The importance of mouthings in the question-word paradigm has been noticed for other sign languages as well, i.e. PROVISL (Washabaugh, Woodward, & DeSantis, 1978) or ISL (Meir & Sandler, 2008). In rare cases, noninterrogative signs can been added to convey a more specific meaning in YSL such as QS+TIME 'what time' as shown in Figure 47.

QS TIME

Figure 47. YSL complex wh-sign 'what time'

6.2.1.2. Syntactic position of question signs

With respect to the syntactic position of question words, YSL exhibits quite intriguing characteristics. The data reveal three possible positions of a question sign in a YSL clause: clause initial, clause final and a doubling construction of the question sign. This finding is in accord with the majority of sign languages around the world (Zeshan, 2004b; Sandler & Lillo-Martin, 2006). Wh-signs in DGS may, for instance, also appear clause initially, clause initially and clause finally, or clause finally (Happ & Vorkörper, 2006, S. 321). However, the preferred position of a question sign in YSL appears to be clause final as shown in Figure 48. Cooke & Adone (1994, p. 10) have already noted the preference of the clause final position of the YSL question sign by analyzing a sample of 25 sentences. This study has substantiated their claims by the analysis of a larger set of elicited and spontaneous YSL data (cf. Figure 48).

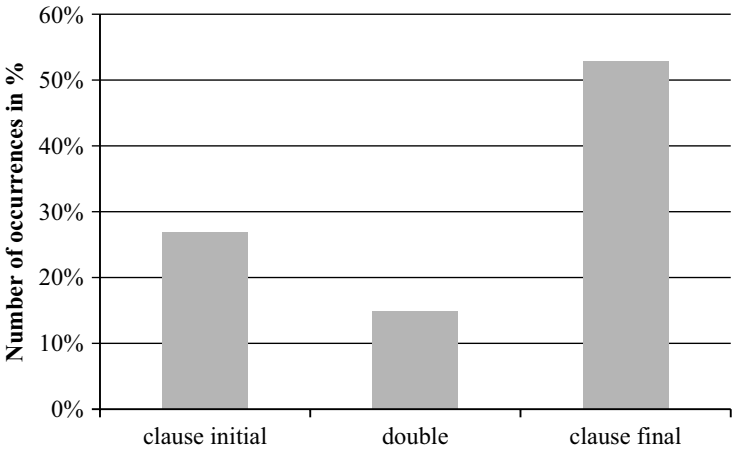


Figure 48. The position of the QS within the YSL clause (n=90)

As can be seen in Figure 48, more than half of all question signs appear clause final in the YSL data (54%, n=49) as exemplified by the examples in (15)–(17). The clause final position of a question sign is commonly observed in many DCSLs (Zeshan, 2004b).

	balanyamirr	*litjalaŋ*	*nhämunha*	[YSL]
(15)	YAPA	ŊALI.INCL	**QS**	
	sister	DU.INCL	**how-many**	
	'How many sisters do we have?'			

Sequence13_16JUL_W_2010.mpg

	balanya	*nhu*	*nhä*	[YSL]
(16)	BALANDA	NHE	**QS**	
	balanda	2SG	**how**	

'How are you related to the Balanda?'

Sequence16_21JUL_J_2010.mpg

	litjalaŋ	*balanya*	*bitjan*	*wanha*	[YSL]
(17)	ŊALI.INCL	ŊAPIPI	EXIST	**QS**	
	DU.INCL	mother's brother	stay	**where**	

'Where is our uncle?'

Sequence10_14JUL_T_2010.mpg

Additionally to the findings of Cooke & Adone (1994, p. 10), who almost find YSL question sign to be exclusively in sentence-final position, the data of this study reveal that question sign in YSL can also appear clause initially and both, that is, clause initially and clause finally. A number of question signs (30%, n=27) in the data were placed clause-initially as shown in (18).

	nhä	*nhe*	*bitjan*	
(18)	**QS**	IX.PRO_2	BATHAN	[YSL]
	what	2SG	cook	

'What do you cook?'

Sequence3_G_2009.mpg

A small portion of question signs (14%, n=14) occupied both positions, initial and final, creating the so-called doubling position of the question sign, as shown in (19)–(20).

	nhämunha	*nhuŋu*	*balanyamirr*	*nhämunha*	[YSL]
(19)	**QS**	IX.PRO_2	YAPA	**QS**	
	how-many	2SG	sister	**how-many**	

'How many sisters do you have?'

Sequence13_16JUL_W_2010.mpg

	yol	*nhe*	mg:tongue	*yol*	[YSL]
(20)	**QS**	NHE	LAKARA	**QS**	
	who	2SG	talk/speak	**who**	

'Who are you talking about?'

Sequence12_15JUL_L_2010.mpg

The finding that the question sign in YSL preferably appears clause-finally is particularly intriguing from a cross-modal point of view. According to Wilkinson (1991, p. 659), the position of interrogative words in the ambient spoken language, Djambarrpuyŋu, is always clause initial, as displayed in example (21).

(21) ***Nhä*** *ŋayi* *gan* *djämany* [Djambarrpuyŋu]
what 3SG IMPV.3SG work.PROM
'What (work) was he doing?'

Contrast the two sentences displayed in (22)–(23) in YSL and Djambarrpuyŋu conveying the same meaning.

(22) *nhä* *marrtji* *nhä* [YSL]
QS IX.PRO$_2$ MARRTJI **QS**
where 2SG walk **where**
'Where are you going?'
Sequence9_14JUL_L_2010.mpg

(23) ***Nhälil*** *nhe* *ga* *marrtji* [Djambarrpuyŋu]
where 2SG IMPERF go
'Where are you going?'

While in the YSL sentence in (22), the general question sign appears clause-initially and clause-finaly, the wh-word in the Djambarrpuyŋu sentence in (23) takes the clause initial position.

This finding suggests that YSL and the surrounding spoken language differ greatly with respect to the syntactic position of the question word in content questions. These differences between YSL and Djambarrpuyŋu at the syntactic level can be viewed as additional support for the claim that YSL is not a representation of a spoken Yolngu language, but an independent mode of discourse (Cooke & Adone, 1994). Furthermore, it is noteworthy, that the sentences with the clause-initial position of the QS sign (30%, see Figure 48) were mostly produced by the hearing participants during elicitation sessions using translation from the surrounding spoken lingua franca (see section 4.2 for information about stimulus material). Hence, it appears reasonable to believe that YSL was influenced by Djambarrpuyŋu with respect to the initial position of the QS.

6.2.2. Polar questions

While YSL appears to be different from the ambient spoken language in the syntactic structure of content questions, the data show some parallels between signed and spoken languages in case of polar questions (or "yes/no-questions").

There are two strategies in Djambarrpuyŋu to mark polar questions. Polar question may be indicated by intonation. In that case, the last word of the sentence is marked by rising-falling contour as shown in (24) (Wilkinson, 1991, p. 623).

[Djambarrpuyŋu]

(24) *yaka* *nhuŋu* *d-----n+dhu* *lakaranha*
NEG 2SG.DAT person's name.ERG tell
'Didn't D-----n tell you?'

Besides, Djambarrpuyŋu polar questions can be indicated by interrogative pronouns, which are as well used in content questions. In this case, the initial interrogative pronoun is marked by a falling contour on the first syllable and the last part of a clause has a rising-falling contour (Wilkinson, 1991, p. 624). Wilkinson (1991) reports that such polar questions basically consist of two parts: an information question part, equivalent to "what's that?" followed by a part with a clause offering a potential answer. An example of a Djambarrpuyŋu polar question with an interrogative pronoun is presented in (25) (ibid, p. 625).

(25) *nhä* *nhuma ga* *luka+ny* *bodiny* [Djambarrpuyŋu]
what 2PL.IMPV.1SG eat.1SG.PROM tame/non-poisonous
what are you eating (something) non-poisonous?
'Is what you are eating non-poisonous?'

All polar questions in the YSL data were indicated by the same question sign (QS) that was used in content questions (see 6.2.1.1). Crucially, in contrast to content questions described earlier, the question sign in polar questions always occurred clause-initially similar to Djambarrpuyŋu as seen in the examples (26) – (29).

le
(26) **QS** IX.PRO$_2$ IX$_{3a}$ WURKIRRI [YSL]
QS 2SG there write/school
'Do you go to school?'
Sequence9_14JUL_L_2010.mpg

le
bitjan
(27) **QS** SMOKE [YSL]
QS smoke
'Do you smoke?'
Sequence9_14JUL_L_2010.mpg

le
(28) **QS** IX.PRO$_2$ YOTHU [YSL]
QS 2SG child
'Are you pregnant?'
Sequence12_15JUL_L_2010.mpg

nhä *mg: op*
(29) **QS** LUKA [YSL]
QS eat
'Have you eaten?'
Sequence9_14JUL_L_2010.mpg

The YSL data suggest that the question sign (QS) as depicted in Figure 46 can serve as both question word in content questions and as a question particle in polar questions. The usage of a question sign in YSL polar questions might be a possible instance of spoken language influence.

In her recent typological study, Zeshan (2011c) discovers that only a fourth of all signed languages in her data (n=38) possess question particles. With regard to the geographical distribution, she notices a high occurrence of question particles in East Asian sign languages (in Hong Kong, Taiwan, China, Japan) which parallels to a prevalence of question particles in the eastern Asian spoken languages (Zeshan, 2011c), such as the question particle 马*ma* in Mandarin. For example, Taiwan and Hong Kong Sign Languages have a question particle HAVE+NOT-HAVE (see (30)) which is astonishingly similar to the Sinitic "A-not-A construction" exemplified by Mandarin Chinese in (31).

pol-q

(30) INDEX-2 FATHER, MONEY **HAVE-NOT-HAVE** [TSL]
'As for your father, has he got money?'

(Zeshan, 2004b, p. 35)

(31)	你	有	没	有	时间	啊	[Mandarin Chinese]
	ni	**you**	**mei**	**you**	shijian	ma	
	2SG	**have**	**not**	**have**	time	Qpart	

'Do you have time?'

Even though the above examples demonstrate striking correlation in the occurrence of question particles between spoken and signed languages in Taiwan, Zeshan (2011c) concludes that "unless more instances of question particles are discovered in the future, it is hard to see any regional or genetic patterns here".

The usage of a question sign as a question particle in YSL polar questions corresponds to the use of interrogative proforms as a question particle in polar questions of the surrounding spoken language. Such an instance leads to a tentative generalization that cross-linguistically sign languages seem more likely to have a question particle if a question particle is used in the ambient spoken language. However, as already noted by Zeshan (2011c), there is no direct link. For there are languages such as ASL or Urubú Kaapor Sign Language which do use a question particle in polar questions unlike the surrounding spoken languages, i.e. English and Urubú Kaapor (Zeshan, 2011c).

6.2.3. Nonmanual marking

Another interesting aspect to be discussed here is the use of nonmanuals to mark questions is YSL. It has been argued that facial expressions are not used in the grammars of the alternate sign languages at all (see Kendon 1988, p. 155 for NCDSLs; Bakker, 2012a, p. 129 for PISL). However, section 5.3 of this book has already shown in that nonmanual markers do represent an integral part of the YSL grammar. In the case of question marking, cross-linguistic studies suggest that sign languages make extensive use of nonmanual marking (Pfau & Quer, 2010). A typological analysis reveals that nonmanual markers mark polar questions in various signed languages, whereas in content questions nonmanuals "play somewhat less important role" (Zeshan, 2004b).

My preliminary analysis of nonmanual marking in YSL reveals that polar questions in the data tend to be marked nonmanually by a distinct eyebrow position as compared to declarative sentences (about 70% of all polar questions in the data). Figure 49 illustrates this nonmanual marking, namely lowered or furrowed eyebrows (abbreviated as *le* in annotations) typically accompanying the initial question sign in YSL polar questions. Occasionally head movement has also been observed.

Figure 49. Nonmanual marking in YSL polar question

It is interesting to note that typologically YSL seems to be unusual by marking polar questions with the lowered or furrowed eyebrows. In most sign languages, the eyebrows are raised in yes/no-questions (Zeshan, 2004b), as for example in Croatian Sign Language (Šarac Kuhn & Wilbur, 2006).

The YSL polar questions are usually indicated by the lowered eyebrows as shown in (32) (see also Figure 49).

	le nhä			
(32)	**QS**	BUTHURU	IX_{3a}	[YSL]
	QS	deaf	here	
	'Are there deaf (people) here?'			
				Sequence9_14JUL_L_2010.mpg

There is, however, a great deal of variation among signers with regard to the scope of nonmanual marking in polar questions. Sometimes the lowered eyebrows co-occur with the question sign only (see (32)); in other cases the nonmanual can spread over the whole clause as shown in (26)–(28).

Both polar and content questions are marked by mouthing in YSL. Additionally, polar questions are indicated by the nonmanual marking (furrowed eyebrows) accompanying the initial question sign. The nonmanual marking to indicate content questions is found to be largely optional. About half of all question signs in content questions appear to be accompanied by the lowered eyebrows.

To summarize the findings presented with regard to question markings in YSL, four aspects concerned with question formation in YSL have been discussed here. First, YSL is identified as a sign language with a minimal question word paradigm having a single question sign (QS) that covers the whole range of interrogatives. Secondly, this single question sign shows preference to appear clause finally in content question, which differs from the position of a question word in the surrounding spoken language. Thirdly, YSL polar questions are obligatorily marked by the same manual question sign, which occurs clause-initially. The use of the question sign in YSL polar questions and its syntactic position may be interpreted as influence from the spoken vernacular, Djambarrpuyŋu, which also uses initial question particles in polar questions (Wilkinson, 1991). Finally and more importantly, it has been shown, that YSL employs nonmanual marking for the formation of polar questions. The majority of polar questions in the YSL data are found to be marked by lowered or furrowed eyebrows.

6.2.4. Summary

This chapter has presented an overview of two syntactic structural aspects of Yolngu Sign Language. Section 6.1.2 introduced two negative particles

in YSL: BÄYÐU and YAKA. This section also presented a description of the nonmanual markers accompanying the negative particles. The nonmanuals appear to be not sufficient to negate an YSL clause in the absence of a manual negative particle. Therefore, YSL has a cross-linguistically exceptional manual dominant pattern for negation (see Zeshan (2004a) for a typology of negative constructions across sign languages).

Section 6.2 described four aspects concerned with question formation in YSL. YSL has a minimal question word paradigm with a single question sign (QS) covering the whole range of interrogatives in content questions. Both polar and content question are indicated by the general question sign: in content questions it appears clause finally and in polar questions clause initially. In case of polar question marking, the manual sign is additionally accompanied by lowered eyebrows.

Part IV

Use of Space

One of the most apparent and fundamental differences between spoken and signed languages is the way they are transmitted. The auditory-vocal modality makes use of the speech organs to produce acoustic signals to be perceived by the ears. The visual-gestural modality uses manual movements in space and facial expressions to be perceived by the eyes. Sign languages, thus, exploit and take advantage of the three-dimensional space for a variety of purposes including grammatical ones. In particular, the space can be used by sign languages a) to refer to participants in a discourse, b) to encode the grammatical roles of participants in an event and c) to depict information about different types of motion events.

Before turning to the analysis of how the signing space in used in Yolngu Sign Language, some basic information about the spatial devices for structuring sign space for the purposes mentioned above in sign language in general will be first presented in the following chapters. Providing this information appears to be reasonable, since the analysis of space in sign languages is not free of disputes. Despite the close attention the three morphological aspects of spatial grammar such as i) pronominal reference, ii) verb agreement and iii) classifier predicates have received in the literature, they remain the most controversial topics in sign language research. Rather than directly engaging with the existing debates, the chapters to come discuss the spatial devices accordingly by taking into account the latest theoretical analyses in order to provide for the reader the background necessary for a proper understanding of the YSL data to be presented later.

This part is the core of the book and, thus, deals with the spatial morphological processes mentioned above in turn. Other morphological processes, such as aspectual inflection, derivation, and compounding are not discussed here. This part is organized as follows. Chapter 7 demonstrates the attested cross-linguistic variation in the size of signing space across sign languages. Chapter 8 accounts for the analysis of pronominal reference system. Chapter 9 deals with the phenomenon of directionality (also known as "verb agreement"). Chapter 10 discusses a phenomenon known as sign language classifiers and provides information on other ways of expressing motion in sign languages. The last chapter of this part, chapter 11, is concerned with the system of expressing various geometrical shapes and sizes.

After providing some general information on the size of the signing space (see chapter 7), pronominal signs (see 8), verb directionality (see 9), classifier predicates (see 10) and size and shape specifiers (see 11) in various sign languages, every chapter focuses on the similar structures found in YSL. Providing the background information on these spatial aspects in every chapter is important for understanding why shared sign languages possess striking features. Lacking much cross-linguistic analysis on the use of signing space in geographically diverse sign languages, sign language research is still largely based on the assumption about uniformity of sign languages in these spatial structures. The following chapters of this part of the book show that there is much cross-linguistic variation in these respects.

Chapter 7
The size of signing space

Research on a broad range of DCSLs suggests, that the signs are articulated on or in front of the body, in the area between the waist and the head. This area is called "*signing space*" (Klima & Bellugi, 1979, p. 51) and is typically extended vertically from the waist to the space above the signer's head and transversely from elbow to elbow when both arms are kept loosely bent as depicted in Figure 50.

Figure 50. Signing space in DCSLs

Shared sign languages, on the other hand, are known to extend beyond signing space described above and use a much larger signing space (Nyst, 2012). The signing space in sign languages such as Enga Sign Language, Urubú Kaapor Sign Language, Konchri Sain, Adamorobe Sign Language and Kata Kolok may extend to the whole body of the signer[88] (Kendon, 1980; Ferreira-Brito, 1984; Dolman, 1986; Nyst, 2007; Marsaja, 2008; De Vos, 2012). In AdaSL there are signs which are articulated on the foot (INSULT), the thigh (SUMMON, TROUSERS) and at the back (YOUNGER-SIBLING) (Nyst, 2007). In KK, signs may also be performed below the waist or behind the body. The sign injection is, for example, articulated on the buttocks, and the sign offspring on the crotch (Marsaja, 2008). This is not the case in any reported DCSL, in which the body parts that are lower than the waist do not normally function as locations for signs.

YSL patterns with other documented shared sign languages in the size of the signing space and a proliferation of locations. Moreover, YSL signers appear to use the entire body as possible places of sign articulation. The ease

of articulation of signs in some locations such as the foot can be explained by the fact that YSL signers normally converse and preferred to be filmed seated, generally cross-legged on the ground, in contrast to the standing position frequently seen in formal recordings of other (Deaf community) sign languages.

Consider the YSL sign YAPA 'sister' in Figure 51. This sign is articulated by touching the lower leg while sitting cross-legged on the ground or standing as also seen in Figure 51.

Figure 51. YSL sign YAPA 'sister'

The sign MÄRI 'mother's mother' is produced at the back of the signer's body, whereby the handshape form varies between the ✊ (A) and Blax handshapes (cf. Figure 52).

Figure 52. YSL sign MÄRI 'mother's mother'[89]

The back of the signer is most likely used as a place of articulation since the *märi-gutharra* relation (grandparent-grandchild relations) is referred to by Yolngu as the backbone of Yolngu society (Williams, 1986).

Further examples of sign locations below the waist are the kinship signs DHUWAY 'husband' articulated on the hip and BÄPA-MUKUL 'father's sister' produced on the knee[90] as depicted in Figure 53.

Figure 53. YSL signs DHUWAY 'husband' and BÄPA-MUKUL 'father's sister'

Similarly to what has been observed by Nyst (2007) in AdaSL, legs are also found as articulators in the YSL sign FOOTBALL and legs can also serve as places of articulations for signs with meaning 'foot' or 'shoes' as shown in Figure 54.

Overall, the analysis of YSL signs in the database reveals a high degree of "multichannelledness" (Nyst, 2007), i.e. YSL signs are articulated by the hand(s), the arm(s), the leg(s) and the face (see 5.3).

Figure 54. Foot as a place of articulation

Based on the compiled data, the YSL signing space encompasses the entire periphery of the signer's body (cf. Figure 55).

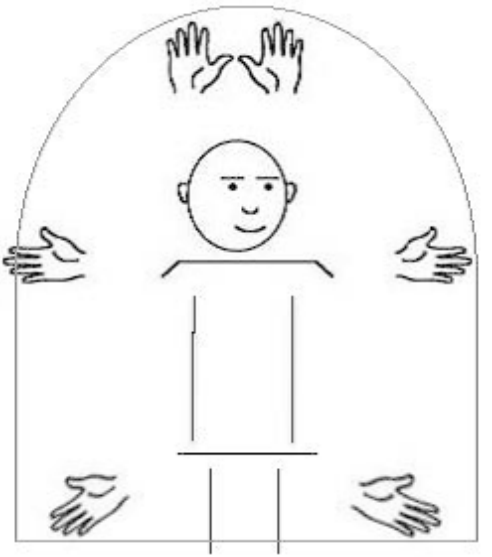


Figure 55. YSL signing space[91]

Thus, along with a smaller set of handshapes as discussed in 5.1, YSL appears to be akin to other shared sign language using a larger signing space and a proliferation of locations.

Chapter 8
Pronominal reference

The use of space is a unique characteristic of the pronominal system of sign languages. The spatial nature of the pronominal system is largely assumed to be a "modality effect", i.e. a structure existing due to the properties of the visual-gestural modality, in which sign language are transmitted (Lillo-Martin, 2002; Sandler & Lillo-Martin, 2006). Previous linguistic research indicates that all signed languages similarly use the space around the signer to convey pronominal reference (McBurney, 2004). Below I demonstrate, however, that not all sign languages conceptualize space in a similar way to encode pronominal reference (see 8.4.6 for the investigation of pronominal reference in YSL).

This chapter offers an overview of how the pronominal system is structured in sign languages by comparing it to pronouns in spoken languages. It shows that space is used uniformly across DCSLs, which constitutes important background information for section 8.4.

8.1. Pronouns in spoken languages

The term 'personal pronoun' traditionally includes forms such as *I, you, he, she* or *we* in English and their equivalents in other spoken languages, which are used to establish reference to speech act participants in discourse (Helmbrecht, 2004). All languages are generally assumed to have personal pronouns. Typological studies on pronominal systems in spoken languages (Bhat, 2004; Helmbrecht, 2004) identify that these are organized into paradigms associated with the following grammatical categories:

(1) Person (first, second, third),
(2) Number (singular, plural, dual, paucal, quadral),
(3) Gender (masculine, feminine, neuter),
(4) Case (nominative, accusative, dative, instrumental),
(5) Clusivity (inclusive, exclusive), and
(6) Politeness (familiar, honorific, super-honorific).

Spoken languages vary with respect to which grammatical categories are marked and which are not. Moreover, some categories (e.g. person and number) seem to be more significant for the referential properties of personal pronouns than the others (e.g. gender and politeness) are (Helmbrecht, 2004, p. 51). In many European languages, pronouns are marked in the categories (1)–(4). Cross-linguistic studies suggest that all spoken languages have a system of grammatical person that distinguish between first, second and third person (Meier, 1990). In English, for example, three persons can be distinguished: first, second and third, in both singular and plural. Even though second person pronoun *you* in both singular and plural is the same. With regard to case, English personal pronouns are inflected in nominative, oblique, genitive and reflexive case. The category (5), clusivity, is not found in any European language and thus seems to be very exotic from a Eurocentric point of view. The clusivity refers by definition to including or excluding the person spoken to. The inclusive/exclusive distinction in pronouns is regularly attested in Australian, Austronesian and northeast Asian languages (Cysouw, 2011b). In Mandarin Chinese, for instance, the difference is made between two first person plural pronouns which are both to be translated as *we* in English: the exclusive pronoun 我们 *wǒmen* means 'I and others' (excluding the addressee) and the inclusive pronoun 咱们 *zámen* means 'you and I' (including the addressee). The last category (6), politeness, is a type of social distinctions between the speaker and the referent determined by the pragmatic rules (Helmbrecht, 2004). Russian, for instance, has two pronouns for the second person reference, *ты ty* and *Вы Vy*. The latter one is used to refer to older people, strangers or colleagues, whereas the former presupposes some degree of familiarity. Thus far, it has been briefly shown that spoken languages diverge greatly as to which grammatical categories are marked in the pronominal system.

8.2. Pronouns in sign languages

Turning to signed languages, I will consider whether the same grammatical categories are encoded in their pronominal systems by reviewing the available literature. I first start with the pointing signs towards physically present referents. Then I continue in 8.2.1 with the notion of "R-loci" and the strategy of "metaphorical" pointing employed by many sign languages to localize referents onto the neutral signing space, which are associated with (physically absent) referents in order to pick out those referents.

Similar to spoken languages, sign languages possess linguistic forms that refer to individual participants in conversation: sender, addressee, and non-addressee (someone else who is or is not present at the time of conversation (cf. Figure 56 for an example of ASL personal pronominal signs). Pronominal reference in sign languages is, however, strongly associated with the use of space. Hence, the reference to the sender, i.e. the signer, is usually established by pointing towards signer's chest (IX$_1$ in Figure 56). In some languages (e.g. in many Asian sign languages and PROVISL) the pointing is done to the nose of the signer similarly to the pointing gestures of non-signers in those cultures (McBurney, 2002; Farnell, 1995).

IX$_1$ IX$_2$ (you) IX$_{3a}$ (s/he)

Figure 56. ASL personal pronominals (singular)[92]

The reference to the addressee or the non-addressee during a signed discourse is signaled by pointing toward that individual without making physical contact with him or her as shown in Figure 56. The articulation of pronominals by pointing to the referents is largely indexic, i.e. pointing signs and has been found in all sign languages of the world (Sandler & Lillo-Martin, 2006). However, a loss of indexicality is observed when the reference is made to non-singular referents (Cormier, 2002, 2007), in particular in case of the first person plural pronouns as depicted in Figure 57.

a) ASL WE b) BSL WE

Figure 57. Personal pronoun WE in ASL and BSL[93]

This holds true only for some pronouns in some sign languages. Engberg-Pedersen (1993) does not find a similar non-indexic plural pronoun in Danish Sign Language. The reference to the third person plural in ASL and BSL are also indexic, i.e. they point to the location of a group of referents. Some languages have also dual, trial and quadruple forms as well (e.g. BSL, DSL, Auslan) (McBurney, 2002, p. 339). These pronominals are also indexic in that they point to the two referents as in the case of the dual form shown Figure 58.

Figure 58. BSL pronominal sign TWO-OF-US[94]

Given the indexic nature of pronominal signs, the question arose in the literature whether the category of grammatical person is encoded in sign language pronominal systems. In connection with the issue of person, there are three entirely different approaches. The three approaches can be roughly divided into three camps which differentiate between i) no person, ii) three way person and iii) two way person distinction (first vs. non-first) in sign language pronominal systems. Traditionally, sign language researchers trying to find parallels with spoken language pronouns proposed a three-way division (Friedman, 1975; Klima & Bellugi, 1979). Pointing to the signer's chest was counted as the first person singular, pointing to the addressee as the second person singular, and pointing to the non-addressee – as the third person singular. However, this analysis turned out to be problematic. Given the indexic nature of pronominal signs, any location in space can be used for a referent, which makes a non-finite number of location and thus non-finite number of referential indices.

To avoid this listability issue of all non-first pronominal forms, some scholars (Ahlgren, 1990; Janis, 1995; Liddell, 2000; McBurney, 2002, 2004) argue that sign language pronouns do not have a grammatical category of person per se. Following their line of argumentation, loci in space cannot be

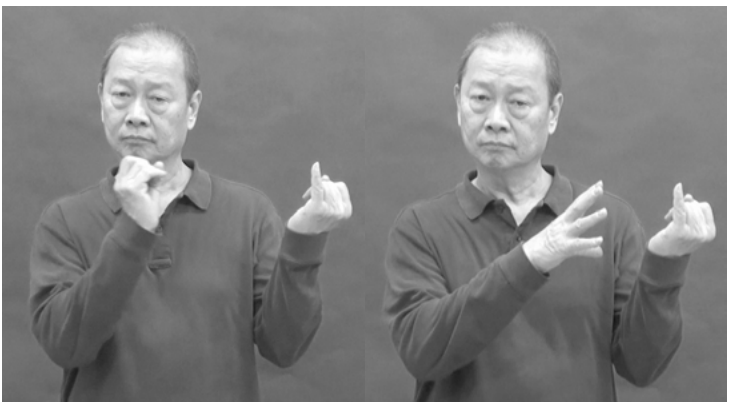
part of the sign language lexicon, because they are not phonologically specified and thus not lexically contrastive. Liddell (2003) treats these points as deictic, gestural and thus nonlinguistic. According to McBurney (2004), sign languages do not possess the grammatical category of person, but rather use "spatial deictics" such as demonstratives. Slobin (in press) should also be affiliated with this camp as in his view there are no person distictions in sign language grammar. He rather characterizes the loci as pronominal affixes, because they do not "exist except when indexed in an utterance".

Another kind of argument comes from Meier (1990) who proposes a two-person distinction – first vs. non-first person. By analyzing the instances known as 'role shift', Meier argues for a distinct first person category and against the distinction of the second and the third person given their identical phonological form. I find Meier's arguments convincing. One must state that the literature is notable for the widespread acceptance of a two-person view in sign languages (Engberg-Pedersen, 1993; Rathmann & Mathur, 2002; Neidle et al., 2000; Lillo-Martin & Meier, 2011; Cormier, 2012).

Another group of researchers sticks to the traditional view of three-person system (Berenz, 2002; Alibašic Ciciliani & Wilbur, 2006; Wilbur, 2012) by assuming that the alignment of hand orientation, eye gaze and the head distinguish the second person from the third in sign languages. Berenz (2002) based her analysis on the findings from Brazilian Sign Language (LSB) and Alibašic Ciciliani & Wilbur (2006) on Croatian Sign Language (HZJ). According to their 'body coordinates model', alignment of eye gaze and hand orientation indicates second person, while no alignment denotes third person. Along this line of argumentation, sign languages encode a three person system: the first person – pointing to the signer's chest or nose, the second person – manual pointing aligns with nonmanual markers (eye gaze, head) and the third person – non-alignment of pointing and eye gaze. One often cited point of critisism against this view of three-person system is an eye-tracking study conducted by Thompson (2006) which shows no systematic gaze distinction occuring with ASL pronouns. A similar investigation of eye gaze in correlation with DGS agreement verbs found even less systematicity than in ASL (Hosemann, 2011). Additionally, Lillo-Martin & Meier (2011, p. 103) find in their recent study that "gaze direction is not sufficient to differentiate points to addressee and points to non-addressed referents as a grammatical marking of second versus third person". Moreover, a pragmatic explanation for the alignment of pointing sign and the eye gaze at the addressee is also possible, which also speaks against a grammatical distinction between second and third person pronouns in sign languages (Zwets, Maier, & de Schepper, 2010).

So far, sign language pronouns were reported to encode person and number. With regard to case, some sign languages have been reported to have possessives (Meier & Lillo-Martin, 2010), whereas spoken languages exhibit a far greater diversity in case marking. Possessive (as well as reflexive) pronominals in sign languages make use of the same locations associated with the referent as personal pronouns but different handshape and orientation. ASL uses the handshape for possessives and the handshape for reflexives (Sandler & Lillo-Martin, 2006). In RSL the handshape is used in non-first person possessives and in first person (Kimmelman, 2009a). Additionally, Meir (2003) reports on previously unattested oblique case marking for the ISL pronominal sign $\text{PRO}_{[bc]}$ which can be interpreted as the pronoun 'me'.

As for the gender marking, there is not enough evidence to consider it a grammatical category of sign language pronominal systems[95] (McBurney, 2004). For Nihon Shuwa and Taiwan Sign Language, for example, pronominal signs marked for gender have been reported (McBurney, 2002). The handshape is reported to designate male referents and the handshape refers to female referents (see an example from TSL in Figure 59 below (Tsay & Myers, 2009, p. 87)).



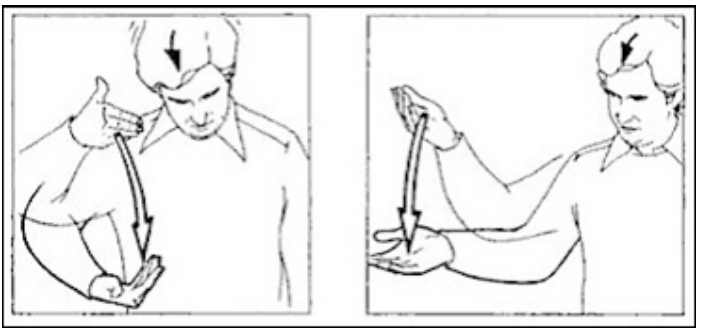
WOMAN_{pro}+TELL
'Tell her'

Figure 59. Gender marking in TSL[96]

Sign languages are reported to have an inclusive/exclusive distinction in their pronominal system; this issue however has not yet received much attention in the literature. From the available studies analyzing clusivity in signed languages (Cormier, 2005; Alibašic Ciciliani & Wilbur, 2006) one can see that their systems are distinct from person marking found

across spoken languages, since they may exclude any referent and not only addressee (Cysouw, 2011b). For ASL, Cormier (2005) identified six different forms of the first person plural pronoun. These are: 1) the first person plural WE, 2) the number-incorporated first person plurals 3/4/5-OF US, 3) the first person plural possessive OUR, 4) the universally quantified first person plural ALL-OF-US, 5) the composite first person plural WE-COMP and 6) the dual form TWO-OF-US (see Figure 58). The first four pronouns, which she calls lexical, are not indexic, i.e. they do not point to locations. They are found to be signed displaced to the signer's left or right side. It turns out that the central form (i.e. not displaced) can be used in both inclusive and exclusive contexts, whereas displaced forms are used in exclusive contexts only. Hence, Cormier concludes that ASL has distinct exclusives, but no inclusive – a feature not attested in spoken languages. Moreover, if spoken languages usually include/exclude the addressee, ASL seems to use "one exclusive marking to exclude any salient discourse participant" (p. 251). Alibašic Ciciliani & Wilbur (2006) report about a possibility in HZJ to include the addressee by aligning the eye gaze, head and hand. However, more research is desirable to verify their claim (cf. Lillo-Martin & Meier, 2011).

Little research has been carried out in the area of politeness distinctions in pronominal systems of sign languages. A number of sign languages including Russian, Korean, Japanese and American Sign Language have been reported so far to have forms of honorific pronouns (Morgan, 2008; Zeshan & Perniss, 2008). Examples of honorific pronouns in ASL are shown in Figure 60.



a) first person singular b) non-first person

Figure 60. ASL honorific pronouns

As Figure 57 has shown, the reference to the first person singular in ASL is done with the ☝ handshape. The honorific reference to the first person singular is, however, articulated with the 🤏 handshape palm facing toward

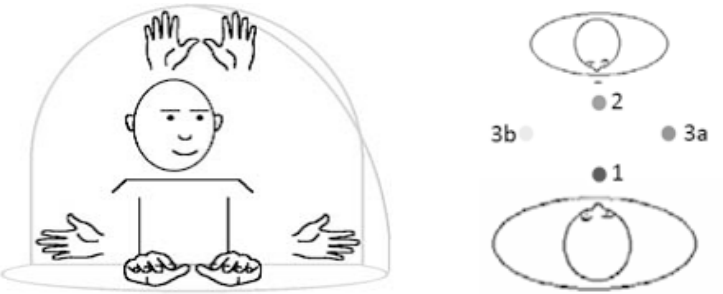
the signer and upward (cf. Figure 60a), while in the non-first person honorific pronoun the palm faces up with a movement down the body line of the person it refers to. Additionally, the nonmanual markers (eye gaze and head) follow the movement of the hand (Baker-Shenk & Cokely, 1980, p. 207). Such honorific reference in ASL is claimed to occur in formal contexts such as religious ceremonies, official speeches, and artistic presentations or as a sarcastic reference.

8.2.1. Metaphorical pointing

Thus far, the pronominal signs were directed towards the referents present in the sign discourse. This section considers how pronominal reference in sign languages is achieved when referents are physically absent, which is crucial for the further discussion in this study (see chapter 8.4.6 for a description of this issue in YSL).

In his recent typology of pointing, Le Guen (2011b) proposes a distinction between direct, metonymic and metaphorical pointing in cases when the body of the signer/speaker represents the ground.[97] The main characteristic of direct pointing is that the target towards which the arm (and also lips or eye gaze) is directed represents an actual place occupied by the actual entity in the real world. Hence, pointing toward a present referent as shown in Figure 56 can be considered a case of direct pointing. Metonymic pointing (also referred to as "deferred" (Borg, 2002)) is, for example, pointing to someone's car in order to refer to this person. What is of more importance and interest in this section is the third type of pointing, which is referred to as metaphorical (or "abstract" by McNeill, Cassell, & Levy (1993). Unlike direct pointing, the target in metaphorical pointing is a section of air in the signing space in front of the signer/speaker not related to its real world referent (Le Guen, 2011b). The signer thus creates an arbitrary or metaphoric relationship between the referent and the location/point in space, for further use later in the discourse.

In sign language literature, the use of metaphoric pointing is known as "nominal establishment" (Sandler & Lillo-Martin, 2006, p. 25). In cases where the referents are not physically present during the signed discourse, pronominal reference is conveyed in sign languages by associating these referents with particular (often arbitrary) locations in signing space as shown in Figure 61b. Location 1 in Figure 61b is reserved for the first person pronoun (near the chest of the signer), the location 2 is associated with the present addressee.



a) Signing space b) Localization of referents

Figure 61. Signing space and localization of referents

Locations 3a and 3b in Figure 61b are potential candidates for the established locations. These locations can be associated with non-present referents. Pronominal signs will then be directed towards these established locations to convey a coreference relation in the further discourse. Consider the BSL example in (1). The signer first produces a nominal SISTER and then articulates an index (which might be the location 3a[98] in Figure 61b) toward the point in space with which this referent is associated. After the referent SISTER is established in space, a pronominal sign can refer back to this specific referent as in (1) (Cormier, 2012, p. 229).

[BSL]

(1) SISTER $INDEX_{3a}$ UPSET. $INDEX_1$ $_1ASK_{3a}$ WHAT. **$INDEX_{3a}$** LOSE BAG
sister there upset. I I-ask-her what. **She** lost bag
'My sister was upset. I asked her what was wrong. She had lost her bag.'

To refer to another non-present individual, the signer assigns him or her a different point. Theoretically, there seems to be no limit to the number of referents that can be pointed to. These points, established in sign space to which the signer can refer back to by a pointing sign, are used for grammatical-syntactic purposes and referred to as "referential-loci" or "R-loci" (Aronoff & Meir, 2005; Sandler & Lillo-Martin, 2006; Lillo-Martin & Meier, 2011). These metaphorical points in sign space associated with the referents are identified with abstract referential indices. This is one of the main claims of the R-locus analysis, which is adopted in this study and is accepted by many sign linguists (Friedman, 1975; Janis, 1995; Lillo-Martin, 2002; Meier, 1990) (but see also alternative analyses such as Liddell's (1990, 2000, 2011) 'indicating analysis', which challenges the R-locus analysis and the 'featural analysis' of Rathmann and Mathur (2002, 2008, 2011; Mathur & Rathmann, 2012) combining the R-locus and indicating analyses together.

8.2.2. Cross-linguistic variation in metaphorical pointing

The overall picture that emerges from the cross-modal comparison of pronominal systems reveals that sign languages are radically different in this respect (McBurney, 2004; Sandler & Lillo-Martin, 2006). First, using the R-loci for pronominal reference makes the pronominal system of sign languages different from that of spoken languages. Secondly, in contrast to spoken languages, little variation has been observed among the structures of sign languages' pronominal systems. Instead, DCSLs have been reported to be largely uniform. The pronominal systems of all DCSLs analyzed to date employ all three types of pointing, i.e. direct and metonymic for proximate referents and metaphorical for non-present referents (i.e. when the referents are distant spatially or cognitively, or their position in real space is irrelevant in the discourse). As described above, if the intended referent is not present, DCSLs investigated to date use established locations in a reduced signing space, which might be associated with the absent referent. Furthermore, following Meier (1990), sign languages encode two persons (first vs. non-first) and differentiate between singular, plural and dual. All sign languages are able to mark clusivity in some way, while case-marking system is rather restricted. With regard to gender and politeness marking, more research needs to be done to know whether gender and politeness belong to the grammatical categories of sign language pronoun system. McBurney thus concludes that there is a "tremendous amount of uniformity across signed languages in the way pronominal reference is structured" (2002, p. 342). An important point to mention here, since it will be relevant in section 8.4.6, is that the spatial nature of pronominal reference or, to be more precise, the strategies of "nominal establishment" of non-present referents have been claimed to be a sign language universal, that is a structure available to all language transmitted in visual spatial modality (Sandler & Lillo-Martin, 2006; Lillo-Martin, 2002). This typological homogeneity does not hold when we take into account the findings from village sign languages (see also section 8.4.6 for a detailed discussion of this issue in YSL). Investigations into the pronominal reference systems of shared sign languages have found striking differences to the use of metaphorical pointing. For shared sign languages, the use of metaphorical pointing has not been reported (Washabaugh, Woodward, & DeSantis, 1978; Davis, 2010; Nyst, 2007; De Vos, Nonaka, & Nyst, 2012). Instead, the signers of these sign languages are found to preferentially use direct or metonymic pointing (Zeshan & Perniss, 2008; Padden, Meir, Aronoff, & Sandler, 2010; Schuit, Baker, & Pfau, 2011). This use of pointing signs was frequently referred to in the literature as *absolute pointing*

(Perniss & Zeshan, 2008; De Vos, 2012) based on the conceptually related absolute Frame of Reference (Levinson, 2003) (for further discussion see section 12.2.2). Kata Kolok, for example, does not establish R-loci in signing space for physically absent referents. Instead, the KK signers use metonymic or absolute pointing towards geographical locations associated with the individuals being referred to. Additionally, KK signers use the so-called 'list buoys' to make associations with entities or referents (De Vos, 2010b; 2012, pp. 199–206). The associations are thus made between, for example, a nonpresent referent and a digit of the non-dominant hand by contacting the tip of the appropriate digit with the shaped dominant hand. To foreshadow the findings of this study, section 8.4.6 will show that YSL signers are also reluctant to use pointing metaphorically and, in particular, the strategies of "nominal establishment" (see also Schuit (2013) for a similar observation in IUR). Person reference in YSL is normally done by pointing to the house of the person (see section 8.4.6 for more details).

8.3. Pronouns in Djambarrpuyŋu

Before approaching the main research questions of this section, the pronominal system of Djambarrpuyŋu, the spoken language of most participants in this study, will be briefly presented. In the description of Djambarrpuyŋu free pronouns, I mainly follow the work by Wilkinson (1991, p. 181). As can be seen in Table 8, the pronominal system of Djambarrpuyŋu distinguishes between first, second and third person. Additionally, similar to many other Australian languages (Cysouw, 2011b), Djambarrpuyŋu has inclusive personal pronouns for speaker plus addressee(s) and exclusive ones for speaker minus addressee but plus somebody else[99] (see section 8.1 for examples of the inclusive/exclusive distinction in other spoken languages). Consider, for example, four personal pronouns in Djambarrpuyŋu with the inclusive/exclusive distinction.

There are 1) the dual inclusive pronoun *ŋali*, which translates in English as 'we two' (you and I); 2) the dual exclusive pronoun *linyu*, which has the meaning of 'us two' (she/he and I); 3) the inclusive plural pronoun 'we all' *limurr* and 4) the exclusive plural pronoun 'we' *napurr*. All pronouns are marked for singular, plural and dual number and for core cases including nominative, accusative, dative, oblique, originative, the oblique stem and reflexive (cf. Table 8). Wilkinson (1991) additionally identifies an emphatic person pronoun paradigm in Djambarrpuyŋu, which is not considered here. Politeness distinction does not belong to a category of personal

Table 8. Basic pronouns in Djambarrpuyŋu[100]

	NOM	ACC	DAT	OBL	OR	OBLS
1sg	ŋarra	ŋarrany ŋarranha-	ŋarraku	ŋarrakal	ŋarrakuŋ(u-)	ŋarrakalaŋu/a-
	rra	(?rrany)	rraku	rrakal	rrakuŋ(u-)	rrakalaŋu/a-
1+2dl	ŋali	(ŋa/i)litjalany (ŋa/i)litjalanha-	(ŋa/i)litjalaŋ(gu-)	(ŋa/i)litjalaŋgal)	(ŋa/i)litjalaŋguŋ(u-)	(ŋa/i)litjalaŋgalaŋu/a-
1dl	(ŋa/i)linyu	(ŋa/i)linyalany (ŋa/i)linyalanha-	(ŋa/i)linyalaŋ	(ŋa/i)linyalaŋgal	(ŋa/i)linyalaŋguŋ(u-)	(ŋa/i)linyalaŋgalaŋu/a-
1+2pl	(ŋa/i)limurr	(ŋa/i)limurruny (ŋa/i)limurrunha-	(ŋa/i)limurruŋ(gu-)	(ŋa/i)limurruŋgal	limurruŋguŋ(u-)	(ŋi)limurruŋgalaŋu/a-
1pl	(ŋa)napurr	(ŋa)napurruny (ŋa)napurrunha-	(ŋa)napurruŋ(gu-)	(ŋa)napurruŋgal	(ŋa)napurruŋguŋ(u-)	(ŋa)napurruŋgalaŋu/a-
2sg	nhe	nhuna nhunanha-	nhuŋu	nhokal	nhokuŋ(u-)	nhokalaŋu/a-
2dl/pl	nhuma	nhumalany- nhumalanha-	nhumalaŋ(gu-)	nhumalaŋgal	nhumalaŋguŋ(u-)	nhumalaŋgalaŋu/a-
3sg	ŋayi	ŋanya ŋanyanha-	nhaŋu	nhanukal	nhanukuŋ(u-)	nhanukalaŋu/a-
3dl	maŋda	maŋdany maŋdanha-	maŋdaŋ(gu-)	maŋdaŋgal	maŋdaŋguŋ(u-)	maŋdaŋgalaŋu/a-
3pl	walal	walalany walalanha-	walalaŋ(gu-)	walalaŋgal	walalaŋguŋ(u-)	walalaŋgalaŋu/a-
		wal	walany	walaŋ	walaŋgal	

pronouns in Yolngu languages, similar to other spoken Australian languages (Helmbrecht, 2011).

8.4. Pronouns in YSL

This section is concerned with the use of sign space for pronominal reference in YSL. The two most important research questions to be addressed here are: 1) how is pronominal reference achieved in YSL, and 2) how does it compare to other sign language types described earlier in this chapter.

After the discussion of the pronominal system in the surrounding spoken Djambarrpuyŋu in 8.3, this section compares the YSL data with the spoken Yolngu language. It is worth analyzing here, since the previous research on NCDSLs has revealed striking similarities in the systems of personal pronouns between the signed and the surrounding spoken languages of Aborigines in Australia (Kendon, 1988).

From the existing data, five pronominal forms in YSL were differentiated, which are glossed here as ŊARRA (the first person singular), IX.PRO (non-first person), LIMURR (the first person plural), ŊALI.INCL (the dual inclusive) and ŊALI.EXCL (the dual exclusive). The personal pronominal system of YSL thus realizes three morphological features, namely person, number and clusivity. I start with the feature of person.

Table 9. YSL pronominal signs

	First person	**Non-first person**
Singular	ŊARRA	IX.PRO
Plural	LIMURR	
Dual	ŊALI.INCL	
	ŊALI.EXCL	

8.4.1. Person

As discussed in section 8.2, the person feature in sign languages is a matter of a long-standing debate in the literature (McBurney, 2004; Alibašic Ciciliani & Wilbur, 2006; Cormier, 2012). YSL appears to distinguish between first person and non-first person.

The first person singular sign ŋARRA is produced by pointing to the signer's chest with one -shaped (Bcurved) hand (see also Appendix I for illustration of all YSL handshapes). In a few cases this sign was also articulated with two -shaped hands (see Figure 63). The sign is shown in Figure 62.

Figure 62. YSL first person pronominal sign ŋARRA

The YSL data reveals some variation with regard to the handshape used. While in the majority of cases the (Bcurved) handshape was used (cf. Figure 62), in a number of instances the pointing to the chest was done with the or handshape (cf. Figure 63).

Figure 63. Handshape variation in the YSL sign ŋARRA

There does not seem to be any difference in meaning between the different forms (cf. Figure 62 and Figure 63). Hence, the handshape variation in first person pronominal sign appears to be allophonic. No handshape other than Bcurved, (B) or (Bopen) (cf. Figure 63) has been used with reference to the first person singular in YSL. It is interesting, that in all NCDSLs investigated by Kendon (1988), the first person pronominal forms were produced with the (Index) handshape.

The YSL non-first person pronominal signs, referred to as IX.PRO, is always produced with the (Index) handshape (cf. Figure 64). As is evident

from Figure 64, no difference can be found between the types of non-first person pointing to the addressee as in Figure 64a and to a third person as in Figure 64b besides a different locus in space. In Figure 64a, the reference is made to the addressee, the individual being spoken to. In Figure 64b, the reference is made to a third person (on the elicitation picture). In both cases, the signer uses the ☝ (Index) handshape in connection with directed eye gaze[101] while pointing to the intended referent.

a) reference to addressee 'you' b) reference to non-addressee 'he'

Figure 64. YSL non-first person pronominal signs

Hence, YSL appears to make no linguistic distinction between the second and the third person reference. From my preliminary analysis, I conclude that YSL does not grammaticalize the second – third person distinction and differentiates between first person and non-first person (see also De Vos (2012, pp. 375–378) for a similar observation in KK). This observation is in line with the widely accepted two-person system proposed by Meier (1990), who argued for no linguistic distinction between second and third person in ASL (see section 8.2 for more information). The points to the second and to the third person are only differentiated by the location that is being pointed to. The referents are not selected using distinct mechanisms in the grammar. The reference to the first person singular is articulated at a fixed location (the signer's chest) with a distinct handshape as shown in Figure 62. Although handshape variation is observed in the signs for the first person singular, the handshapes used for the first person in YSL differ from the handshape used for non-first person. While for the first person reference ☝-like handshapes are always used, i.e. handshapes in which all digits are extended, for the non-first person, an extended index finger is always used in the data corpus. This finding may be taken as evidence for grammatical first person in YSL.

The multiple realizations of the non-first person reference observed in the YSL data are not differentiated as shown in examples below. The pronominal forms in examples (2)–(3) are displayed in Figure 64ab above.

(2) **IX.PRO$_2$** DHIŋKIŋ BITJA IX$_{3a}$ QS [YSL]
2SG think picture this what
'What do you think is shown on this picture?'
Sequence01_13JUL_G1_2010.mpg

le

(3) MÄRI'MU MARRTJI. RIRRIKTHU **IX.PRO$_3$**
father's father go sick 3SG
'The grandfather is walking. He is sick'
Sequence09_G_D_classifier stimuli_2009.mpg

Thus far, it has been shown that YSL pronominal signs are marked for person (first vs. non-first). Other first person pronouns are presented in the sections on number and clusivity.

8.4.2. Number

With regard to number, YSL marks singular, plural and dual, similar to previously analyzed sign languages (see 8.2). The observation made for DGS that the singular and dual forms index their referents more directly than the plural pronoun form also holds true for YSL (Steinbach, 2012).

The first person collective plural form LIMURR is always signed with the two 🤟-shaped hands making an arc sweeping movement in the space in front of the signer (cf. Figure 65) independent of the locations of the referents.

Figure 65. YSL pronominal sign LIMURR (the first person plural)

As mentioned in 8.3, the surrounding spoken language, Djambarrpuyŋu, distinguishes between exclusive and inclusive forms in first person plural (see Table 8). In YSL there is only a manual form, glossed here as LIMURR. Interestingly, it has been found that the inclusive/exclusive distinction on first person plural pronominal was performed nonmanually in the data. Consider, for example, the two utterances below. In both cases, the author was sitting next to the signer. In (4) the signer produces the manual sign LIMURR while he intends to designate a group including the addressee, whereas in (5) the signer is telling a story which happened a month before the elicitation sessions and did not mean to include the addressee in the reference. Both manual pronominal signs in (4) – (5) are identical.

(4)

limurr		
LIMURR	DJÄMA	[YSL]
1PL	work	

'We (INCL) are working'.

Sequence08_G_sentences_2009.mpg

(5)

napurr			
LIMURR	DJATTHU	DHARPA	[YSL]
1PL	chop	tree	

'We (EXCL) were chopping the tree.'

Sequence17_21JUL_L_2010.mpg

Notice that the pronominal sign LIMURR in the examples shown in (4)–(5) is accompanied by different mouthings, which mark the inclusive/exclusive distinction. Hence, the inclusive/exclusive distinction of the first person plural pronominal sign LIMURR appears to be distinguished through mouthing of Djambarrpuyŋu words *limurr* and *napurr* in YSL.

With regard to the non-first person, no separate plural form was found in the YSL data. To refer to the non-first person plural, the pointing signs were identical in form with the earlier described sign IX.PRO depicted in Figure 64. No multiple reduplications of short pointing movement along an arc in front of the signer as plural marker, previously reported for other sign languages (Steinbach, 2012; Cormier, 2002, 2012) were observed in YSL. Hence, the separate distributive form of plural[102] is absent in the collected YSL data. YSL appears to distinguish number (singular, plural and dual) in the first person forms only (cf. Table 9). The description of the two pronominal dual forms in YSL is given in 8.4.3 below.

8.4.3. Clusivity

YSL appears to make the inclusive/exclusive distinction in dual. Hence, it can be differentiated between two lexicalized dual pronominal forms glossed here as ŊALI.INCL (the dual inclusive) and ŊALI.INCL (the dual exclusive).

The dual inclusive form ŊALI.INCL is used to refer to precisely two referents in the discourse with the meaning 'we two' or 'both of us', including signer plus addressee. Both dual forms (inclusive and exclusive) have a changing handshape (see Figure 66 & Figure 67). They start with the handshape moving in the direction the intended referent and end with the handshape near to the signer's chest with the palm facing the signer (this location is reserved for the first person singular pronominal) (see the right picture in Figure 67).

The difference between the two dual forms appears to lie in the directionality of the sign. Consider the two examples below. In Figure 66, the form ŊALI.INCL including the addressee is depicted (see also example (6)). The axis of the movement is straight, outward from the signer's body directed towards the location of the addressee.

Figure 66. Dual inclusive pronominal sign ŊALI

		marrtji		*shop*	
(6)	**ŊALI.INCL**	MARRTJI$_{3a}$	ŊATHA	IX$_{3a}$	[YSL]
	DU.INCL	go	food	there	

'We (you and I) are going to the shop to get some food.'

Sequence17_21JUL_L_2010.mpg

Figure 67 shows the form ŋALI.EXCL which refers to speaker minus addressee and thus identified as an exclusive pronominal sign (see example in (7) which is depicted in Figure 67). In the exclusive form ŋALI.EXCL the movement was from the signer's body diagonally outward to the right towards the location of the referent.

Figure 67. YSL pronominal sign ŋALI.EXCL

(7) $\underline{ht_{minimal}}$
ŋALI.EXCL EXIST$_{3a}$ [YSL]
DU.EXCL stay-here
'We (he and I) are staying here.'
Sequence03_10JUL_Mapuru1_2010.mpg

Notice that these dual forms are not derived by numeral incorporation, as has been claimed for other sign languages (Cormier, 2002).

8.4.4. Case

In addition to the constructions described above, the question arises here whether YSL encodes other grammatical features in its pronominal system, such as case. As discussed in 8, many sign languages use separate possessive pronouns. In NCDSLs, Kendon (1988) also finds a distinct set of possessive pronouns. For these sign languages, a very close mapping with the spoken language morphology has been documented, so that the possessive forms are signed by adding a special possessive suffix marker to the pronominal sign. In Warlpiri Sign Language, for example, the possessive first person pronoun is a compound consisting of a pointing sign with an index finger to the face of the signer followed by the two-handed suffix marker with the meaning 'associated with' (Kendon, 1988).

The YSL data analyzed in this study reveal that pointing signs used to express pronominal possession in YSL like *my grandfather* or *his boat* are indistinguishable in form from those expressing pronominal reference already described in 8.4.1 (see also Perniss & Zeshan, 2008, p. 131 for a similar finding in Kata Kolok). Hence, I would like to propose that YSL does not have a separate set of possessive pronouns. The pointing signs used to express possession are identical to the respective pronominal pointings such as ĐARRA (the first person singular) and IX.PRO (the non-first person). For example, to express pronominal possession like *my grandfather*, pointing to the possessor is used as shown in (8).

[YSL]

(8)

ĐARRA	MÄRI'MU
1SG	father's father

'My grandfather'

Sequence09_G_D_classifier stimuli_2009.mpg

Pointing signs indicating possession may precede or follow the nominal possessum (cf. examples in (8) – (10)).

(9) **QS** NHÄMA YAPA **ĐARRA** IX_{3a} [YSL]
when see sister **1SG** [name-sign]
'When have you seen my sister, the one with the scar?'

Sequence12_G_sentences_2009.mpg

(10) **ĐALI.INCL** ĐAPIPI EXIST QS [YSL]
DU.INCL mother's brother stay where
'Where is our uncle?'

Sequence10_14JUL_T_2010.mpg

Furthermore, the analyzed data reveals no distinction in the YSL pronominal signs with regard to gender of referents or politeness.

8.4.5. Summary & comparison to NCDSLs

To sum up so far, on the basis of presently available data, I have described five different pronominal signs in YSL, which are presented in Table 9. The three grammatical features for which YSL pronouns are marked are person, number and clusivity. The distinction between first and non-first person in YSL is observed as providing evidence for the two-person theory of Meier (1990). YSL encodes a category of number in its pronominal system only in the first person forms differentiating between singular, plural and dual. There is the first person collective plural form LIMURR, which can be accompanied by mouthings to make an inclusive/exclusive distinction. Furthermore, it has been shown that YSL stands out from other known sign languages in that it has no separate distributive form of plural. Additionally, two dual forms can either include (ŊALI.INCL) or exclude the addressee (ŊALI.EXCL), similar to the inclusive/exclusive distinction described for many spoken languages (see section 8.1). The strategy to exclude any referent by changing the location of the pronoun sign (from the center to the signer's right side) described for other sign languages such as BSL or ASL (Cormier, 2012) was not observed in the collected YSL data.

To draw a comparison between with other Australian Aboriginal sign languages, as described by Kendon (1988), it becomes evident that YSL shows less influence from spoken Djambarrpuyŋu. The influence from the surrounding spoken language is primarily seen in the data through the use of mouthings with the first person collective plural form LIMURR to mark clusivity. No suffix marker or compound forms similar to the morphological structure of the spoken language pronoun forms have been found in the pronominal system of YSL.

8.4.6. Pointing to a house: the use of metonymic pointing in YSL

Thus far, pronominal pointing was discussed denoting referents, which were present during the signed discourse. In this section, some details are given about how pronominal pointing is expressed in YSL for referents that are not present during the signed discourse. As shown in 8.2.1, DCSLs use metaphorical pointing (Le Guen, 2011b) for non-present referents (i.e.

when the entities are too distant spatially, or their position in real space is irrelevant in the discourse) (see Friedman, 1975 for ASL; Ahlgren, 1990 for SSL; Engberg-Pedersen, 1993 for DSL; Hatzopoulou, 2008 for GSL, among others). The signers can thus establish arbitrary locations in the neutral signing space in front of them to localize discourse referents and refer back to these location later in the discourse (cf. the notion of the *R-loci* (Lillo-Martin & Meier, 2011)).

In recent studies on shared sign languages in small-scale societies, no use of metaphoric pointing for non-present person reference has been observed. Instead, the shared sign language signers are reported to use direct or metonymic pointing (see section 8.2.1 for the discussion of these terms) for any non-visible present entities: the person in front of them or the city far away (Washabaugh, Woodward, & DeSantis, 1978 for PROVISL; Perniss & Zeshan, 2008; De Vos, 2010, 2012 for Kata Kolok; Sandler, Aronoff, Meir, & Padden, 2011 for ABSL; Schuit, 2010; Schuit, Baker, & Pfau, 2011 for IUR; Le Guen, personal communication for Yucatec Maya).

It is thus very intriguing to tackle the question of how YSL signers refer to participants that are not present. It will be shown that YSL patterns with other shared sign languages described so far. The YSL signers do not establish conceptual locations for referents in signing space and rather use direct or metonymic pointing. The typical way to refer to individuals in YSL, which are not present during the discourse, is by using a kinship sign and/or a pointing sign oriented towards a geographic location associated with that individual, such as his or her house.

To look at this issue in YSL in more detail, consider the utterance 'I will call him' in (11) referring to a non-present individual, an uncle who lives on the very top of the island Galiwin'ku. In this conversation between two hearing YSL signers, the woman on the right told the one on the left that she wishes her uncle would come to visit. Thereupon, the signer on the left produces the utterance presented in (11), in which she performs a pointing with the ☝ handshape in a single movement, directed towards a geographic location of a settlement Gäwa to the northeast on the top of island, where the uncle usually lives. The person who is the referent of the pronominal sign IX.PRO in (11) is not in the immediate vicinity.

As can be seen in example (11), the YSL signer does not establish an arbitrary point in the neutral signing space sign to associate with this referent as described for many DCSLs (see 8). Rather using her knowledge of the local geography, the signer points to a real-world location, the place where the uncle lives. This pointing appears to be motivated by cardinal direction.

(11)

ŊARRA
1SG

RIŊIMAP
call

IX.PRO$_{3a}$
3SG
'I will call him'
Sequence12_15JUL_L_2010.mpg

During the conversation, this point was used anaphorically, i.e. pointing to the same locus was used again to refer back to the mentioned referent. This pattern, being cross-linguistically extremely exceptional among sign languages, has been previously noticed in a number of village sign languages. Signers in some shared sign language, if not all, were reported to indicate pronominal reference by pointing to geographical locations frequented associated with the individual referred to - such as a person's house or work place (see Perniss, 2007; Perniss & Zeshan, 2008, De Vos, 2012 for Kata Kolok; Sandler, Aronoff, Meir, & Padden, 2011 for ABSL; Schuit, Baker, & Pfau, 2011 for IUR; Nyst, 2012, p. 564 for AdaSL; Davis, 2010 for PISL).

Note that pronominal pointing in example (11) is produced with the fully extended arm, indexing a location far away from the signer. A similarly outstretched arm has been observed with pointing to other existing far-away

places, e.g. Darwin or Melbourne or pointing to entities, which are far away such as kangaroo or camel. Overall, a difference between pointing in YSL to places nearby (school, church or kangaroos) and remote places was observed in the data. In the former case, the outstretched arm was lifted at about 90° angle from the side of the body. In the case of distant or unknown entities (e.g. Germany[103] or camel) the fully extended arm was quickly raised up and held in the air almost vertically. Most notably, this *up is far communicative rule*[104] was also noted in pointing signs and gestures among speakers and signers of Yucatec Maya (Le Guen, 2011ab, personal communication), among speakers of other Australian Aboriginal languages such as Arrernte (Wilkins, 1999, 2003, p. 187), Guugu Yimithirr (Haviland, 1993, p. 26; Levinson, 2003, pp. 261–2), among speakers and signers of Warlpiri and Warumungu (Kendon, 1988, p. 241) and among the signers of KK (De Vos, 2012, pp. 335–8).

Example (11) illustrates, that in contrast to what has been described for DCSLs such as DGS, in YSL in case of individuals non-present during signed discourse, the pointing signs are based on the real-world topography to indicate the location of referents, and not the arbitrary locations established in signing space around the signer (cf. De Vos, 2012 for the same observation in Kata Kolok). Furthermore, the pointing to distant invisible locations denoting referents in YSL seems to indicate the correct cardinal orientation. Carrying out systematic experiments to examine the directional accuracy of YSL pointing signs was beyond the scope of this study, but the orientation of the pointing signs was noted to be accurate with accordance to the cardinal directions on the map.

In other words, YSL does not make use of metaphorical pointing (see 8.2.1). The YSL signers tend to use pointing to real-world locations for non-present person reference. Consider another example 12 to support this claim.

The conversation between two signers, one deaf and one hearing, is about someone's aunt. The signer on the right side (see (12)) mentions first the participant, the aunt (cf. (13)). Later in the conversation, she points behind her back to the house where the aunt lives (see (12)).

Notice that the house being pointed to in (12) to refer to the aunt is not located far from the signer. In this case, the arm used in pointing is not fully extended if compared to (11). Hence, the height of the arm raising depends on the proximity of the entity. In other words, a generalization can be made for the YSL pronominals that in pointing signs the angle of the arm from the body is smaller if the entity is closer and the angle of the arm is larger if the entity, being referred to, is far away. This observation is in accordance with the above mentioned *up is far/remote* rule.

[YSL]

(12)

ŋATHA
food

DHARRWA
a lot/many

MARAM
give

IX.PRO$_{3a}$
3SG

'Does she share a lot of food?'

Sequence13_16JUL_W_2010.mpg

(13) BÄPA-MUKUL QS [YSL]
father' sister where
'Where is your aunt?'

Sequence13_16JUL_W_2010.mpg

The conversation between two signers, one deaf and one hearing, is about someone's aunt. The signer on the right side (see (12)) mentions first the participant, the aunt (cf. (13)). Later in the conversation, she points behind her back to the house where the aunt lives (see (12)).

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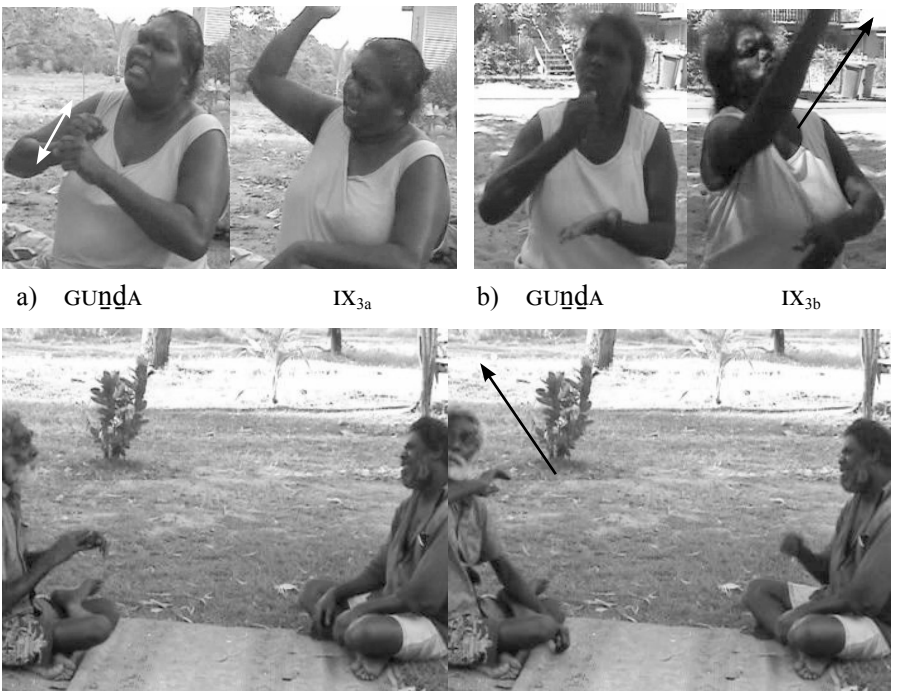
The above examples show that YSL signers use pointing signs towards real locations of people's houses as a pronominal reference. In this respect, YSL appears to be very distinct from the better-known DCSLs. A similar pointing pattern is also observed in locational pointings, which will be briefly mentioned here to demonstrate the use of pointing patter in YSL. Take, for example, a compound sign for 'Darwin' GUn̲d̲A+IX$_a$ 'STONE+IX$_a$'. The second part is a pointing sign[105], which differs in its orientation depending on the location of the signers. Consider Figure 68 displaying three different renditions of the compound for 'Darwin'. In Figure 68ab the signers were in Galiwin'ku, one facing east (cf. Figure 68a) and the other facing west (Figure 68b). In Figure 68c the signers are shown who were in Mapuru. These pointing signs are oriented in accordance with cardinal directions. While making spatial reference, Yolngu signers seem to rely on their geographical and directional knowledge of the surroundings and point to the real-world location regardless of their own location and orientation. The examples in Figure 68abc show that YSL pointing signs to a location by signers at different angles preserve the fixed bearings of this location.

The above examples of pronominal pointing, as well as the last example of locational pointing (cf. Figure 68), show that in YSL all non-present (spatially or cognitively) referents (people, objects, places) are typically identified by pointing to their real-world locations. Yolngu signers can determine the location of an entity in terms of fixed landmarks from anywhere in case of non-visible entities. Research suggests that such direct (or metonymic) pointing for non-present (non-visible) entities in various languages is based on signers' familiarity with the topographical features of the land (Wilkins, 1999). From this, it follows that when being in an unknown environment this pointing strategy can hardly be maintained. This pattern is evidenced in the study conducted by Perniss & Zeshan (2008, p. 130), in which a Kata Kolok signer from Bali was unavoidably using metaphorical pointing during the data elicitation sessions in the Netherlands. Similar observation was made in this study. During the eliciation sessions, which were carried out with two Yolngu signers in Darwin



a) GUNDA IX$_{3a}$ b) GUNDA IX$_{3b}$

c) GUNDA IX$_{3c}$

Figure 68. YSL sign Darwin

about 600 km away from the Yolngu land, the YSL signers were found to establish an arbitrary location in space in front of them if the entity referred to was not visually accessible. This occurred, however, exceptionally infrequent. During these sessions in Darwin, a hierarchy of the strategies used by the two Yolngu signers was observed for pronominal reference to the non-present animate individuals. The first strategy was pointing in the actual direction of the Yolngu settlement; the second one was the usage of kinship signs (that is repeating the full NPs), and the third one was the establishment of arbitrary points in signing space as seen in (14). It must be noted, however, that the third strategy was used least often. To illustrate an instance of such pointing, consider the example in (14). The referent being referred to in this utterance is the signer's sister, who is not present in the context of utterance. The signer indexed the location on her right side as shown in (14). The location seems to be chosen arbitrarily in the signing space.

[YSL]

(14) EXIST **IX.PRO$_{3a}$** YAPA **$_{3a}$ŊALI.EXC$_1$**
stay **3SG** sister **DU.EXC**
'My sister and I, we stayed together'.
Sequence12_G_sentences_2009.mpg

Moreover, this location appears to be reserved for the given discourse referent (similar to R-locus), which can be seen by the anaphoric use of the indexic pronominal sign ŊALI.EXC which is directed towards the same locus in space at a later instance in time for coreference.

As mentioned above, the use of metaphorical pointing indicating non-present referents is exceptionally rare in YSL and has been observed in only a couple of instances during the elicitation sessions outside Yolngu settlements. At the same time, example (14) shows that the metaphorical pointing for pronominal reference is possible in YSL, but is not practiced (the possible reasons for this are discussed in chapter 12). The use of list buoys, which are frequently used in KK (De Vos, 2012) were not attested in the YSL data. Overall, YSL signers appeared reluctant to use metaphorical pointing in signing space for pronominal reference. In the data recorded in Galiwin'ku and Mapuru, the pointing was always direct. This observation is at odds with the notion of "nominal establishment" being universally available to all languages in visual-gestural modality. Whereas a multitude of studies is continuously highlighting typological uniformity across sign languages with respect to this mechanism (McBurney, 2004; Rathmann & Mathur, 2002; Pizzuto, 2007), the data presented support the view that there is variation among sign languages in the use of space for pronominal reference.

8.5. Summary

The findings of this section lead to the following overall picture. YSL uses space for indicating the visibly available referents as well as non-visible referents. In the case of visible referents, pronominal direct pointing does not seem to be largely different from those of better-analyzed DCSLs. There are

five different pronominal signs in YSL: ŋarra, limurr, ŋali.incl, ŋali.excl and ix.pro. YSL pronominals are marked for person, number and the inclusive/exclusive distinction. YSL does not possess distinct possessive pronominal forms[106], unlike some other sign languages such as RSL (see Kimmelman, 2009a) In the case of non-present referents, however, YSL signers do not shift to metaphorical pointing as in many other previously documented sign languages, but rather use direct and metonymic pointing, similar to other shared sign languages. YSL signers do not establish abstract loci in the neutral signing space. Instead, they usually point to the referent's house for person reference (see also section 12.1.1 for discussion).

Chapter 9
Verb directionality

The previous chapter has shown that many sign languages can manipulate space by establishing positions (R-loci) in it for hypothetical, non-present referents. A phenomenon referred to as verb directionality (known also as 'verb agreement' in the literature) in sign languages is also based on setting up locations for referents in sign space. A set of verbs in many sign languages are reported to change their form by starting the movement at one location (known as 'R-locus') associated with a particular grammatical/semantic role of a verb argument and ending at another established R-locus. In addition to marking the changes in meaning through a change of the direction of movement, a change in the orientation has also been reported for some verbs.

This chapter first provides background information on the phenomenon of directionality in sign languages. Afterwards YSL will be investigated with respect to directionality. The chapter is organized as follows. In 9.1 a phenomenon of verb agreement in spoken languages will be briefly outlined. Section 9.2.1 turns to a discussion of sign language verb classes, which is important, as the directionality of sign language verbs is restricted to one set of verbs. Next, different views on the analysis of verb directionality in sign languages will be discussed in 9.2.2. Along the way, main parts of the argumentation for different positions will be summarized. Section 9.3 is concerned with verb directionality in YSL. It will show that YSL makes limited use of spatial verb modifications to mark core arguments of the verb. Given this limited use of spatial morphology, it is essential to examine whether YSL has a rigid syntactic structure for the identification of the subject and object in a transitive clause. This will be analyzed in section 9.4

9.1. Verb agreement in spoken languages

Two different notions of agreement are usually distinguished. The first notion, known as concord, defines agreement as a "covariation between words, which can be attested in various parts of the system of a language" (usually within a DP) (Cysouw, 2011a). For illustration consider an ordinary instance of adjective-noun concord in two Russian noun phrases in (1)[107].

(1)	нов**ая**	книга	нов**ые**	книги	[Russian]
	novaja	kniga	novye	knigi	
	new.SG.FEM	book	new.PL.	book.PL	
	‘a new book‘		‘new books’		

The second notion of agreement is restricted to person-number-gender inflections on verbs as demonstrated by the Russian verb in (2) which agrees with the pronoun in these features.

(2)	она	купи**ла**	вчера	торт	[Russian]
	ona	kupila	včera	tort	
	3.SG.FEM	buy.past.**3SG.FEM**	yesterday	cake	
	‘She bought a cake yesterday.’				

Here I adopt Cysouw’s (2011) terminology and use *agreement/concord* and *agreement/inflection* for the two notions, respectively. In the following only one type of agreement, namely agreement/inflection will be considered leaving agreement/concord aside.

All languages possess strategies to identify who is doing what to whom in a message, namely strategies to describe the relation between a verb and its arguments. Two main strategies to mark verb arguments in spoken languages are word order and agreement morphology. For some languages, especially topic-prominent[108] ones such as Mandarin Chinese, word order serves as the most crucial syntactic device for information structuring. Mandarin Chinese is claimed to be a SVO language, at least in terms of statistical predominance (Sun & Givon, 1985). Hence, the SVO order illustrates that the first noun phrase (奶奶*nainai*) in (3) is the subject of the sentence.

[Mandarin Chinese]

(3)	我	的	奶奶	前天	碰见	在	路上
	wo	de	**nainai**	qiantian	pengjian	zai	lushang
	1SG.POSS	PART	**grandmother**	yesterday	meet	on	street

她	的	女	朋友
ta	de	nü	pengyou
3SG.POSS	PART	female	friend

‘My grandmother has run into her friend yesterday’

In other languages, grammatical relations are predominantly marked by verbal agreement, i.e. person/number/gender inflection on the verb with reference to the subject and sometimes the object. Consider the same sentence as

previously presented from Russian which displays a rather "standard agreement system" (Corbett, 2006). In (4) the verb *встретила vstrelila* 'to meet' represents the target in agreement relations and agrees with the controller of agreement in the features person, number and gender. The controller is a nominal expression *моя бабушка moja babuška* 'my grandmother', which is claimed to have certain inherent features that are matched by the verb.

[Russian]

(4) Моя бабушка встрети-**л-а**
moja babuška vstretila
1SG.POSS grandmother.NOM.**SG.FEM** meet.PERF.ASP.PAST.**SG.FEM**

вчера случайно на улице свою подруг-**у**
včera slučajno na ulice svoju podrugu
yesterday by chance on street 3SG.REFL.POSS friend.ACC
'My grandmother has run into her friend yesterday'

There are also some spoken languages, such as Hungarian, in which verbs agree in number and person with their subjects and objects. As shown in (5) object agreement in Hungarian encodes the definiteness feature of the direct object.

(5) **L´at-ok** egy madar-at [Hungarian]
see.1.SG.INDEF an bird.**ACC**
'I see a bird'

(Coppock & Wechsler, 2010)

However, cross-linguistically the dominant agreement pattern is verbs agreeing with their subjects rather than with their objects. Verbal person marking on the object alone is an exception among spoken languages and is found, for example, in a few Khoisan languages (Siewierska, 2011).

Cross-linguistic research shows that spoken languages exhibit broad variation in agreement patterns (Corbett, 2006; Siewierska, 2011). For sign languages, the opposite has been observed. First cross-linguistic comparisons among dozens of sign languages found no cases that deviate from ASL with regard to spatial morphology and syntax (Supalla & Webb, 1995 cited in Newport & Supalla, 2000). Sign languages are still believed to show little variation, particularly in spatial grammatical structures. The best example showing striking similarity among all sign languages is that only a set of verbs, and not all verbs, participates in the verb agreement system, a characteristic that is clearly distinct from spoken language agreement (Janis, 1995;

Mathur & Rathmann, 2006; Meir, 2002). In the next section, I introduce the sign language verb classes and describe what is understood under directionality (or 'verb agreement') in the sign language literature.

9.2. Verb directionality in sign languages

9.2.1. Sign language verb classes

Sign language verbs are typically organized into the three major classes of plain, agreement and spatial verbs. This traditional tripartite division of verb types goes back to Padden's (1988) proposal for ASL. The three verb classes are claimed to differ in the use of signing space for referential purposes. While plain verbs do not use the signing space, the latter two classes use the space referentially, although in different ways.

Plain verbs are relatively fixed in space and do not move through it to show any grammatical information. DGS examples include verbs such as KAUFEN 'to buy', ZAHLEN 'to pay' or MÖGEN 'to like'. Their form remains invariant. These verbs use the body as the location and carry no information about person, number or location of the subject or object. Consider Figure 69 showing the ASL verb EAT, which does not vary with respect to person or number of the subject and object.

Figure 69. ASL verb EAT[109]

The second category of verbs has been called "inflecting verbs" (Padden, 1988), "agreement verbs" (Sandler & Lillo-Martin, 2006; Padden, Meir, Aronoff, & Sandler, 2010) or "indicating verbs" (Liddell, 2000; Johnston & Schembri, 2007; de Beuzeville, Johnston, & Schembri, 2009). They contain information about person and number of the subject and object, which is communicated by palm orientation and path movement through syntactic space. Depending on the literature, agreement verbs fall into further subcategories viz. single-agreement verbs agree with the object, double agreement

verbs can agree with both the subject and the object. Furthermore, they can be classified by transitivity (transitive vs. ditransitive) and by direction (forward vs. backward) (Padden, 1988). Unlike plain verbs, agreement verbs show person agreement by altering the beginning and the final points of the verb sign previously established in the syntactic space. It is the main linguistic feature that is claimed to trigger the modulation of the verb. Take the ISL verb SHOW in Figure 70 for example: whereas 'I show you' is signed by the forward motion from a point near the signer toward the addressee, 'you show me' is signed with a backward agreement verb, since the beginning and endpoints of the sign are just the opposite. The ISL verb SHOW can be modified to indicate more than one referent. Verbs are modified to express dual or plural. The plural marking is expressed through a horizontal arc (cf. Figure 70) and has reportedly some restrictions in its realization.

$_1$SHOW$_2$ 'I show you' | $_2$SHOW$_1$ 'You show me' | $_1$SHOW$_{ARC}$ 'I show you (plural, exhaustive)'

Figure 70. ISL verb agreement[110]

Padden (1988) shows that unlike the singular form, the plural form is limited to the object. Additionally, Rathmann & Mathur (2008) show that the number feature is restricted to verbs selecting two animate arguments only as shown in (6)–(7). The DGS example in (7) is considered ungrammatical since the object is non-animate. Note that the notational conventions were adapted from the source and differ from the ones used in this book: '1' stands for first person and 'x' for non-first person.

(6) IX$_{1.sg}$ PERSON-CL++ **FRAGEN$_{1.sg→x.pl}$** [DGS]
'I ask many people' (animate)

(7) *IX$_{1.sg}$ BUCH++ **KAUFEN$_{.sg→x.pl}$** [DGS]
'I buy many books' (non-animate)

(Rathmann & Mathur, 2008, p. 195)

The phenomenon referred to as verb agreement in sign languages has been reported to occur in agreement verbs only. More precisely, agreement usually occurs in verbs with animate arguments in an event of transfer in which some concrete or abstract entity changes its owner (Meir, 2002). In sign language agreement R-loci are established in space identical to those described for the pronominal system. Similarly, these loci can be actual locations of present referents or arbitrary locations assigned for non-present referents. Thus, sign language verb agreement is also called locus agreement (Pfau & Steinbach, 2006). Consider the example of agreement in ISL shown in Figure 70. In signing 'I show you', the signer's hands move from the locus of the subject, the signer, to the locus of the object, the addressee. Thus the direction of the movement (as in the ISL verb SHOW), and often the orientation of the hand(s) in some verbs, is interpreted by many scholars as inflection showing person and number agreement. In contrast to the ISL example, in (8) the third person referent is not present. Hence, the movement of the verb GIVE is executed from the locus near the addressee to a locus associated with the third person referent in the signing space in front of the signer.

(8) BOOK, FINISH **f+GIVE+rt** [Auslan]
'Have you given him (or her) the book?'[111]
(Johnston & Schembri, 2007, p. 144)

Unlike the agreement verbs, spatial verbs can give information about the path motion, the change of orientation, the location and the existence of the referent, the movement, the manner of motion, the trajectory, the speed and the class of nouns moved or located by means of classifiers (for more information on classifiers see 10.2). Spatial verbs in DGS include verbs GEHEN/KOMMEN 'to go/to come' or BEWEGEN 'to move' etc. The beginning and endpoints are determined not by the syntactic arguments of subject or object, but by spatial referents. In these verbs, movement begins at one location and ends at another. The initial and final positions of the verb CARRY in (9) indicate the location, the path and trajectory of an object being carried.

(9) CAN PRO-2 **lf+CARRY+rt** PLEASE [Auslan]
'Could you carry it (from there to there), please?
(Johnston & Schembri, 2007, p. 145)

Similar to agreement verbs, spatial verbs are also directed towards locations in sign space, specifying locatives. The body is normally not involved in the event at all or is used as a spatial point. As another example, consider the

verb in Figure 71 (Chang, Su, & Tai, 2005, p. 270). The TSL spatial verb RUN-INTO contains information about the movement of the subject from one location to the other.

HOUSE CHILD **$CL_{human.being}$-RUN-INTO-CL_{house}**

Figure 71. TSL phrase 'The child ran into the house'[112]

There are also alternative analyses of sign language verb classes different from that of Padden's (1988). Other authors argue that the distinction between agreement and spatial verbs is not straightforward. According to this view, non-plain verbs can agree with either locative or person arguments (Quadros & Quer, 2008; Quer, 2010). Other analyses also include different terminology (cf. Liddell, 2000). However, these analyses are intimately connected with the assumption about the agreement process and will be addressed in the next section.

A significant body of research supports a theory that many sign languages display the agreement system described above. Lillo-Martin & Meier (2011, p. 98) go so far as to state that "essentially similar systems are found in all *mature* sign languages that have been described in the literature" [emphasis added]. The existence of the Plain-Agreement-Spatial verbs system in many sign languages around the world has brought many linguists to think of that system as being a general feature across all sign languages (Sandler & Lillo-Martin, 2006; Padden, Meir, Aronoff, & Sandler, 2010, p. 572) or to consider it as a "near-universal property of sign languages" (Meir & Sandler, 2008, p. 76). Different explanations for the limited variation found in the organization of spatial morphology in signed languages have been proposed (Newport & Supalla, 2000). One hypothesis suggests that it is the visual-gestural modality that facilitates more homogenous use of spatial devices in sign languages (Newport & Supalla, 2000; Meier, 2002b). Another hypothesis speculates that the relative young age associated with sign languages limits the variance in use of

spatial devices (Aronoff & Meir, 2005; Sandler, Meir, & Aronoff, 2005) (see section 12.2.1 for a discussion). However, we find that some shared sign languages, which are not considered as young, exhibit some structural differences in the organization of the signing space (De Vos & Zeshan, 2012). For example, PROVISL, Kata Kolok and ABSL do not exhibit tripartite division of verb types. These sign languages have been reported to lack a system of directionality in verbs (Washabaugh, 1986; Marsaja, 2008; De Vos, 2012; Padden, Meir, Aronoff, & Sandler, 2010). It is becoming clear that the previously reported little variation in spatial devices is attributable to the lack of cross-linguistic studies of distinct sign languages with long histories and little or no contact with Western sign languages (Perniss, 2012; De Vos & Zeshan, 2012).

Although the YSL data reveal that few verbs may be modified in space to indicate predicative relations, it will be shown that the use of spatial modification on YSL verbs is far from systematic and obligatory. The findings to be reported in this study along with the recent findings on rural signing varieties show evidence for more variation in the spatial organization of sign language that has been previously assumed. YSL data analysis suggests that mature sign languages do not conceptualize signing space for grammatical purposes in similar ways (cf. Lillo-Martin & Meier, 2011).

9.2.2. Disagreements on agreement

Directionality is one of the most well-researched, yet controversial topics in sign language research. It has been the subject of extensive linguistic investigation and theorizing (Padden, 1988; Janis, 1995; Meir, 1998; Liddell, 2000; Rathmann & Mathur, 2002; Meier, 2002a; Aronoff, Meir, Padden, & Sandler, 2004; Thompson, 2006; Quadros & Quer, 2008; de Beuzeville, Johnston, & Schembri, 2009; Quer, 2010, 2011; Lillo-Martin & Meier, 2011; Pfau, Salzmann, & Steinbach, 2011; Schembri, 2012; Slobin, in press; among many others). Hence, there are many differing opinions around the analysis of this modality specific phenomenon. Fortunately, addressing the points of contention in directionality is beyond the scope of this study. This section, therefore, only summarizes some of the most polarized views.

The debate regarding directionality in sign languages happens between two extremes. On the one side the movement of the verbs in space is seen as a system of verb agreement wholly comparable to that found in the spoken languages verb agreement morphology (Padden, 1988). On the other side the

directionality of the sign is described as lacking any grammatical explanation (Slobin, in press). The two extremes pose a question of whether the spatial modifications should be considered as a grammatical and abstract system of verb inflection (Sandler & Lillo-Martin, 2006; Lillo-Martin & Meier, 2011) or a fusion of lexical and gestural elements (Liddell, 2000).

Simplifying somewhat the various accounts of directionality may be divided into two larger camps. The first group of researchers who mainly work within the generative framework advocates for an agreement analysis of directionality, i.e. a grammaticalized system of person agreement marking (Lillo-Martin & Meier, 2011 and many others cited above). The second group of scholars argue that spatially modified forms of lexical verbs are a "fusion of lexical morphemes and gestural elements that are not part of an inflectional system" (de Beuzeville, Johnston, & Schembri, 2009, p. 59; Liddell, 2000, 2011).

Within the agreement analysis, spatial modification of directional verbs such as the ISL verb SHOW (cf. Figure 70, p. 197) are treated as "inflected forms that agree in person and number with subject and object" (Lillo-Martin & Meier, 2011, p. 96) (see previous section for an overview). Using Corbett's (2006) terminology, Lillo-Martin & Meier (2011, p. 108) point to the agreement-like characteristics in sign languages, i.e. "the verb's argument is the 'controller'; the shared features include person (expressed through an R-locus) and number". One of central issues in the analysis of agreement is the assumption that same person distinctions which hold for pronouns also hold for directional verbs, i.e. first vs. non-first person (for the first person reference, the signer points to the center of his/her torso; for the non-first person reference, the signer points to a person in the immediate physical context). Consequently, two agreement morphemes are proposed: one for the first person and the second one for non-first person, which is unspecified for locus. Through pointing to a location, an agreement verb is claimed to copy the index of its argument, which includes person and number features (Cormier et al., 1998, cited in Lillo-Martin, 2011). Another very important assumption is that signers point toward abstract locations (R-loci) for a reference to a non-present person or entity.

There are many challenges to the 'agreement' analysis, not only from the proponents of the fusional account of directionality (Liddell, 2000), but also from spoken language linguists (Corbett, 2006; Cysouw, 2011). From a typological perspective, there are a number of good reasons to consider directionality a "very atypical agreement" system (Cysouw, 2011). Only one class of verbs mark agreement in sign languages, while object agreement is

strongly favored over subject marking. In addition, some studies have questioned whether object agreement in sign languages is obligatory (Engberg-Pedersen, 1993; Johnston & Schembri, 2007; Quadros & Lillo-Martin, 2007). Recent corpus studies provide strong evidence for optional use of spatial modification in Auslan (de Beuzeville, Johnston, & Schembri, 2009) and BSL (Cormier, Fenlon, & Schembri, 2014). According to Corbett's view (2006, cited in de Beuzeville, Johnston, & Schembri, 2009, p. 58) directionality "may not be best analyzed as an agreement system", as the absense of parallel characteristics in spoken languages likely hinders analysis of sign language directionality as an agreement system. Cysouw (2011) highlights that directionality in sign language may be compared with only one type of spoken language agreement, namely agreement/inflection. He, therefore, concludes that "it might be better to use the more transparent name such as "inflectional person marking" instead of using the confusing term agreement for this aspect of sign language" (ibid, p. 157).

As the main opponent of the 'agreement' analysis, Liddell (1990, 2000, 2011) adopts a 'fusional' analysis of directionality. He sees no reason for arguing that the verb agrees with its object by simply being directed toward the location of the referent. Liddell recognizes "no grammatical basis for an agreement analysis and no existing phonological system capable of implementing an agreement analysis" (2000, p. 312). Within the theory of Cognitive Linguistics, Liddell compares the indicating nature of the verb with the deictic gesture at the physically present entity. In case of the missing referents, according to Liddell, signers use the conceptual space inhabited by "surrogates", imagined or conceptionally present referents. By pointing to "tokens" (and not to R-loci as argued in agreement analysis), signers refer to these imagined entities and let the addressee discern between entities and the semantic representations (Liddell, 2000, p. 319). This procedure of pointing within the constructed space has been elsewhere referred to as "quasi-deixis" (Prozorova/Прозорова, 2006; Kibrik & Prozorova, 2007). Arguing against the agreement analysis, Liddell proposes the term 'indicating' verbs, which gesturally indicate its arguments.

Liddell's work and his views on the interface of gesture and language were very influential in the discussion of directionality in sign language linguistics. Many scholars have adopted Liddell's insights (De Beuzeville, Johnston, & Schembri, 2009; Prozorova/Прозорова & Kibrik/Кибрик, 2006; Jantunen, 2008). Accounting for directionality, they began ascribing a greater role to gesture. In recent publications, this trend is particularly evident (Lillo-Martin, 2002; Rathmann & Mathur, 2002; 2008; 2011; Lillo-Martin & Meier, 2011;

Aronoff & Padden, 2011; Steinbach, 2011). While these scholars agree "that a combination of linguistic and gestural explanations is necessary to account for the observed forms of verbs", they "do not take this as reason to reject the notion that verbs agree" (Lillo-Martin, 2002, p. 154). As Meier (2002a) states: "although the form of agreement may be gestural, the integration of these gestural elements into verbs is linguistically determined."

9.3. Verb directionality in YSL

Section 9.2 of this study has shown that sign language research has come to a point as to expect a subclass of sign language verbs to be modified in space to encode grammatical arguments and their syntactic roles (Lillo-Martin & Meier, 2011). Spatially modified verbs marking agreement have been described as very common in many DCSLs and were thus considered universal feature of sign languages. This section analyzes the actual production of YSL verb forms where space is used or expected to be used for the grammatical purposes. The main purpose is to see whether YSL conceptualizes space comparably to the described DCSLs. There are four questions to be addressed in this section: 1) can some YSL verbs be identified as spatially modifiable? 2) Is spatial modification obligatory in YSL? 3) Within this category can a distinction be made between verbs that mark for person and number of the subject and/or object (usually referred to as 'agreement' verbs in the sign language literature) and those that do not (usually referred to as 'spatial' verbs)? And finally, 4) can the former group of verbs that mark for person and number be seen as a highly developed grammaticalized system of person marking in YSL?

9.3.1. YSL verb classes: plain vs. non-plain

On first viewing the YSL data, one notices the demarcation between two groups of verbs. The first group includes YSL verbs such as BATHA 'cook', ĐÄTHI 'cry', DJÄMA 'work', BARRARI 'fear/frighten', LUKA 'eat/drink/ingest' and others (see Figure 72 for examples). These verbs are not able to undergo any spatial modification. Their movement and hand orientation remain invariant during the articulation. They are usually body-anchored, i.e. specified for a location on the body of the signer (cf. Figure 72).

DJÄMA 'work' LUKA 'eat/drink/ingest' DHIŊKIŊ 'think'

Figure 72. Plain verbs in YSL

In the second group, the movement, the beginning and endpoint of the verbs appear to be modified meaningfully. In particular, these verbs may be moved in space to indicate referents and locations, produced differently from their citation forms. Consistent with traditional practice, the group of verbs without spatial modification is called here *plain* verbs (Padden, 1988). The second group may be referred to as *non-plain*. Thus, the first research question can be answered by stating that some YSL verbs can be meaningfully modified in space.

To account for the frequency of spatial modification on verbs, each verb was tagged to indicate presence or absence of spatial modification within the TAG-tier (see 4.4 for more information about the annotation methods). The categorization convention of spatial modification of all verb tokens (occurrences) used in a recently published study of Auslan verbs was found very suitable. De Beuzeville, Johnston, & Schembri (2009) make a distinction between modified, non-modified and what they call 'congruent' verbs. As the YSL verbs appear to fit into these categories, I adopt their categorization structure for the purposes of this research. Following De Beuzeville, Johnston, & Schembri (2009), verbs were identified as congruent, when they did not differ from their citation form with regard to directional movement, but they were congruent with the spatial arrangements of locations present in the signing context. Therefore, an annotator unfamiliar with the conducted elicitation sessions for this study, would not recognize these verb forms as modified. An example of a congruent verb is given in Figure 73. In this example a verb GURRUPA 'to give' is identical with its citation form, in which the ☝-shaped hand moves outward from the place near the signer's chest toward the place near the referent. In this signing context, the sign with the meaning 'I give you' is directed from the signer to the interlocuter, who

was standing in front of the signer and is not present in the video. The spatial directional movement of this verb is identical with the citation form. At the same time, however, this verb can be considered congruent with the pattern of spatial reference in this context.

Figure 73. A "congruent" verb GURRUPA 'to give'

Such congruent tokens appear fairly infrequently in the dataset accounting for 2% of all tokens (cf. Figure 74). In the following, congruent verbs will be treated as modified as they bear little statistical significance (cf. De Beuzeville, Johnston, & Schembri, 2009).

In total, 787 verb tokens were counted from the elicited and spontaneous YSL data. Figure 74 shows a distribution of all of the verb tokens identified. 74% (n=580) were spatially unmodified, while all spatially modified verbs were relatively infrequent in the corpus taking up the remaining 26% (n=207) (all modified verbs forms were totaled up in this case).

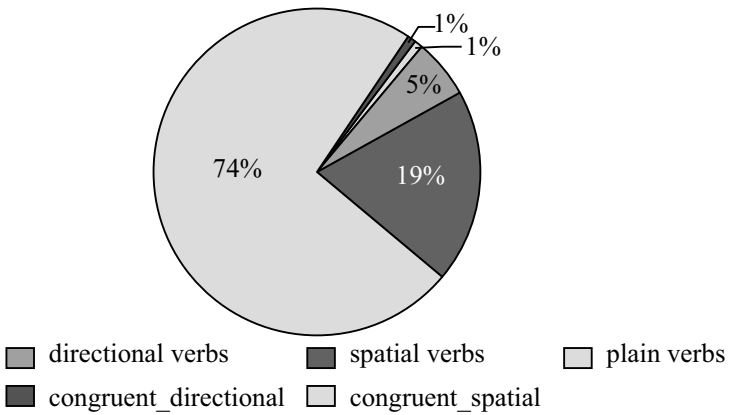


Figure 74. Relative frequency of verbs types in the YSL data (n=787)

The remaining portion of the section focuses on the second group of the YSL verbs (26% or 207 verbs in Figure 74) that exploit space and exhibit some meaningful spatial directional movement. The plain verbs will not be a part of this discussion; rather, spatially modified verbs will be of primary interest. Spatially modified verbs are further analyzed in order to answer the second and third questions stated at the onset: 2) is spatial modification obligatory in YSL and 3) can a distinction be made between verbs that mark for person and number of the subject and/or object (referred to here as *directional* verbs) or those that do not (referred to here as *spatial* verbs). I start with the latter group in the next subsection.

9.3.1.1. Frequency of spatial modification in non-plain verbs

Of all spatially modified verbs (26%) identified in the dataset, the majority encode locations (20%, n=158). These verbs are generally referred to as spatial verbs in the literature (Sandler & Lillo-Martin, 2006) (cf. Figure 74). YSL examples are, for instance, the "directional" (Nyst, 2007) with the meaning 'go over there' as shown in (13), the verb EXIST as shown in (11), the verb ŊURRKA 'to throw' and MÄRRA 'to take/get' as presented in (12), which all indicate the location and/or the movement of an entity from one location to another.

[YSL]

(10) GUYA RÄKU IX_{3a} BOAT **DIR-GO-THERE$_{3a}$** ŊARRA **DIR-GO-THERE$_{3a}$**
fish to fish there boat **go-there** 1SG **go-there**
'I am going fishing on the boat over there'.

Sequence14_19JUL_2010.mpg

[YSL]

(11)

$IX.PRO_{3a}$ **$EXIST_{3a}$**
3SG **lying-there**
'It is lying over there'

Sequence08_G sentences_2009.mpg

[YSL]

(12) ŋARRA LAKARA ŋAPIPI ŋARRA BULIKI ŋATHA
1SG tell mother's brother 1SG meat food

DILIP DJOKA MÄRRA$_1$ IX$_{3a}$ **$_{3a}$MÄRRA$_1$** GURRUPA ŋARRA
tea sugar get shop **get** give 1SG
'I will tell my uncle to get me some meat, food, tea and sugar from the shop'.

Sequence17_21JUL_L_2010.mpg

Adopting the term proposed by Nyst (2007, p. 173), two YSL verbs expressing the direction of movement are called here "directionals" and glossed as DIR-GO-THERE and DIR-COME-HERE. As can be seen in (10) and (13), the directional DIR-GO-THERE is modulated with respect to the source and goal location of the movement. The two directionals can be spatially modified towards a geographic location to express directional motion in YSL. The difference between the two directionals found in the YSL data DIR-GO-THERE and DIR-COME-HERE and their usages will be discussed in section 10.3.1.

[YSL]

(13) ŋARRA MARRTJI **DIR-GO-THERE$_{3a}$**
1SG walk **go-over-there (airport)**
'I am going to the airport'.

Sequence12_G sentences_2009.mpg

These YSL spatial verbs are spatially modulated such that the verbs move and/or are oriented towards the actual locations in the real world. That is, in (10) the signer is talking about going fishing and points first with a locative index toward the ocean. Subsequently, the directional sign DIR-GO-THERE with the meaning 'to go to A' starts its movement near the signer's chest and its end location is the geographical location of the ocean. In (11) the verb EXIST is modified in the way that it changes its end location, which is directed

toward the physically present object in the signing context. Similarly in (12), the signer first points to the location of the shop and afterwards the verb starts its movement at this location and ends near the signer.

As the previous section has shown, YSL signers appear reluctant to use metaphorical pointing in signing space for pronominal reference. In the same way, YSL signers strongly prefer to move and/or orient the verbs in space to indicate the actual locations. They never establish any set-up locations in signing space as a spatial mapping often found in DCSLs such as ASL, DGS or other European and Asian sign languages. Spatial verbs were usually directed with respect to the geographical locus of an object or subject. For example in (14), the directional DIR-GO-THERE with the meaning 'go' is pointed in the direction of the church, which is not visible in the context of signing.

(14) ŋARRA **DIR-GO-THERE$_{3a}$** SASS$_{RECTANGUAL}$ [YSL]
1SG **go (church)** church
'I go to the church.'
Sequence09_14JUL_L_2010.mpg

In many cases, the spatial movement toward a location can remain unspecified. In these forms, YSL signers do not vary the axis of the directional movement from that of the citation form, which is usually a straight outward movement from the body.

Some spatial verbs may change location to indicate the affected body part. Consider, for instance, the verb RIRRIKTHU 'to be sick/to hurt' which is signed with the handshape on the chest of the signer in its citation form (cf. Figure 75).

Figure 75. YSL verb RIRRIKTHU 'to be sick/to hurt'

The sign may however incorporate a body part, such as a stomach or a head, to denote the meaning 'to have a headache' or 'to have a stomachache' (cf. Figure 76). Such verbs have been labeled elsewhere as *body locating signs* (Johnston, 1989).

RIRRIKTHU$_a$ 'headache'

RIRRIKTHU$_b$ 'stomachache'

Figure 76. Modified verb RIRRIKTHU 'to be sick/ill'

The spatial modification on the verbs indicating locations and movement of object or subject does not appear to be obligatory in YSL. A closer look at the most frequent verbs, DIR-GO-THERE, EXIST and RIRRIKTHU 'to be sick/to hurt' that were spatially modified indicating locations and movement supports this claim[113]. An analysis of the frequency of spatial modification in these three verb types reveals that only a quarter to a third of all tokens were modified in space (cf. Figure 77).

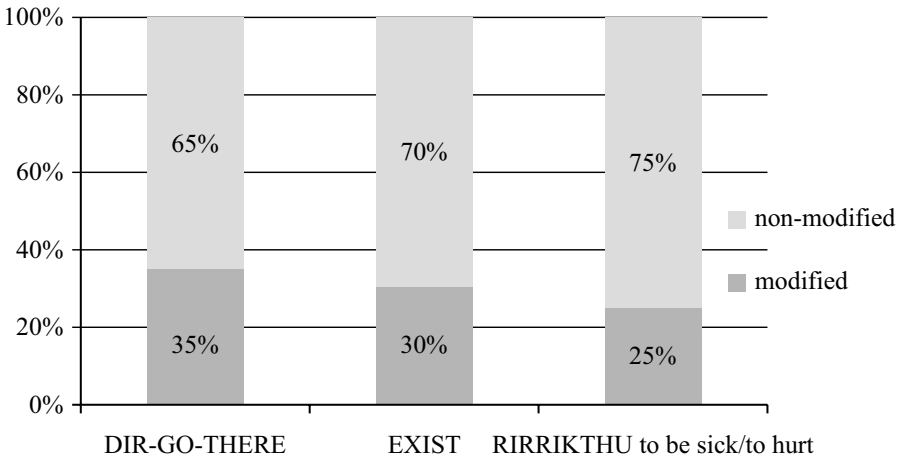


Figure 77. Frequency of spatial modification in spatial verb

As can be seen in Figure 77, only 35% (n=47) of all the occurrences (n=133) of the directional DIR-GO-THERE were modified. The majority of all tokens (65%, n=86) were clearly not spatially modified. Likewise, out of 53 occurrences of the verb EXIST 16 or 30% were spatially modified, indicating that spatial modification is far from obligatory in YSL.

Similar results are revealed for another group of verbs, which would be considered agreeing in Padden's (1988) terms. I prefer the term 'directional verbs' (see next section), which may be considered neutral with regard to their grammatical analysis. As can be seen in Figure 74, of all 787 verb tokens coded, only 49 or 6% of verbs moved and/or were oriented towards a location associated with a referent. The six verb types that were identified as directional verbs, i.e. spatially modified verbs with regard to person are: LAKARA 'to tell/speak/say', NHÄMA 'to see', MÄRRA 'to get/bring', GURRUPA 'to give', BITJA 'to take a picture' and RIRRIKTHU 'to make sick/to kill' as in Figure 80 below.

To analyze the frequency of spatial modification within the YSL transitive predicates indicating a referent, each verb token was tagged for presence or absence of spatial modification in the data corpus. A closer look at the top three frequent verbs[114] (LAKARA 'to tell/speak/say', NHÄMA 'to see' and GURRUPA 'to give') accounting for 80% of the verb tokens indicating person reveals a similar picture presented above for the spatial verbs.

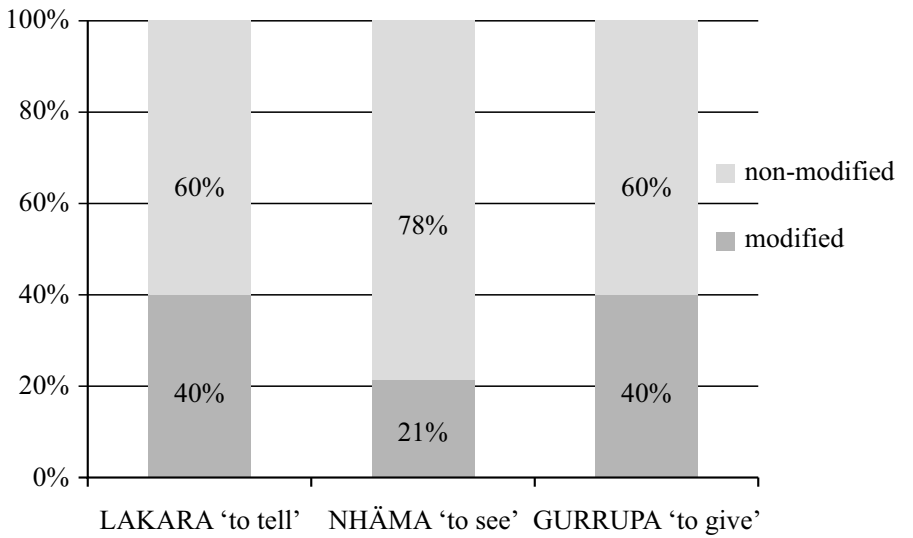


Figure 78. Frequency of spatial modification in directional verbs

As can be seen in Figure 78, the verbs' frequency of spatial modification fluctuates slightly in the dataset (21% – 40%). In sum, considerably less than half of all verb tokens in the three verb types appear to be spatially modified in the data. In other words, the majority of verb tokens remain unmodified in the YSL data. Example (15) and Figure 79 illustrate the lack of spatial modification in the case of verb GURRUPA 'to give'.

				ten-dollar	
(15)	ŋARRA	YAPA	**GURRUPA**	RRUPIYA	[YSL]
	1SG	sister	**give**	money	
	'My sister gave me ten dollars.'				

Sequence03_G_2009.mpg

In (15) the verb's final point could be modified to indicate the location associated with the referent, the object. Still the sign in (15), which is depicted in Figure 79, was not directed towards the signer, who represents the object in this case. Instead, the verb form is articulated in its citation form with a movement away from the signer's body as shown in Figure 79. De Vos (2012, p. 129) makes a similar observation for the KK verb GIVE, which is produced with an outward direction even when the object is the first person.

Figure 79. Spatially unmodified verb GURRUPA 'to give'

So far, the second question stated at the onset with regard to obligatoriness of spatial modification in a subclass of verbs can be answered. The YSL data reveal that the occurrence of spatial modification in its verbs is clearly optional. This is suggested by the low rate of spatial modification of verb

types. Only 21% to 40% of verb tokens were spatially modified in the data set, which holds true for other verbs, further validating the claim.

9.3.1.2. Directional verbs

In order to answer the third question (whether the distinction can be made between directional and spatial verbs) further analysis of spatially modified verbs appears to be necessary. Previous reports have shown that spatial modification marks verb argument (subject, object or locative). In the agreement analysis (see 9.2.2 for more information on various accounts of directionality) agreement verbs thus agree with their argument in person and number. Further, the question arises whether YSL verbs also mark verb arguments (subject, object or locative) and agree in person and number.

In (16)–(18) the verbs are moving through space, change their orientation toward and end their movement near a location of the present referent (cf. Figure 80). An interesting observation is that the signers strongly favor straight path movement, i.e. the movement either center–out or center-in. In other words, no shifting of the movement from side to side was observed, which is typically found in agreement verbs of many DCSLs to denote something like 'he told him'[115].

Figure 80. Spatially modified verb RIRRIKTHU 'to make sick/to kill'

(16) ŋARRA MUKUL-RUMARU **LAKARA$_3$** [YSL]
1SG mother's brother's wife **tell-her**
'I am your mother's brother's wife. Tell her this.'
Sequence16_21JUL_J_2010.mpg

(17) IX.PRO$_3$ **BITJA$_2$** [YSL]
2SG **take-picture-of-you**
'She is going to take a picture of you.'
Sequence07_13JUL_E1_2010.mpg

(18) ŋARALI **RIRRIKTHU$_2$** [YSL]
cigarettes **make-you-sick**
'Smoking will make you sick.'
Sequence03_10JUL_Mapuru1_2010.mpg

While the examples in (16)–(18) can be considered as instances of object marking, no subject marking has been observed. These and other verbs indicating a referent are clearly never specified for subject overtly in the dataset as reported for other sign languages (see for example Schuit, Baker, & Pfau, 2011). YSL directional verbs never begin articulation at different locations in the signing space. Rather the verbs LAKARA 'to tell/speak/say', NHÄMA 'to see', MÄRRA 'to get/bring', GURRUPA 'to give', BITJA 'to take a picture' and RIRRIKTHU 'to make sick/to kill' always start their movement near the body of the signer (i.e. signer's tongue in case of the verb LAKARA 'to tell'), whereby the signer is not the subject of the clause. In the YSL data collected so far, subject is never specified on verbs (see Meir, Padden, Aronoff, & Sandler (2007) for the proposal of treatment of such cases).

The six YSL verbs LAKARA 'to tell/speak/say', NHÄMA 'to see', MÄRRA 'to get/bring', GURRUPA 'to give', BITJA 'to take a picture' and RIRRIKTHU 'to make sick/to kill' can be spatially modified to indicate physically present referents. For example, the hand in the verb GURRUPA 'give' can move from a location in front of the signer to the location of the addressee to mean 'I give you' as shown in (19). Note that despite directionality of the verb identifying the participants, i.e. the arguments of the verb, both the subject and the indirect object are referred to explicitly in (19).

(19) WAKU IX.PRO$_2$ ŋARRA$_1$ $_1$**CL$_{\text{thin-object}}$-GURRUPA$_2$** RRUPIYA [YSL]
son 2SG 1SG **CL$_{\text{thin-object}}$-give** money
'I'll give you the money, my son.'
Sequence14_19JUL_L_2010.mpg

In instances when referents are absent from the immediate vicinity, five YSL verbs (NHÄMA 'to see', MÄRRA 'to get/bring', GURRUPA 'to give', BITJA 'to take a picture' and RIRRIKTHU 'to make sick/to kill') tend to occur spatially unmodified in sampled YSL data. As mentioned previously in this chapter,

no arbitrary locations in the signing space are associated with non-present referents in YSL. When talking about non-present referents, these five YSL verbs are signed in the citation form without being spatially modified in most of observed cases. Within the group of directional verbs presented here, there is only one verb, which appeared spatially modified in the dataset indicating physically absent referents. It is the verb LAKARA 'to tell/speak/say'. This verb can be modulated such that it moves toward a real-world location (such as a house) associated with this referent (see YSL example in (20)). Similar occurrences of spatial sign modulations referring to actual (even distant) locations have been termed elsewhere as "long distance agreement" (Schuit, 2010).

[YSL]

(20) ŊARRA RIDIMAP PHONE IX.PRO$_{3a}$ $_{1}$**LAKARA**$_{3a}$ $_{3a}$DIR-FROM$_{1}$
1SG call phone 3SG **tell-him** come-here
'I will call him and tell him to come here'.
Sequence12_15JUL_L_2010.mpg

Figure 81. Spatially modified verb LAKARA for a non-present referent

Why the verb LAKARA 'to tell/speak/say' appears to be an exception might be explained by its high frequency in the data. As can be seen in (20) and Figure 81, the verb LAKARA 'to tell/speak/say' starts its movement by touching the signer's tongue and is directed towards the place, where the referent lives (for a similar example of the metonymic pointing in YSL pronominal signs see chapter 8). In many DCSLs, this kind of structure would be typically executed by movement to an established R-locus for a third person in the signing space in front of the signer. These cases are then interpreted as 'verb agreement' (Lillo-Martin & Meier, 2011) (see 9.2.2 for the discussion). In

YSL, verbs do not move to previously established locations (R-loci) in the signing space, which correspond to any non-present person. The directionality of the YSL verb LAKARA 'to tell' does not depend on the arbitrary established loci in articulatory signing space as it is usually the case in DCSLs. The directionality of this YSL verb is determined instead by the actual locations of actual referents in the real world.

9.3.1.3. Absence of number marking

A sweeping arc movement at the end point of certain verbs demonstrates number inflection in many well-documented DCSLs (see section 9). The YSL data analysis does not reveal such spatial modification or other alternations like reduplication to indicate the number of referents.

In case of multiple referents, no sweeping arc movement is found in the YSL data. The verb is repeated and directed toward each of the referents as shown in Figure 82, in which the verb GURRUPA 'to give' is shown.

Figure 82. The YSL verb GURRUPA 'give'

The verb form in Figure 82 cannot be regarded as instance of morphological process of reduplication[116], because there is distinct pause in sign production. The verb is first directed towards one present referent, and after a pause, it is redirected towards another referent with a meaning 'I give you and I give you'. Based on these findings, it may be concluded that YSL does not have

a number category in its verb system (but see the previous chapter for a different finding with regard to YSL pronominal signs).

9.3.1.4. Optional object or location marking on YSL verbs

To summarize the results of this section and to answer the questions a) whether a distinction can be made between verbs that mark for person and number of the subject and/or object (usually referred to as 'agreement' verbs in the sign language literature) or those that do not (usually referred to as 'spatial' verbs); and, b) whether the former group of verbs that mark for person and number can be seen as a highly developed grammaticalized system of person marking in YSL, the following can be said.

The distinction between the two classes of YSL verbs, referred to here as directional ('agreement' in Padden's terms) and spatial, can only be made based on semantics: directional verbs denote transfer, whereas spatial verbs denote location and/or motion of the entity in space (Meir, 2002). It remains difficult to maintain a clear grammatical distinction between these YSL verbs despite established semantics on the following grounds. First, it was shown that both verb classes are quite similar in that they may be directed to actual physical locations. Even in case of non-present referents, the verb is directed to the real-world location associated with the referent, for example a house. The system of these verbs is based on directing them at physically present entities or the real-world locations such as their houses. This leads to the second issue. As no abstract referential loci required for the agreement analysis are established, both verb classes do not use syntactic space and thus do not appear to differ in their use of space. Thirdly, the spatial modification on YSL verbs appears to be an optional system for marking objects or locative arguments of the verb, and not the subject. Finally, based on the collected data, YSL verbs are not modified to mark number.

9.4. Constituent order in transitive clauses

The above sections showed that unlike other sign languages, YSL lacks abstract loci in the neutral signing space for person reference and makes limited use of spatial verb modifications to mark core arguments of the verb. Given this notably limited use of spatial morphology in YSL, it is essential to consider here whether YSL has a rigid syntactic structure, e.g. in the identification of the subject and object of a transitive clause.

Section 9.3.1.4 of this study revealed that YSL makes little use of the verb directionality system to encode the relations between a verb and its arguments. Instead, the spatial modification on YSL verbs appears to be used as an optional object marking. In the absence of systematical spatial modification of verbs to encode grammatical relations, the question arises here whether constituent ordering of signs is used to mark subject and object in YSL. This section reports on the ordering of signs (cf. word order) within the YSL transitive verb sentences and phrases containing more than one argument[117]. It will be shown, that YSL may rely on the SVO order in the identification of the verb arguments in a transitive clause.

Word order is cross-linguistically regarded as a mechanism to disambiguate a message linguistically, in addition to other means, such as accentuating the subject noun phrase or the context and real world knowledge. Word order is a well-studied grammatical feature in signed languages (Fischer, 1975; Friedman, 1976; Liddell, 1980; Padden, 1990). However, the issue of determining the basic word order continues to be a challenge in the sign language research, as many factors can influence the constituent order of signs (Kimmelman, 2011; Leeson & Saeed, 2012).

9.4.1. YSL constituent order

Generalizations around the constituent order in YSL transitive verb phrases made on the basis of the presently available data can only be preliminary and should be subject to a more detailed exploration at a later stage. Not all arguments were represented overtly in sentences with several participants in the collected YSL data. The agent was very often omitted and assumed to be understood through the context, culture or the real world knowledge. In the data described below, both arguments were expressed overtly. Figure 83 presents overall results and reveals that YSL seems to favor the SVO word order within transitive clauses (47% of all ordering patterns). Additionally, the counts were made with regard to the position of the verb. Out of 211 YSL transitive verb phrases, 84 or 40% were verb-final and 127 or 60% were non-verb final (cf. Figure 83).

From this survey of constituent order in YSL it appears, as illustrated by Figure 83, that the core arguments of a transitive verb phrase seem to be marked syntactically by the SVO word order in almost the half of all clauses (n=211) as shown in examples (21)–(22).

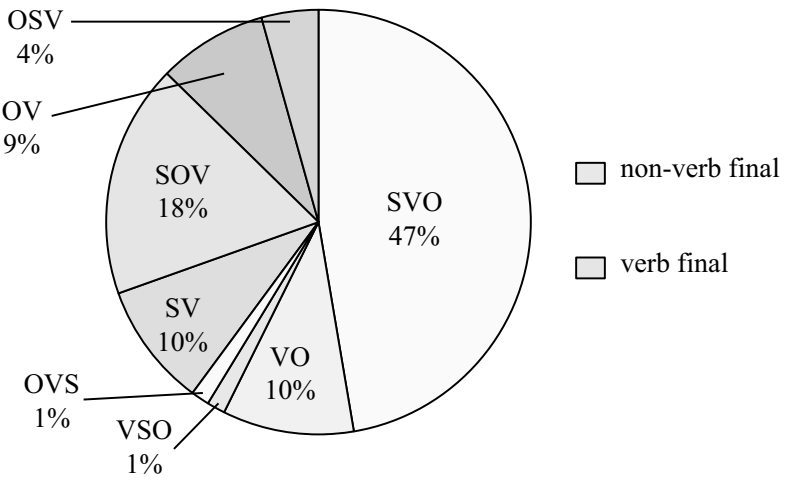


Figure 83. Frequency of word order in YSL transitive sentences (n=211)[118]

[YSL]

(21) MÄRI GURRUPA WALU YOTHU
mother's mother give watch child
'The grandmother gives the watch to the child'.
Sequence09_G_D_classifier_stimuli_2009.mpg

[YSL]

(22) BARPURU ŊARRA NHÄMA MÄRRMA MIYALK MÄRRMA
yesterday 1SG see two women two
'I have seen two women yesterday.'
Sequence15_19JUL_L_2010.mpg

18% of all transitive clauses had a SOV order as can be illustrated by (23)–(24) below.

(23) ŊÄNDI ŊATHA GURRUPA YOTHU [YSL]
mother food give child
'The mother is feeding the child.'
Sequence08_13JUL_E2_2010.mpg

(24) YOTHU ŊÄNDI GURRUPA [YSL]
child mother give
'The child is feeding the mother.'
Sequenc08_13JUL_E2_2010.mpg

Given that only a small amoung of data could be analyzed with regard to word order, due to the omission of the overt arguments, it remains too early to claim that the underlying hierarchical phrasal structure in YSL is SVO. It can merely be shown according to the survey that constituent order in YSL transitive clauses is SVO in 47% of all cases Hence, it may be seen as a cue to resolve the 'who is doing what to whom' issue in YSL.

The findings of this study support previous evidence for the prevalence of SVO order in YSL verb phrases. Cooke & Adone (1994, p. 8) analyzing 50 transitive and nontransitive sentences suggested the order subject – verb – object as the sign order that disambiguates the YSL utterances.

9.4.2. Djambarrpuyŋu constituent order

Given that YSL is predominantly used by the hearing signers, it is worth investigating whether the core arguments of the verb in YSL are ordered in the same way they are structured in the surrounding spoken language. To see whether the surrounding spoken language influences the sign order in YSL, two studies on word order in Djambarrpuyŋu were considered.

Djambarrpuyŋu, similar to many other Australian languages, does not seem to have a strict word order, which can be taken as a device for coding intra-clausal relations (Dixon, 2002). According to Tchekhoff and Zorc "word order is not relevant for the indication of NP functions" in Djambarrpuyŋu. Nevertheless, they suggest that the unmarked or "normal unemphasized" word order in Djambarrpuyŋu is SVO, as shown in (25) (Tchekhoff & Zorc, 1983, p. 851).

(25)	Dirramu-	y	nhäŋal	garrtjambal	[Djambarrpuyŋu]
	man	ERG	see	kangaroo	
	'The man saw a/the kangaroo.'				

Additionally, Tchekhoff and Zorc (1983, p. 852) claim, that in case of a pronominal object, the word order switches to SOV, as shown in (26).

(26)	Dirramu-	y	ŋarra–	ny	nhäŋal	[Djambarrpuyŋu]
	man	ERG	I	ACC	see	
	'The man saw me.'					

Unlike Tchekhoff and Zorc (1983), a study conducted by Wilkinson (1991) suggests a slightly different ordering pattern for Djambarrpuyŋu. Wilkinson demonstrates, on the basis of the Djambarrpuyŋu corpus consisting of four texts and elicited utterances, that the predominant word order in Djambarrpuyŋu is SOV independent of the occurrence of a pronominal object, as shown in (27).

[Djambarrpuyŋu]

(27) Yolŋu-y warrakan'- nha nhä- ŋal dharpa- lil
person-ERG animal- ACC see-3SG tree LOC/ABL
'The person saw a bird in a tree'.

(Wilkinson, 1991, p. 598)

Overall, the suggested word orders for Djambarrpuyŋu vary according to the study from verb final SOV to non-verb final SVO. It remains unclear whether the Djambarrpuyŋu word order has an impact on the ordering of YSL clauses or not.

9.4.3. Disscussion

Observation in the Yolngu data with regard to word order reveals that the majority of clauses contain one argument per verb, with the argument preceding the verb. Considering the frequency of order of all constituents as shown in Figure 83, the following generalization might be made.

- in clauses with more than one argument, the subject usually precedes the object;

Summing up the findings of this section, a predominant SVO word order was observed in 47% of all responses. This could be attributable to the word order of the ambient spoken language, which is SVO according to Tchekhoff & Zorc (1983). For the analysis of word order all collected YSL data was considered including the signing of both deaf and hearing signers.

Analysis presented here demonstrates a commmon tendency of leading utterances with a subject. Thus, it may be concluded that YSL disambiguates sentences by placing the subject first in clauses with more than one argument, when possible ambiguities arise that cannot be understood solely by semantics (such as when both participants can be either subject or object, as in *A tells B*).

9.5. Summary

Based on the above findings, I conclude that the boundary between verb classes in YSL, previously referred to as directional and spatial in the text, is not clear-cut. That is, all verbs that appear to be directional on the surface could as well be analyzed as spatial verbs. Therefore, this chapter distinguished between two major verb classes in YSL: plain (non-modified) and non-plain (spatially modified) verbs[119]. The latter class of non-plain verbs may be modified depending on the semantics of the verb and take optional object or location marking (cf. Table 10).

Table 10. Classification of verbs in YSL

Plain (non-modified) verbs	**Non-plain (spatially modified) verbs**
	Optional object marking:
Examples:	LAKARA 'to tell'
LUPTHU 'to shower'	GURRUPA 'to give'
DJÄMA 'to work'	Optional location marking:
BATHAN 'to cook'	DIR-GO-THERE 'to go to A'
	EXIST

The fourth question stated at the onset of section 9.3 queries whether the spatial modifications on directional verbs can be considered a highly grammaticalized system of verb agreement in YSL. Regardless of how appealing the agreement analysis of directionality might be, its central claim that the movement of directional verbs is controlled by the abstract R-loci does not appear to hold true in YSL. Instead, YSL data display a topographic directionality, where beginning and end points of the verbs are controlled by the real location of the referents (even in case of non-present referents). Moreover, the use of spatial modification on YSL verbs to mark objects appears to be optional occurring in as little as 21% of all tokens in the verb NHÄMA 'to see'. Having conducted frequency counts for all verb tokens in the data, the overall rate of spatial modification on verbs was quite low (see also De Beuzeville, Johnston, & Schembri, 2009; Schuit, 2013; Cormier, Fenlon, & Schembri, 2014). They often occurred without establishment of spatial reference. Additionally, no marking of multiple referents on YSL verbs has been observed which contrasts with previous reports on many DCSLs such as DGS (cf. Mathur & Rathmann, 2006). Thus, it appears from the YSL data collected so far that the spatial modification of verbs cannot be considered a highly grammaticalized system of agreement marking, in which verbs agree

in traditional features of person and number. It is more accurately characterized as an optional system of object and location marking.

Since YSL makes extremely little use of spatial marking on transitive verbs, it was important to explore here whether it possesses another reliable cue, such as the basic word order, to mark the subject and object in transitive clauses. Section 9.4 presented the results of my analysis of YSL data with respect to constituent order. The data revealed that the most frequent word order was SVO, marking almost half of all transitive constructions in the YSL data corpus (47%), which might be regarded an instance of the surrounding spoken language influence. Moreover, in section 9.4 it was concluded that the position of the subject is pre-verbal in YSL, since the subject preceded the predicate in all of the cases.

Chapter 10
Expression of motion

In this chapter the focus of analysis is on the expression of motion in YSL and other sign languages. It is well known that sign languages may represent these expressions through spatial modifications. The aim of this chapter is to see how motion is expressed in YSL and whether it differs from other sign language descriptions.

This chapter is structured as follows. Before proceeding to classifier types and their distributional characteristics in sign languages, I will say a few words about spoken language classifiers in section 10.1. Section 10.2 provides a basic description of sign language constructions usually referred to as classifiers, which have been identified in all DCSLs analyzed so far[120]. The next section presents the most frequent and unmarked way of expressing motion in YSL, i.e. by the use of the so-called "directionals" (Nyst, 2007). This is followed by a section on the use of classifier constructions in the YSL data. Section 10.3.2.1 reveals that YSL signers do not employ entity classifier predicates for expression of path motion. It will be shown that the signs resembling such predicates may be used to express the manner of motion. Section 10.3.2.2 examines the use of handling classifiers in the available YSL data und finds that the set of these constructions is very small and their occurrence in the dataset is relatively infrequent. Overall, this chapter identifies surprising similarities between YSL and other shared sign languages such as AdaSL (due to the lack of classifiers) and KK (due to the use of directionals) in expressing motion. Section 10.4 contains a short summary of the findings presented in this chapter.

10.1. Classifiers in spoken languages

Phenomena that are subsumed under the label 'classifier' have been identified in many spoken languages (Aikhenvald, 2000; Senft, 2000). The *numeral classifier* is the most frequent and the best described type of classifiers found in the world's languages. The languages in Asia and Oceania are renowned for their extensive use of numeral classifier constructions (Craig, 1994; Allan, 1977). For illustration, consider the example of a numeral classifier from Mandarin Chinese in (1):

[Mandarin Chinese]

(1) a. 一 辆 摩 托 车
yī **liàng** mótuōché
NUM **CL** motorcycle
'one motorcycle'

b. 一 支 毛 笔
yī **zhī** máobǐ
NUM **CL** inkbrush
'one inkbrush'

The free morphemes 辆*liàng* and 支*zhī* in (1) are obligatory numeral classifiers in Mandarin Chinese. The classifier in (1) is used for all vehicles types with wheels and the classifier in (1) is used for all rodlike and bar-shaped longish thin objects such as tree branches, lipstick or incense sticks in numeral and quantified noun phrases. They classify the objects according to their salient semantic properties.

Typological studies show that spoken languages display a broad range of different classifier types including numeral, noun, possessive, locative, deictic and verbal classifiers (Aikhenvald, 2000). In contrast to many classifier types occurring within the NP, verbal classifiers are expressed in a verb, classifying a noun - which is always an argument of the verb: the non-subject of a transitive verb or the subject of an intransitive verb (Aikhenvald, 2000, p. 149). It is important to note that the verbal classifier does not classify the verb itself. Comparable to other types of classifiers, their use does not seem to be obligatory. Semantically verbal classifiers resemble numeral classifiers, since they categorize their referent in terms of its shape, size, structure, consistency, position and/or animacy. Verbal classifiers have so far been found in languages of the Americas, Papua New Guinea and Australia and come in three different types: 1) classificatory verbs, 2) classifying verbal affixes and 3) incorporated verbal classifiers (Grinevald, 2000; see Aikhenvald, 2000, p. 150 for slightly different terminology). The first subtype can be exemplified by Chiricahua Apache in (2); the second one by Waris, a Papuan language in (3) and the third type of verbal classifiers that originate from noun incorporation is presented in (4).

[Chiricahua Apache]

(2) hà- **ń-ʔàˈh**
out of-2SUBJ.IMPF.handle.a.round.object:IMPF.MOMENTANEOUS
'you take a round object (out of enclosed space)'
(Hoijer 1945 in Aikhenvald, 2000, p. 154)

[Waris]

(3) sa ka -m **pui-** ai -h -u!
coconut 1SG GOAL **CL:edible greens**-give-RECIPIENT -IMPERATIVE
Give me the coconut!
(Brown, 1981 in Aikhenvald & Green, 1998, p. 432)

[Tiwi]

(4) warta a-watu-wuju-ngi-**mangi**-rr-akupuraji yiripuwarta
bush 3SG.MASC-morning-CONT.CV.**CL:water**.CV-fall high.tide
'The high tide is falling (lit. water-falling) [exposing the] land (bush).'
(Aikhenvald, 2000, p. 150)

10.2. Classifiers in sign languages

Influenced by the extensive research of classifiers in spoken languages (Allan, 1977), many researchers drew parallels between these spoken language constructions (shown in (2)–(4)) and sign language morphemes, expressed by a particular handshape construction denoting a non-specific referent, known today as 'classifiers' in sign language literature (Supalla, 1982, 1986; Schick, 1990; Zwitserlood, 2003, 2012). These handshape constructions may represent various entities according to their perceptible characteristics such as its shape, size, structure, consistency, position and/or animacy. Sign language classifiers best lend themselves to a comparison with only two subtypes of verbal classifiers in spoken languages, namely subtypes 2 and 3 described above: the classifying verbal affixes and the incorporated verbal classifiers (Sandler & Lillo-Martin, 2006; Zwitserlood, 2003). Similar to sign language classifiers, classifying verbal affixes (see example in (3)) are bound classifying morphemes adjacent to verbs and cannot occur separately.

Despite the abundant attention sign language classifiers have received, the literature is still in disagreement with regard to their function and terminology. It seems almost impossible to escape the terminological issue in the research on classifiers in sign languages[121].

This study uses the established term 'classifier' without losing sight of the "unique characteristics" of sign language classifiers in comparison with spoken language classifiers (Schembri, 2003). The term 'classifier' is thus reserved here for a sign language morpheme in a particular context (usually within a verb of motion, location and existence) expressed by a particular handshape, which denotes non-specific referent. The assumption is pursued

that sign language classifiers represent a linguistic system "that bears certain significant similarities" to classifier systems in spoken languages[122] (Sandler & Lillo-Martin, 2006, p. 76). Using the terminology of the spoken language does not in fact claim that these forms must be identical. Rather, as Aronoff, Meir, Padden, & Sandler (2003, p. 64) put it, "using the same label for these morphemes in spoken and signed language – justified on definitional grounds – has the advantage of encouraging comparison among the various classifier systems".

The lack of consensus in sign language literature also exists in the categorization of classifiers. There is a variety of proposals to account for different classifier types, their functions and structure of classifiers. This paper adheres to the current view that most sign languages analyzed so far have verbal classifiers[123] including two main subtypes, viz. entity and handling classifiers (Zwitserlood, 2003, 2012). These classifiers occur in classifier predicates, i.e. in verbs expressing motion, existence or/and location of a referent in space. Additionally, Size and Shape Specifiers (henceforth: SASSes), which are sometimes counted to the domain of classifiers (Supalla, 1986), will rather be treated here as "modifiers" due to their different morphosyntactic properties discussed in this section below (Zwitserlood, 2003; 2012; Glück, 2005).

10.2.1. Entity classifiers

The first subtype of verbal classifiers, entity classifiers, refers to general semantic classes. One major semantic class is, for example, 'animacy' with two subcategories: 'human' and 'animal'. Both handshapes are exemplified by an ASL example in Figure 84.

In Figure 84, the 1 handshape is used to refer to a human being and the B handshape denotes some legged creature. Entity classifiers are morphemes that indicate a particular semantic class, such as human beings, animals or vehicles, expressed by a particular handshape (cf. Figure 84).

Beyond their classifying function, entity classifiers appear to have an anaphoric function (Zwitserlood, 2003). A similar argument has been made for verbal classifiers in spoken languages. With regard to the usage of entity classifiers, it is important to point out, that they appear on intransitive verbs of motion, location and existence and function as referent-tracking devices. That means they constantly keep track of the movement and location of the referent in the discourse. Thus, they are systematically connected to the theme argument of the verb. Take, for example, Figure 85 into consideration.

'Person is moving ahead, pulling a recalcitrant dog zigzagging behind'

Figure 84. ASL constructions using entity classifiers[124]

CL: A-VEHICLE-MOVE-TOWARD-A-TREE

Figure 85. HKSL constructions using entity classifiers[125]

The signer located a tree on his left and a moving car on his right side. Before that, he has introduced a tree in the discourse by signing TREE. After presenting the referent, its entity classifier can be used to represent the referent and to locate it. A similar technique was used with 'a car'. It is signed before its classifier and is used to show the movement of the referent. This referent-tracking function is comparable to the function of verbal classifiers in spoken languages (Aikhenvald, 2000).

Sign languages differ in the choice of a handshapes for an entity classifier. Compare, for instance, the 𝄞 handshape used for animate entities in

ASL, DGS, Auslan and IPSL (Zeshan, 2003a, p. 115) with the shape for animate entities in HKSL, Taiwan and Thai sign language (Tumtavitikul, Niwatapant, & Dill, 2009; Chang, Su, & Tai, 2005). In DGS and ISL the handshape is used to denote vehicles, while KK uses this handshape to refer to large animals such as buffaloes (Zwitserlood, 2012). ASL makes use of the handshape and HKSL of the to denote vehicles (see Figure 85). These constructions give a direct representation of the object and are thus always restricted to the presentation of an entity as a whole. They do not necessarily represent the actual shape of the referent and do not look like their referents. An exception might be the handshape on a vertical forearm denoting a TREE as illustrated by a HKSL example in Figure 85, where one recognizes the shape as an outline of a conventional tree.

Sign languages have been reported to vary with regard to the inventories and the degree of consistent use of classifier constructions. NGT, for example, exhibits 16 different frequently occurring entity classifiers (Zwitserlood, 2003), IUR appears to distinguish between 4 (Schuit, Baker, & Pfau, 2011), IPSL seems to have only 2 entity classifiers (Zeshan, 2000) and in AdaSL entity classifiers are reported to be virtually absent (Nyst, 2007). Studies show that even if sign languages have similar number of entity classifiers, the distribution of their use might vary substantially in different constructions (Perniss & Özyürek, 2008).

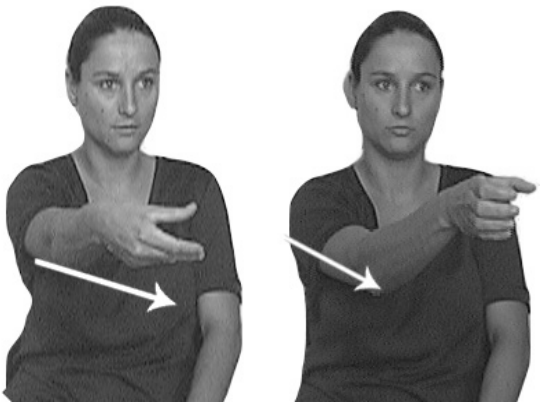
10.2.2. Handling classifiers

The second type of verbal classifiers, handling classifiers, represents the shape of the hand handling, manipulating or gripping the referent, rather than directly representing the entity itself (also called instrumental hand classifiers (Supalla, 1986). Examples of handling classifiers are shown in an ISL example in Figure 86.

The handling classifiers in Figure 86 include handshapes and , which represent hands holding various objects, a book and a cup. These handshapes represent the manipulation of (a part of) an entity and are also attached to verbs as shown in (5).

(5) BOOK IX_{3a} IX $_{3a}$**CL$_{flat\text{-}object}$-GIVE** [ISL]
'He gave me a book'

(Meir & Sandler, 2008, p. 108)



a) ‘give a book’ b) ‘give a cup’

Figure 86. ISL handling classifiers[126]

In (5) the classifier refers to the way the object (in this case the book) is held and moved by a person as shown in Figure 86.

By contrasting the two types of verbal classifiers, the properties of handling classifiers and the necessity for distinguishing them from entity classifiers become clear. In contrast to an entity classifier, which refers to the whole object, a handling classifier indicates the configuration of the hand as it uses the object. The focus is laid here on the action of manipulating the object in an event. The manipulation of the object does not necessarily have to be accomplished by the hand; it could also be the foot, as when kicking something (Supalla, 1986, p. 196). Zwitserlood (2003) also calls handling classifiers an indirect representation of an entity, whereas entity classifiers are the direct representations of it. Additionally, there is morphosyntactic evidence for the separation of the two subtypes of verbal classifiers. The two classifier types play different syntactic roles in sign languages, i.e. whereas entity classifiers occur on intransitive verbs, handling classifiers appear on transitive verbs only (Zwitserlood, 2003). Cross-linguistically, handling classifiers seem to be more similar in form than entity classifiers (Zwitserlood, 2012).

The last two sections have shown that verbal classifiers in sign languages fall into the two subtypes: entity, occurring on intransitive verbs, and handling classifiers, occurring on transitive verbs. Their distribution, usage and their meaning have been briefly discussed. A view at the cross-modal comparison reveals a great dissimilarity between signed and spoken languages. Whereas various classifier systems have been reported for spoken languages, namely numeral, noun, possessive, verbal, locative and deictic classifiers, sign language classifiers are generally taken to be verbal in nature (Zwitserlood, 2003, 2012; Benedicto & Brentari, 2004; Glück & Pfau, 1998; Glück, 2005).

10.3. Expression of motion in YSL

10.3.1. YSL Directionals

YSL signers prefer expressing direction of motion by directionals and not by classifier constructions, as has been observed in other sign languages. Two frequent directionals (DIR-COME-HERE and DIR-GO-THERE) were identified in the YSL data. The form of the two directionals is very similar. Both forms are usually signed with a lax (Bopen) or (5) handshapes. The difference is in the beginning and end point of the sign's movement indicating the source and goal location of the motion event.

Figure 87 presents the initial and final position of the directional DIR-COME-HERE. The movement of the sign is directed towards the goal, i.e. the signer's body. The direction of the sign is normally motivated by the location of a person or an entity. Example (6) shows the use of this directional.

Figure 87. The initial and final position of DIR-COME-HERE

(6) GAPU **DIR-COME-HERE** [YSL]
water **come-here**
'The tide is coming'
Sequence14_19JUL_L_2010.mpg

Figure 88 shows the initial and final position of the directional DIR-GO-THERE. This sign is used with all discourse participants and is not limited to the first person. The sign is always formed in a similar way, i.e. the movement is away from the body on a straight axis in front of the signer's body.

Figure 88. The initial and final position of DIR-GO-THERE

The directionals may also be produced on the diagonal axis being spatially modified with respect to the goal location of the movement as shown in example (7) depicted in Figure 89. In this narrative, the signer is explaining that her husband has gone to the beach to gather some shells, and because there are too many rocks on the beach, she is not going to join him.

						le
					hs	
(7)	DHARRWA	GUNDA	IX$_{3a}$	ŋARRA	YAKA	**DIR-GO-THERE$_{3a}$** [YSL]
	many	stone	there	1SG	NEG	**go-over-there**

'There are too many rocks on the beach, I am not going there'.

Sequence06_D_2009.mpg

Figure 89. DIR-GO-THERE

In (7) the orientation and direction of the DIR-GO-THERE is motivated by the geographic goal location, i.e. the beach. The directional is interpreted as 'go from here to the beach'. The directionals do not always occur spatially modified with respect to the geographic goal locations in the YSL data (see section 9.3.1.1 for the analysis of spatial modification in YSL non-plain verbs). In cases where the directionals are not directed towards geographic locations, they can be interpreted as 'move', 'leave' or 'come'. Similar use of directionals has also been reported for other sign languages, such as AdaSL (Nyst, 2007) and KK (De Vos, 2012). Nyst identified five directionals in AdaSL data: FROM, TOWARDS, PATH, ENTER and ABRUPT (Nyst, 2007, p. 173). The two YSL directionals seem to be identical in form to their AdaSL equivalents, i.e. FROM and TOWARDS. De Vos (2012, p. 178) also finds two instances of exophoric general directionals in KK data: COME-HERE-FROM-A and GO-FROM-HERE-TO-B.

Interestingly, YSL directionals follow the *up is far* rule already described for the pronominal pointing signs in section 8.4.6. Consider Figure 90 showing the DIR-GO-THERE sign directed upward. The figure captures the sign DIR-GO-THERE in example (8), which is interpreted as 'go far way'. In this narrative, the signer is describing the final scene of the story "Frog, where are you?", in which the boy leaves with the dog and the frog.

Figure 90. Elevated end point of a directional sign

[YSL]

(8) WUƊGAN YOTHU WAƊGANY KARKMAN **DIR-GO-THERE**
dog child one frog **go-there**
'The dog, the child and one of the frogs go away'.
Sequence07_G_D_frog story.mpg

In the YSL directional signs as well as in pointing signs (also discussed in 8.4.6), the height of the extended arm depends on the proximity of the goal location. If the locus or the referent is close to the signer, the angle of the arm from the body is smaller. Conversely, the angle of the arm is larger if the locus or the referent is far away. Additionally to the elevation of the sign, a distal location is indicated by the fast movement of the verb and the fully extended arm in the final position of the sign.

The DIR-GO-THERE was also found to occur in combination with other verbs. As shown in (9), it may be combined with the verb MARRTJI expressing manner of locomotion to indicate the directional motion.

[YSL]

(9) MARRTJI **DIR-GO-THERE** MIYALK **DIR-GO-THERE**
walk **go-there** woman **go-there**
'The woman is going away'.

Sequence08_13JUL_E2_2010.mpg

The sequences of a manner verb and a directional have also been reported for AdaSL (Nyst, 2007) and KK (De Vos, 2012). Moreover, De Vos (2012, p. 180) also finds a similar strategy of mapping the height-to-distance in KK directional signs.

10.3.2. YSL Classifiers

Constructions known as classifiers have been shown to be present in almost all sign languages investigated to the present day (see Zwitserlood, 2012 for an overview). Exceptions are sign languages, such as AdaSL, which has been reported to lack entity classifiers in verbs of motion and location (Nyst, 2007). Also in ABSL, no occurrences of classifier predicates have been identified so far (Sandler et al., forthcoming). Section 10.2 of this book has shown that a clear distinction between the two types of verbal classifiers, viz. entity and handling classifiers, is generally made in the sign language literature. Entity classifiers provide information on the inherent properties of an entity, such as animacy or shape, and occur in verbs of movement, existence or location. Handling classifiers denote the way in which an entity is handled.

The following sections focus on verbs indicating a referent's motion, existence, location as well as the manipulation of a referent, in order to see whether YSL signers use classifier predicates expressing motion and location of referents in space as it has been reported for many other sign languages in the literature (Schick, 1990; Collings-Ahlgren, 1990; Supalla, 1986; Glück

& Pfau, 1998; Zwitserlood, 2003; Zeshan, 2003a; Schembri, 2003; Aronoff, Meir, Padden, & Sandler, 2003). The data to be analyzed in the following sections are taken from the spontaneous monologs, dialogs and stimulus-based elicited signing (see section 4.2 for the information about stimulus material). The stimulus material deployed in this study for elicitation of classifier verb constructions has already been successfully used in the foregoing studies and elicited a great number of entity and handling classifier constructions in NGT, ASL or HKSL (Zwitserlood, 2003; Eccarius & Brentari, 2007).

In the available YSL data, only a handful of constructions have been found to be reminiscent of entity and handling classifiers described for other sign languages. In the following sections, I describe these constructions and consider their function, usage and distribution in YSL.

10.3.2.1. Entity classifiers in YSL

As has been already described in 10.2.1, entity classifier constructions are typically understood as complex intransitive predicates expressing motion and location of a referent. An often-cited ASL example is the ☝ (Index) handshape attached to the verb of motion representing an upright human being moving from A to B. Such classifier constructions were reported in sign languages to simultaneously express a particular entity (in this example a human being) in motion or location by the handshape, the path and the direction of motion or the location of an entity by the movement, and the type or manner of motion (walking in a slow manner) by an additional movement such as wiggling (see Zwitserlood, 2012 for an overview).

The collected YSL data reveal three handshapes as depicted in Figure 91 that superficially resemble entity classifier constructions in other signed languages such as ASL. They will be tentatively glossed as classifiers in the following examples. The first handshape in Figure 91a may refer to legged entities. The second and the third handshapes (see Figure 91bc) appear to denote one object only, namely a didgeridoo and a boat respectively.

a) legged entity b) didgeridoo c) boat

Figure 91. Three YSL handshapes

10.3.2.1.1. The ✌ handshape

In the YSL dataset, five occurrences of the ✌ (V) handshape (Figure 91a) were found which appeared to refer to human beings, and one to a turtle (see examples below). In all six cases, the ✌ handshape occurred on a verb of motion, which is glossed here as MOVE.

ht

(10) ŋARRA **$CL_{legged\ entity}$-MOVE** SLEEP [YSL]
1SG **$CL_{legged\ entity}$-walk** sleep
'I go to bed'.

Sequence12_G_sentences_2009.mpg

(11) MIYAPUNU **$CL_{legged\ entity}$-MOVE** BUNHA [YSL]
turtle **$CL_{legged\ entity}$-walk** slowly
'The turtle walks slowly'.

Sequence12_G_sentences_2009.mpg

The usage of the $CL_{legged\ entity}$ attached to the verb of motion in (10) denotes that the referent is walking and not going by car. Similar function of the $CL_{legged\ entity}$ is observed in example (12). In this conversation, the signer is asking where they are walking.

In all examples, the usage of the ✌ handshape attached to the verb differs remarkably from what is known about classifier constructions in other sign languages such as ASL. In the YSL data, the ✌ classifier construction does not incorporate particular locations in space expressing sources or goals, nor does it express the path motion of a referent. The $CL_{legged\ entity}$ construction solely indicates the manner of locomotion (i.e. go by foot).

(12) **$CL_{legged\ entity}$ -MOVE** QS [YSL]
$CL_{legged\ entity}$ -walk where
'Where are we walking?'

Sequence6_13JUL_E_M_2010.mpg

However, to express the meaning 'to walk' a lexical verb MARRTJI is found to be used in the YSL data more frequently than the $CL_{legged\ entity}$ construction as in (10)– (12). It is a whole body sign as depicted in Figure 92, in which the arms of the signer represent the arms of someone walking. The signer's legs may also be moving if the signer is standing.

Figure 92. YSL verb MARRTJI 'to walk'

The verb MARRTJI regularly occurs in the YSL corpus and has a wide range of motion related interpretations 'walking', 'going', 'moving', 'jogging', or even 'chasing' as shown in example in (13). Interestingly, the sign MARRTJI is very similar to the AdaSL verb MOVE, which also has a wide range of movement-like meanings such as 'to flee', 'to escape' and more commonly 'to run' (Nyst, 2007, p. 184)[127].

(13) WARRAKAN **MARRTJI** YOTHU [YSL]
bird **walk** child
'The bird was chasing the child'.
Sequence07_G_D_frog story.mpg

It is not yet clear from the available YSL data, why in some cases the whole body sign MARRTJI and in other cases, the entity classifier is used to express the manner of motion. It is yet evident that the verb MARRTJI is preferred by the YSL signers over a combination of entity classifier attached to the verb of motion to express the meaning 'to walk'.

10.3.2.1.2. The 𓂝 handshape

Another example bearing resemblance to an entity classifier in other sign languages is the 𓂝 (B) handshape attached to the verb of motion, which occurred twice in the data designating a boat. Consider example (14).

In example (14), the signer is talking about his plan to go out fishing on a boat. The last still image in the second row features the verb CL_{boat}-MOVE with the 𓂝 handshape, which expresses a boat in motion. Prior to using this construction, the referent, i.e. the boat, is first introduced into discourse (see the third still image from left in the first row). The difference between the two forms seems to be in movement. While the lexical sign BOAT is articulated with a quick, short movement in front of the signer, CL_{boat}-MOVE (cf. the last image in the second row) is signed in a much larger signing space with the arm slightly extended from the body expressed by a slow and distinct movement.

As already noticed in the previous section, the construction CL_{boat}-MOVE expresses only the manner of motion (i.e. *go by boat*). The path of motion stays unexpressed and the direction of motion is defined by the index signs in example (14).

There is also some variation found in the data with regard to the handshape used. One signer used the 𓂝 handshape, the second signer used the 𓂞 (Bopen) handshape as shown in Figure 93.

[YSL]

(14) ŊALI.INCL MARRTJI BOAT IX_{3a}
DU.INCL walk boat over-there

GUYA-HANTIŊ IX_{3a} **CL_{boat}-move**
to-fish over-there **CL_{boat}-move**

'We will be going on the boat over there (to the south of the island) to catch some fish'.

Sequence6_13JUL_E_M_2010.mpg

Figure 93. YSL handshape resembling an entity classifier

10.3.2.1.3. The ☝ handshape

Section 10.3.2.1.1 showed that the 🤟 handshape (Figure 91a) may refer to two entities, human beings and turtles (as presented in the YSL examples (10)–(11)). A third construction reminiscent of an entity classifier is the ☝ (Index) handshape combined with the verb of location, which was used to refer to one entity only, i.e. a didgeridoo.

In example (15), the signer describes an elicitation image displaying many didgeridoos standing upright (see Figure 103 in Appendix II). $CL_{didgeridoo}$ consist of the 🤘 handshape that indicates the shape of a didgeridoo, viz. a long and thin object. The construction seems to be used very similar to what has been described for other sign languages (see example (15)). First, a referent is introduced into the discourse, which is a didgeridoo in this case. Afterwards, the $CL_{didgeridoo}$ is combined with the verb of location DHÄRRA 'to stand' to indicate the referents were standing in rather unordered manner.

(15) YIDAKI **$CL_{didgeridoo}$ -DHÄRRA**+++++ [YSL]
didgeridoo **$CL_{didgeridoo}$ -stand**
'There are many didgeridoos standing vertically'.
Sequence01_13JUL_G1_2010.mpg

While this elicitation picture was shown to all participants, only one occurrence of $CL_{didgeridoo}$ -DHÄRRA was attested in the collected YSL data as illustrated in (15). Thus, against all expectations, entity classifier constructions were surprisingly infrequent in the overall YSL dataset. Furthermore, no simultaneous constructions involving entity classifiers were found in the available YSL data.

All three YSL constructions resembling entity classifiers in other signed languages (Supalla, 1986; Glück & Pfau, 1998; Zwitserlood, 2003; Zeshan, 2003a) differ remarkably from previous descriptions of entity classifiers, for they are only used to express the manner of motion. YSL does not employ classifier predicates for expression of the path or the direction of motion. For expression of directional motion, directionals (cf. Figure 94) are habitually used in YSL, as already discussed in 10.3.1.

Figure 94. YSL directional

It is noteworthy that no combinations of the entity classifier constructions and directionals were attested. The combination of the verb MARRTJI 'to walk' (cf. Figure 92) and a directional (cf. Figure 94) were however relatively frequent in the collected YSL data (see section 10.3.1 for examples).

Cross-linguistic research on the size of classifier inventories is rather scarce. The studies available on this issue show that most DCSLs possess a large set of entity classifiers. Zwitserlood (2003), for example, describes 16 different entity classifiers in NGT. The stimulus material used for identifying classifiers in YSL previously elicited a large set of entity classifier handshapes in other sign languages (Zwitserlood, 2003; Eccarius & Brentari, 2007). Yet, only three handshapes combined with verbs were found to resemble entity classifiers in the YSL data (see examples (10)–(15)). Overall, the YSL data reveal that these constructions are extremely scarce in number and occur sporadically in the data: only nine single instances in almost 4,000 signed YSL tokens.

Section 10.2.1 of this book explained that entity classifiers in sign languages refer to general semantic classes. Major semantic classes are, for example, humans, animals or vehicles. In DGS, the 𑀏 handshape is used to refer to a class of human beings, the 𑀐 handshape denotes a class of legged

creatures and the handshape refers to a class of vehicles. Entity classifiers are thus morphemes indicating a particular semantic class expressed by a particular handshape. However, two out of three YSL handshapes described above refer not to a class of referents, but to a single referent, i.e. a didgeridoo and a boat.

Notably, the three YSL handshapes resembling entity classifiers are never used to express the path and the direction of motion as has been reported for classifier constructions in DCSLs. Rather, they were always used to express the manner of movement. Thus, the handshape and the verb of motion expressed the manner of motion, i.e. 'go on foot'; the handshape with the verb of motion denoted 'go by boat'. Both occurrences are also comparable with lexical verbs expressing the vehicle of motion and if this assumption is correct, these do not qualify to be considered as complex entity classifier predicates.

The analysis of the available YSL data leads to the conclusion that YSL does not make use of a system of classifier predicates to express the path and the direction of motion. The three handshapes found in the YSL data clearly diverge from the entity classifiers reported for other sign languages (Schembri, 2003; Sandler & Lillo-Martin, 2006): i) they occur marginally in the dataset and ii) they refer to one referent and not to a class of referents and iii) they do not express the path and the direction of motion.

The study of intransitive predicates in the YSL data reveals an interesting fact that YSL signers prefer two generic directionals (DIR-COME-HERE and DIR-GO-THERE) for expression of path and directional motion (see section 10.3.1 for an overview). Hence, YSL appears to be very similar to AdaSL in expressing motion events. The manner of motion in YSL is by preference expressed with the whole body sign MARRTJI.

10.3.2.2. Handling classifiers in YSL

The handling classifier handshapes occur on transitive verbs of motion and location representing the way the object is handled. Handling classifiers in non-lexical YSL signs expressing the handling of an object were very infrequent in the dataset[128].

The YSL constructions shown in Figure 95 present the way the human hand handles or manipulates referents and thus look very similar to what has been described as the handling classifier handshapes in other sign languages. The handshapes in Figure 95 were found to be used as handling classifiers in the YSL data to refer to the manipulated motion of such objects as some type

of food, a bottle, a ball, a banana skin, money (or paper) and a hair comb in particular constructions.

Figure 95. YSL handling classifier handshapes

Similar to handling classifiers in DCSLs (see section 10.2.2), the handshape constructions in Figure 95 represent the indirect object of transitive motion constructions such as in (16) (see Figure 96 for the still image). The handshape used reflects the handling of a thin object, namely a dollar bill.

[YSL]

(16) WAKU IX.PRO$_2$ ŊARRA RRUPIYA $_1$**CL$_{thin\text{-}object}$-GURRUPA$_2$**
son 2SG 1SG money **CL$_{thin\text{-}object}$-give**
'Son, I give you the money'.

Sequence14_19JUL_L_2010.mpg

Figure 96. YSL handling classifier

As seen in (17), a different handling classifier is used to express manipulated motion of a ball.

[YSL]

(17) YOTHU BALL **CL$_{small\text{-}round\text{-}object}$-ŊURRKA** BÄPA
child ball **CL$_{small\text{-}round\text{-}object}$ -throw** father
'The child throws the ball to the father'.
Sequence09_G_D_classifier_stimuli_2009.mpg

Handling classifier constructions occurred very rarely in the YSL data. Instead, YSL signers used verbs without reflecting properties of the handled or manipulated referents. In the majority of cases where manipulated motion was expressed, this was not done with a handling classifier construction. As shown in examples (18)–(19) the handshape of the verb GÄŊ 'to carry' does not change according to the several kinds of referents types such as a crocodile or knife being manipulated.

While the lists of entity classifiers are usually presented in the sign language studies on this topic (Zwitserlood, 2012), the inventories of handling classifiers in various sign languages are generally not provided in the literature and unfortunately, no quantitative information is yet available on the frequency of these constructions in any sign language. As a result, it is impossible to compare the size of a set of handling classifiers found in the YSL data. Five various handling handshapes used in such constructions have been attested in the collected YSL data (see Figure 95).

As for the choice of a handshape, a fair amount of intra- and inter-signer variation was observed in the data. There is a considerable variation with regard to the handshape chosen in similar contexts. For example, to represent handling of the same object, such as a knife, one signer has chosen the ✊ (A) and the other the 🤚 (B curved) handshape. Another signer has used the same handshape ✋ (x closed) for representing two various objects, a stick and a boat (see Appendix I for larger handshape images).

A conclusion emerging from the discussion of the data on handling classifier constructions is that YSL makes little use of handling classifiers to indicate the way the object is manipulated. The majority of transitive verbs of motion in the corpus lack explicit reference to handling of a referent.

Additionally, a great amount of variation in the handshape choice was found in the dataset.

[YSL]

(18) NÄTHI **GÄŊ** BÄRU
grandfather **carry** crocodile
'The grandfather is carrying a crocodile'

(19) NÄTHI **GÄŊ** YIKI
grandfather **carry** knife/blade
'The grandfather is carrying a knife'.

Sequence13_G_sentences_2009.mpg

10.4. Summary

The YSL data discussed in the previous sections suggest that the system of verbal classifiers in YSL is found to diverge from what has been previously described for the documented Deaf community sign languages (Sandler & Lillo-Martin, 2006). Section 10.3.2.1 concluded that a motion event in YSL, similar to AdaSL and KK, is indicated by general directionals, i.e.

DIR-GO-THERE and DIR-COME-HERE, which may be spatially modified with respect to the geographic source and goal location of the movement.

YSL does not employ a system of entity classifiers for expression of path and direction of motion. Hence, it is the third sign language without a system of entity classifiers for expression of path motion (see Nyst, 2007 for AdaSL; Aronoff, Meir, Padden, & Sandler, 2004; Sandler et al., forthcoming for ABSL). YSL does employ handling classifiers for expression of manipulation of referents. However, these constructions are very infrequent in the YSL discourse and show a lot of variation with regard to the handshape used. The relative scarcity of verbal classifiers in YSL and other shared sign languages mentioned in this chapter might seem surprising in light of classifier use by homesigners in Nicaragua (see e.g. Brentari, Coppola, Mazzoni, & Goldin-Meadow, 2012). The following chapter considers the expression of size and shape in YSL.

Chapter 11
Expression of size and shape

11.1. Size and Shape Specifiers in sign languages

Some researchers account for Size and Shape Specifiers (SASSes) as a separated classifier type in sign languages (Supalla, 1986; Sandler & Lillo-Martin, 2006; Meir & Sandler, 2008). This paper follows a different account (Zwitserlood, 2003, 2012; Glück, 2005) and excludes tracing SASSes from the classifier system of sign languages.

SASSes represent visually perceived physical properties of objects such as its size and/or its shape. Two types of SASSes were initially distinguished: static and tracing SASSes (Supalla, 1986). Static SASSes are not distinguished from the entity classifiers in my account (see also Schembri, 2003). Tracing SASSes, however, differ from the classifiers at least in the four following ways.

First, as seen in Figure 97 showing an example of a tracing SASS in TİD, the hands need to follow a trajectory in space to specify a rectangular shape or size of a referent. Secondly, in contrast to entity or handling classifiers, SASSes are not connected with the theme argument and are never used to track referents in the discourse, they simply specify.

Figure 97. TİD SASS[129]

On the contrary, classifiers have been analyzed as agreement markers (Glück & Pfau, 1998). Thirdly, SASSes do not occur on the verbs of motion, but rather in other syntactic contexts such as in nouns, adjectives or adverbs.

Finally, tracing SASSes give specific information about the shape of this particular object and do not classify referents by organizing them into categories (Zwitserlood, 2003; 2012). Moreover, tracing SASSes in NGT, ASL and DGS appear to be free morphemes (Glück, 2005) as opposed to the sign language verbal classifiers, which do not occur without a verb.

Under such an analysis, SASSes belong to a system of expressing various geometrical shapes and sizes, but not to the classificatory system of a sign language (for the constructions analogous to entity and handling classifiers in YSL see section 10.3.2). The use of SASSes in YSL will be discussed in the next section.

11.2. Size and Shape Specifiers in YSL

SASSes in YSL specify object shapes by tracing the outline of objects and thus presenting their geometrical shape. This description is similar to what has been described for other sign languages in 11.1 (Schembri, 2003). AdaSL appears to be a notable exception, since it is reported to make little use of SASSes for the expression of size and shape of an entity. Being influenced by the wider speaking culture, AdaSL rather makes use of the so-called measuring stick signs (Nyst, 2007).

YSL makes extensive use of SASSes. YSL SASSes are frequently used to describe the geometrical properties of objects. Hence, a SASS presented in Figure 98b might denote various objects, such as a house, a shop or any other building depending on linguistic context. A SASS in Figure 98a may specify any long vertical object, such as a tree, for example.

a) $\text{SASS}_{\text{long-vertical}}$ b) $\text{SASS}_{\text{diagonal}}$

Figure 98. SASSes in YSL

SASSes may appear as nouns and adjectives and primarily describe or specify referents with respect to their shape as shown in (1). In this case, a $\text{SASS}_{\text{rectangular}}$ is used as a noun and denotes the shape of a shop as depicted in Figure 99.

[YSL]

(1) ŊALI.INCL DIR-GO-THERE$_{3a}$ ŊATHA IX$_{3a}$ **SASS$_{\text{rectangular}}$**
DU.INCL go-to-the-shop food over-there **shop**
'Let us go to the shop to get some food.'
Sequence12_G_sentences_2009.mpg

The same sign as in Figure 99 may also denote or specify any other rectangle shape of a referent, such as a door, a window, a TV, a computer, a mirror or a house.

Figure 99. $\text{SASS}_{\text{rectangular}}$

SASSes commonly occur as a part of compounds in the YSL data, similarly to other sign languages such as ASL or ABSL (Klima & Bellugi, 1979; Meir, Aronoff, Sandler, & Padden, 2010). In YSL, these compounds show a tendency for the SASS to appear as the first member in the compound (see Table 11[130]). In contrast, in ABSL, the SASS member of a compound is reported to be the final member as, for example, in CHICKEN+SMALL-OVAL-OBJECT 'egg' (Meir, Aronoff, Sandler, & Padden, 2010, p. 317). Consider the YSL compound $\text{SASS}_{\text{rectangular}}$+BÄYIM ($\text{SASS}_{\text{rectangular}}$+to pay) 'basic card' in Figure 100.

SASS$_{rectangular}$ + BÄYIM ‘to pay’

Figure 100. YSL compound

The sign SASS$_{rectangular}$ is signed first with two hands having an handshape, the palms oriented down describing the size and shape of the object. The second part of this compound is a verb BÄYIM ‘to pay’.

Another example of a compound containing a SASS is the SASS$_{rectangular}$ +SLEEP with the meaning ‘pillow’. Other examples of compounds containing Size and Shape Specifiers (SASSes), i.e. SASS compounds, are presented in Table 11.

Table 11. YSL compounds

YSL	English	Meaning
SASS$_{rectangular}$+TYPE	SASS$_{rectangular}$+type	‘computer’
SASS$_{rectangular}$+BUKU+WUKIRRI	SASS$_{rectangular}$+face+write	‘ID-card’ (passport)
SASS$_{rectangular}$+SLEEP	SASS$_{rectangular}$+sleep	‘pillow’
NHÄ+ SASS$_{square\text{-}object}$+YINDI	see+ SASS$_{rectangular}$+big	‘TV’
GUYINḎARR+SASS$_{rectangular}$	cold+ SASS$_{rectangular}$	‘refrigerator’

The fact that the sign combinations presented in Table 11 are considered YSL compounds requires some explanation. For the identification of compounds in the YSL data, criteria proposed by Meir, Aronoff, Sandler, & Padden (2010, p. 310) have been applied[131]. According to Meir et al. (2010), compounds in a sign language: 1) denote one concept; 2) show partial uniformity across signers, and 3) are signed in a more or less regular

rhythm and without preceded hesitation, i.e. similar in production speed to other lexical items. After meeting all three criteria, multiple sign constructions in YSL were identified as compounds. Note, however, that some of the properties that are characteristic of DCSLs compounds were not identified in the YSL compounds. ASL compounds, for example, undergo phonological processes of reduction, deletion and assimilation of movement, location or hand configuration (Klima & Bellugi, 1979; Liddell & Johnson, 1986). Although the YSL compounds have the phonological appearance of a single sign, since they are articulated without a pause, their parts appear to be merely put together and no phonological reduction or assimilation processes were found (see Meir, Aronoff, Sandler, & Padden (2010) for a discussion of ABSL compounds).

Some YSL compounds exhibited a different organization of their parts in the data. Consider, for example, the two slightly different sign combinations meaning 'waterhole' as shown in Figure 101ab.

a) $\text{SASS}_{\text{round-object}}$ + GAPU 'water'

b) GAPU 'water' + MAḌUTJI 'eye'

Figure 101. Two different compounds with a meaning 'waterhole'

The string of signs is different in two compounds: in compound a) 'water' is the second component, whereas in compound b) it is the first one. Becker (2001) differentiates between two types of compounds in sign languages: loan and native. While loan compounds are regarded as contact-induced loan formation or loan translation from the surrounding spoken language, native compounds do not have a spoken language counterpart. The compound in Figure 101a contains a SASS expressing the visual properties of the object under description and can be regarded a native YSL compound according to Becker (2001). However, the compound GAPU 'water'+MAŊUTJI 'eye' in Figure 101b is a direct loan from the surrounding spoken language in its morphological and semantic organization. The second part of this YSL compound is a pointing to an eye, given that the Djambarrpuyŋu word *maŋutji* means both 'eye' and 'hole'. Such loan compounds were predominantly found in the sign languages of the North Central Desert area documented by Kendon (1988). He discovers that NCDSLs compounds closely match the morphological organization of the corresponding spoken language. In Warumungu, for example, we find a compound *jalangartata* 'scorpion' consisting of *jala* 'mouth' and *ngartata* 'crab'. By strictly following the morphological structure of the spoken compound, the sign conveys the same meaning by first touching the mouth and then producing a sign for 'crab' (Kendon, 1990, p. 323). Unlike NCDSLs, the YSL data reveal a great number of native compounds usually containing a size and shape specifier.

11.3. Summary

To sum up, this chapter described the way of expressing size and shape in YSL. Similar to other sign languages documented so far, YSL makes use of the size and shape specifiers (SASSes), which give specific information about the shape of this particular object. Additionally, SASSes were found to be frequently used in YSL native compounds.

Part V

Discussion & Conclusion

Chapter 12
YSL in cross-linguistic perspective

The foregoing chapters of this book brought to light a number of remarkable features of YSL and showed that this sign language shares many similarities in its grammatical structures with other (shared) signed languages of the world documented so far. One of the patterns is, for example, a handshape inventory in shared sign languages.

Section 5.1 has shown that YSL makes use of a smaller set of phonetic handshapes, when compared to the DCSLs that display a much larger set. For example, 70 handshapes were reported for NGT (van der Kooij, 2002), Auslan makes use of 62 handshapes (Johnston & Schembri, 2007) and TSL is reported to use 56 handshapes (Smith & Ting, 1984, in Ann, 2005). The YSL data revealed the use of 33 phonetic handshapes (see Appendix I). A glance at the few studies addressing the issue of handshapes in shared sign languages points out that these sign languages also have relatively few phonetic handshapes. For AdaSL Nyst (2007) identifies 29 handshapes, Marsaja (2008) finds 28 in Kata Kolok and Schuit (2013) also reports about 33 phonetic handshapes in IUR. Hence, YSL patterns with other shared sign languages studied so far and displays a smaller set of phonetic handshapes if compared to the DCSLs.

A considerable degree of handshape variation also appears to be another feature occuring in various shared sign languages. Section 5.1 identified handshape variation in YSL lexical signs. The same YSL signs were often found to be articulated with different handshapes within the dataset. For example, the YSL sign GAPU 'water' was articulated with the , (O) , (V) , (Index) or (Bbent) handshapes (see section 5.1, Figure 18 and Appendix I for the images of YSL handshapes). Again, similar inter- and intra-signer handshape variation in the formation of signs has also been observed among other shared sign languages, such as PROVISL (Washabaugh, 1991) and ABSL (Israel & Sandler, 2009; Sandler, Aronoff, Meir, & Padden, 2011).

A few available systematic descriptions on a number of shared sign languages allow me to discuss in the next section some of the interesting morphological-spatial aspects attested in YSL and other shared sign languages[132]. In particular, it shows that shared sign languages lack DCSL-type of uses of space.

12.1. The use of space in shared sign languages

12.1.1. The lack of metaphorical pointing

Section 8.2.1 explained that the pronominal system in DCSLs is based on metaphorical pointing, where signers establish anaphoric loci in the neutral signing space in order to refer to third person individuals (Bos, 1990; Sandler & Lillo-Martin, 2006; Meier & Lillo-Martin, 2010). Section 8.4.6 revealed that YSL makes virtually no use of metaphorical pointing. Instead of anaphoric localization, YSL signers use direct or metonymic pointing (see section 8.2.1 for the discussion of terminology) to indicate people and objects. In case individuals are physically absent during the speech event, person reference in YSL is usually done by pointing to the house of the individual. Interestingly, the pointing to non-visible entities was always accurate, i.e. the direction of the pointing to the real world position of the entity appeared to be in accord with its cardinal direction.

As has been recently noted by Nyst (2012), a great number of shared sign languages have been described to lack metaphorical pointing for person reference (see also Washabaugh, Woodward, & DeSantis, 1978; Washabaugh, 1986 for PROVISL; Davis, 2010 for PISL; Perniss & Zeshan, 2008; De Vos, 2010, 2012 for Kata Kolok; Sandler, Aronoff, Meir, & Padden, 2011 for ABSL; Schuit, 2013 for IUR; Nyst, 2012 for AdaSL). The use of accurate pointings to the real-world locations of referents (i.e. to a person's house) has also been referred to as absolute pointing in the literature (Perniss & Zeshan, 2008), which is reminiscent of, but not quite identical to the absolute frame of reference (see section 12.2.2). Apart from direct and metonymic pointing for person reference, KK signers also use the so-called "list buoys", where each finger of the signer's nondominant hand is associated with a specific referent (De Vos, 2012, pp. 199–206).

12.1.2. Limited use of spatial modification in transitive verbs

Section 9 concluded that YSL does not exhibit a system of verb directionality analogical to the systems described for DCSLs (Sandler & Lillo-Martin, 2006). The spatial modifications attested on YSL transitive predicates are only faintly reminiscent of the integral system of spatial modifications documented in many other sign languages (Padden, 1990; Mathur & Rathmann, 2006, 2012). First of all, as discussed above, YSL signers do not establish conceptual referent locations, which are fundamental for the movement of

directional verbs in the neutral signing space (Lillo-Martin & Meier, 2011). The corpus-based analysis of YSL reveals that only six verbs were spatially modifiable in transitive constructions indicating a referent: LAKARA 'to tell/speak/say', NHÄMA 'to see', MÄRRA 'to get/bring', GURRUPA 'to give', BITJA 'to take a picture' and RIRRIKTHU 'to make sick/to kill' (see section 9.3.1.1 for a detailed description). These verbs were, however, very rarely modified in space in the corpus to mark core arguments. For example, only 21% of all occurrences of the verb NHÄMA 'to see' occurred spatially modified in the corpus. In sum, 60–80% of all verb occurrences of the six verbs mentioned above appeared spatially unmodified in the YSL data set.

The limited use of spatial modification on transitive verbs has also been documented for other shared sign languages. In PROVISL only two verbs were reported to exhibit some spatial modifications, these are HIT and GIVE, "but the directionality in the expression of these verbs was not used to disambiguate any of the utterance pairs" (Washabaugh, 1979, p. 199). AdaSL verbs allowing for spatial modification are MARRY, CURSE, TELL, SEE, and INSULT (Nyst, 2007, p. 158). Two sign languages, KK and ABSL, have been reported to lack a system of verb directionality indicating the subject and object of a transitive event. In these languages, transfer verbs are produced with a straight outward direction, even when the first person is the direct object (see Aronoff, Meir, Padden, & Sandler, 2004; Padden, Meir, Aronoff, & Sandler, 2010 for ABSL; Marsaja, 2008; De Vos, 2012 for KK). In IUR, 17 verbs (such as HATE, BULLY, SEE, SHOOT, GIVE and other) were found to be spatially modified at least once in the data analyzed by Schuit (2013). Although the number of IUR agreeing verbs is much highter than in many other shared sign languages including YSL, the results reported in Schuit (2013) are quite comparable, since only 65 tokens (37%) of these verbs show agreement. The rest of the verbs appear in a non-modified form in the IUR data (ibid, p. 108).

12.1.3. Restricted use of entity classifiers

Most large Deaf community sign languages are generally known to have an extensive system of entity classifiers (Aronoff, Meir, Padden, & Sandler, 2003; Zwitserlood, 2003, 2012). Section 10.3.2 of this book showed, however, that unlike DCSLs, YSL does not virtually employ a system of entity classifiers for expression of path and direction of motion Signs that resemble classifier predicates may be used in YSL to express the manner of

motion. The path and the direction of motion are preferably indicated in YSL by two generic directionals similar to AdaSL and KK (see section 10.3.1).

Other shared sign languages are also known for their restricted usage of entity classifiers (see for example Washabaugh, 1986 for PROVISL). Nyst (2007) reports about the virtual absence of entity classifiers in AdaSL. Instead of using entity classifier constructions, AdaSL also effectively expresses motion with directionals (ibid, 2007). Similarly, in ABSL no classifier precicates have been found so far (Aronoff, Meir, Padden, & Sandler, 2004; Sandler et al., forthcoming). Quite different from YSL, KK as well as IUR are reported to make extensive use of entity classifiers (Marsaja, 2008; Schuit, 2013). Although according to De Vos (2012, p. 101), the system of KK entity classifiers differs from desriptions of such systems in other sign languages. KK entity classifier handshapes are primarily defined based on orientation and movement pattern, rather than handshape and thus, the same handshapes may be used for various entities (Marsaja, 2008).

12.2. Language-external factors and sign language structure

The preceding sections have highlighted some similarities of YSL with other shared sign languages particularly regarding some selected features of spatial grammar. By emphasizing the similarities between various shared sign languages in the organization of signing space, this study does by no means aim to categorize shared sign languages into one linguistic sub-type on the basis of these similarities (cf. also De Vos & Zeshan, 2012). It has been shown above that shared sign languages differ from each other in their spatial organization. For example, while ABSL and KK lack a system of directionality, some YSL and AdaSL verbs allow for spatial modification (see sections 9 and 12.1.2). These differences in the organization of signing space notwithstanding, shared sign languages appear not to use space for grammatical purposes as extensively as it has been reported for DCSLs. This peculiarity has led many scholars to wonder whether the linguistic organization of these languages is possibly determined by some language-external factors.

The view that language structure is partially influenced by sociolinguistic conditions of the linguistic community has been advocated by many scholars (Kusters, 2003; McWhorter, 2007; Wray & Grace, 2007; Lupyan & Dale, 2010; Trudgill, 2011; Bentz & Winter, 2012). Since many shared sign languages occur in similar sociolinguistic settings (see also section 2.3), a number of hypotheses arose proposing that particular social and

sociolinguistic environments could have given rise to a particular type of linguistic structure (Washabaugh, 1986; Jepson, 1991; Sandler, Meir, & Aronoff, 2005; Nyst, 2007; Schuit, 2012; De Vos, 2012). The results of my analysis of the YSL data do not hint at any specific hypothesis being true. Possibly a combination of more than one language-external factor - such as, for example, the habitual use of geocentric frame of reference and context-dependency - may provide a more adequate explanation for the structural similarities found between YSL and a number of other shared sign languages.

In the following sections, I consider a number of proposed assumptions suggesting that some extra-linguistic factors might have caused the similarities in the use of space between the shared sign languages described in section 12.1. Language-external factors include *demographic factors* such as a language's age, the population size of a signing community and *sociolinguistic and sociocultural factors* such as signers' spatial cognition and the prevalence of signers with hearing ability. Highlighting the role of extra-linguistic patterns in the following sections does not discount the importance of language-internal factors. It is clear that the generalizations to be discussed are based on a limited analysis of data obtained from less than 10 sign languages and thus no premature conclusions will be made here. Future research on this issue is in need of more data from small-scale sign languages in rural areas. For more indepth comparison, differences in the sociolinguistic make-up of these languages, such as the number of deaf people, the incidence of deafness, the type of deafness (hereditary vs. non-hereditary), the size of the signing community and the age of the language should be evaluated more carefully (Nonaka, Nyst, & Kisch, 2010; Nyst, Sylla, & Magassouba, 2012).

12.2.1. Age of language

ASL is reportedly about 250 years old. In comparison, ABSL appears to be a relatively young language estimated to be around 75 years (Sandler & Aronoff, 2007). This language developed within the past three generations in the Negev region of present-day Israel and is used extensively today by both hearing and deaf individuals (Kisch, 2008). In the early stages of research, linguists found that unlike the well-studied sign languages of large Deaf communities, ABSL has strikingly little and no systematic morphology (Aronoff, Meir, Padden, & Sandler, 2004, p. 32ff; 2008). In particular, no spatially modified verb forms inflected for agreement or complex classifier predicates were found in ABSL (Sandler et al., forthcoming). Aronoff, Meir,

Padden, & Sandler (2004) attribute the absence of verb directionality to language age. Other structural features such as the relative dearth of sequential affixation are also argued to occur due to the relatively young age of this language (Padden, Meir, Aronoff, & Sandler, 2010, p. 574). Sandler, Aronoff, Meir, & Padden (2011) also observe a significantly higher degree of sublexical variation in handshape production in ABSL, when compared to ISL or ASL, and conclude that discrete formational phonological parameters have not yet been established in this sign language. Moreover, they imply that the evolution of a linguistic system takes a gradual course and, thus, assume that ABSL will develop more complex structures, in due time (Sandler et al., forthcoming).

However, the findings from other shared sign languages, AdaSL and KK, are not consistent with this hypothesis of a historical developmental path (De Vos & Zeshan, 2012). KK is estimated to be considerably older[133] than ABSL. Nevertheless, this language also still lacks the system of verb directionality (De Vos, 2012). AdaSL, which is considered an old sign language with about 200 years of history, lacks a system of entity classifiers in intransitive verbs of motion (Nyst, 2007). Although the recent findings from Nicaraguan Sign Language seem to support the idea of language's evolutionary path (Senghas & Coppola, 2011), the development of spatial grammar in this emerging sign language, as stated by De Vos (2012, p. 421), is more likely to be an effect of nativization (Senghas, 1995), rather than the time depth. Evidence from KK and AdaSL suggests that a unidirectional developmental perspective on the linguistic structure of shared sign languages does not explain the similarities observed between those languages (Nyst, 2012, p. 565 ff.).

ABSL shares many of its features with Yolngu Sign Language, although the time depth of YSL cannot yet be ascertained (see section 3.5). It is, however, highly plausible to suppose that YSL well predated European contact (see section 3.5.3 of this book). In any case, the scenario seems to be unlikely that a highly grammatical system of verb agreement, R-loci establishment and entity classifier constructions will emerge in YSL with the passage of time, given that other sociolinguistic and sociocultural features remain the same. It thus appears conceivable, as Nyst (2012, p. 567 ff.) concludes, that not all mature sign languages are obliged to develop the (spatial) grammatical structures typically found in sign languages of large Deaf communities and the relatively young age of a language does not play a major role in shaping the structure of a (shared) sign language (cf. Hendriks, 2008, p. 208 ff.).

12.2.2. Frame of reference

Languages vary typologically in the way they express the spatial relations between entities that are located in space and specify the location of these entities (Pederson, et al., 1998). Frames of reference are coordinate systems for expressing these spatial relationships. Recent typological research differentiates between three different frames of reference: the 'intrinsic' (object-centered), the 'relative' (egocentric) and the 'absolute' (geocentric) (Pederson, et al., 1998; Levinson, 2003; Majid et al., 2004; Le Guen, 2011b). Languages may thus choose one or more frames of reference as a strategy for locating or orienting one object (usually called the *figure* or the *referent*) in relation to another object (called the *ground* or the *relatum*) (Palmer, 2010). The term 'in front of' in the sentence "the child is in front of the tree" readily invokes a particular coordinate system, an intrinsic frame of reference, in which the coordinates are determined by the intrinsic features of the relatum. The relative frame of reference defines the location of the referent based on the external viewpoint (as in "the child is left of the tree"). This projection is thus dependent on the speaker's location. The absolute frame of reference is determined by the fixed bearings or cardinal directions (as in "the child is to the north of the tree") (Levinson, 2003).

Little research has been carried out with regard to exploration of the predominant frame of reference used in a particular sign language (see for example Emmorey, 1996, 2002 for ASL; Perniss, 2007 for DGS; De Vos, 2012 for KK). Perniss (2007) shows that DGS signers habitually represent a spatial relationship in relative and intrinsic terms. She finds that DGS static scene descriptions are encoded by the use of a relative system and the event narratives by the use of the intrinsic frame of reference. Additionally, she finds no incidences of the absolute frame of reference for either type. An interesting fact is that the speakers of a language like German also use both a relative and intrinsic system and do not usually keep track of the real world orientation of places and things, i.e. do not normally use an absolute frame of reference. Conversely, KK signers were found to systematically favor the absolute frame of reference (Perniss & Zeshan, 2008; De Vos, 2012), similar to the surrounding spoken Balinese language and culture, which adhere to geocentric terms in spatial reference (Wassman & Dasen, 1998, cited in De Vos, 2012, p. 252 ff.).

As noticed by Le Guen (2011b), the use of a particular frame of reference has a direct impact on the type of pointing used in a speech or sign

community. In particular, he notices that the geocentric coders, i.e. speakers or signers habitually using the absolute frame of reference, seem to be reluctant to use metaphorical pointing. The findings presented by De Vos (2012) provide further support to his observation. KK signers, who are preferentially using an absolute frame of reference, typically point to an existing place such as a person's house and do not use metaphorical pointing for person reference (De Vos, 2012). Conversely, the pronominal system in DGS relies on metaphorical pointing (Boyes-Braem, 1992, p. 61).

However, it is not yet clear whether all sign languages lacking the metaphorical pointing (see section 12.1.1) favor the geocentric coordinate system. The YSL data analysed in this study do not provide a conclusive answer to the question of whether the absolute frame of reference is preferred in YSL discourse. To identify the frame of reference used in a language, a number of spatial cognition tasks in various conditions need to be conducted (see Perniss, 2007; Le Guen, 2011b, De Vos, 2012), which was beyond the scope of this study. Despite these limitations, noteworthy is the fact that YSL signers use direct pointing for distant entities and places and point accurately towards the real world locations of these entities (see section 8.4.6 for a detailed discussion of this issue). Consequently, as discussed in section 8.4.6, YSL signers do not use metaphorical pointing to refer to these entities. Hence, YSL pointing patterns strongly resemble the paradigm that has been described for other geocentric coders (see Levinson, 2003, p. 146 ff. for Tzeltal speakers; Le Guen, 2011b for Yucatec Maya speakers; De Vos, 2012 for KK signers). Moreover, as the prevailing majority of YSL signers are speakers of *Yolngu Matha* (see section 3.4 for a discussion of the traditional languages in North East Arnhem Land), it would be interesting to know whether the spatial system of Yolngu languages is determined by geocentric terms. However, to the best of the author's knowledge, no study is available on the use of a coordinate system to localize a figure with respect to a ground in any spoken Yolngu language. The use of motion verbs such as *ḏuwatthu-* meaning 'go up, go towards the bush' and its antonym *yarrupthu-* 'to go down, go towards the sea' (Wilkinson, 1991, p. 152) remind us of a system of spatial reference based on geographically salient objects, such as the one in Balinese (Wassmann & Dasen, 1998, cited in De Vos, 2012) or Northern Mansi Ob-Ugric dialect (Schön, 2012). In addition, a number of Aboriginal spoken languages in Northern Australia have been reported to make a habitual use of the geocentric spatial system (see for example Haviland, 1993, p. 26; Levinson, 2003, pp. 261–2 for Guugu Yimithirr; Wilkins, 1999, 2003, p. 187 for Arrernte; Hoffmann, 2011, 2012 for Jaminjung and closely related variety Ngaliwurru). The question whether YSL and the surrounding spoken Yolngu

languages favor the absolute frame of reference awaits further research. The preliminary observations mainly based on findings from KK (De Vos, 2012) seem to be in line with the idea that the use of a particular frame of reference has an impact on the use of metaphorical pointing in a sign language (Le Guen, 2011b). This is an interesting aspect deserving further investigation.

12.2.3. Size of community and context-dependency

Shared sign languages have much smaller signing communities than those of Deaf community sign languages and reportedly do not exceed the limit of 3,500 individuals (Sandler, Meir, & Aronoff, 2005) (see Table 1, section 2.3). The size of the shared signing community does not solely rest upon the number of deaf people, but also upon a great number of hearing signing individuals (Kuschel, 1973; Ferreira-Brito, 1984; Kwek, 1991).

The population size of the signing community, or more strictly its growth rate, is known to have an impact on the language structure (Senghas, 2005). The small size of a community might lead to a number of other social factors, which might affect the structure of a sign language. Israel and Sandler (2009) attribute, for example, the presence of sublexical variations in handshape production in ABSL to the small size of the community and the absence of formal deaf education. This may also be the case for YSL. The community of YSL users is rather small and no prescriptive norms, such as sign language teaching at school, sign language dictionaries, sign language interpreting, schooling etc. exist (see section 3.5 for more information on the use of YSL today), which would have likely led to standardization of the signs and, thus, to lowering the number of alternate forms (Israel & Sandler, 2009, p. 41).

A recent study on spoken languages shows that the small size of the community can lead to smaller phoneme inventories. Hay and Bauer (2007) have found a surprisingly strong correlation between the size of phoneme inventory of a spoken language and the total number of speakers of that language. Evidence from shared sign languages having smaller sets of phonetic handshapes, when compared to the DCSLs (see section 0), indicate that this hypothesis might be correct, however more comparable research is needed to consider a possible link between handshape inventory and the size of the signing population.

Furthermore, the small size of a signing community seems to facilitate the growth of social homogeneity witnessed to develop through dense social networking, high degree of kinship relations and the large amount of communally shared information between the community members. This

social homogeneity has, according to Washabaugh, Woodward, & DeSantis (1978), significant repercussions for the structure of PROVISL, which the authors consider to be a highly context dependent language. De Vos (2012) also finds support for this context-dependency hypothesis in her data on KK. She attributes the dominace of exophoric reference in KK to a large amount of communally shared information. The YSL data available for this study also appears to be in line with this hypothesis predicting that the signers of shared sign language use more exophoric pointing than the Deaf community signers. Unlike the signers of DCSLs, YSL signers share a common social environment, a common culture and a common identity and thus a considerable amount of exra-linguistic information is essential to fully comprehend YSL discourse.

12.2.4. Proportion of hearing signers

One of the main differences between large Deaf community sign languages and shared sign languages is the proportion of hearing signers (Nyst, 2007, p. 12 ff.; 2012, p. 565). Large Deaf sign communities predominantly consist of deaf signers, who use sign language as their primary language. Only a small proportion of hearing people learn to use the Deaf community sign language as a second language. Those that use it are usually CODAs (Children of Deaf Adults), relatives, interpreters, teachers or researchers (Meir, Sandler, Padden, & Aronoff, 2010). In shared signing communities the vast majority of sign language users are hearing users (Zeshan, 2011a). For example, 96% of KK signers are hearing (De Vos, 2012, p. 438). To illustrate this proportion, consider Figure 102. DCSLs can be positioned towards the left side of the continuum in Figure 102, and the shared sign languages towards the right side. YSL might be positioned on the extreme right of the continuum, as monolingual deaf signers are in the extreme minority (see section 3.5 for a number of deaf people in YSL community). As other alternate sign languages discussed in the literature, YSL has more hearing than deaf signers. If deaf signers are regarded to be dominant users of YSL, then the majority of YSL users appear to be non-dominant users, whose dominant language is one of the spoken Yolngu variety.

Some researchers have asked whether the presense of a large number of hearing signers, whose dominant language is a spoken one, may influence the sign language structure. Nyst (2007, p. 212 ff.) argues that the relatively large signing space, the relatively small set of unmarked handshapes and the relatively high degree of multi-channelledness in AdaSL can be related to

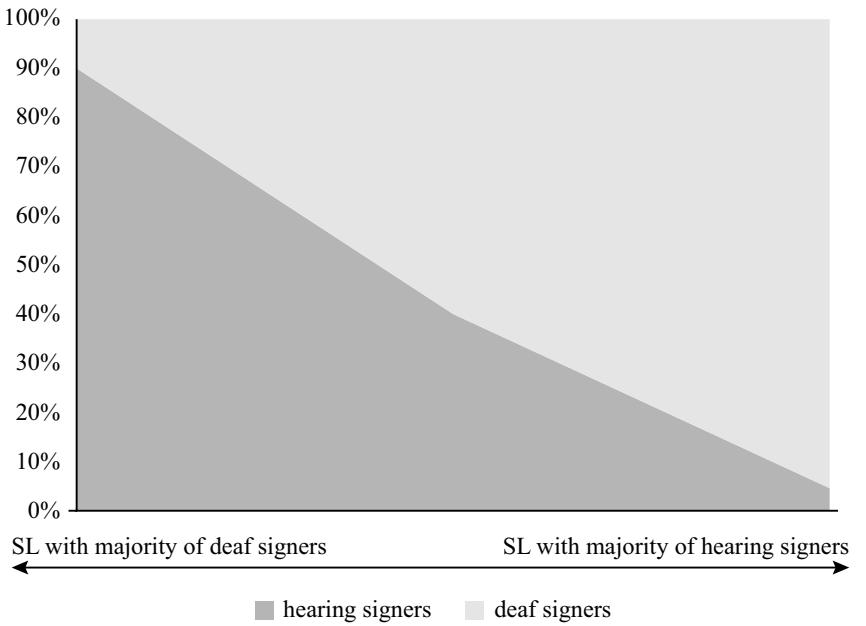


Figure 102. The proportion of hearing and deaf signers in signing communities

the large proportion of hearing signers in the community. She reasons that these features relate in the first place to the high degree of iconicity present in the lexicon of this language. She builds her argument on the observation that shared sign languages possess a high degree of iconicity in lexical items (Washabaugh, 1979; Ferreira-Brito, 1983; Dolman, 1986; Kendon, 1980; Jepson, 1991). Furthermore, Nyst correlates the high degree of iconicity in lexical items to the large proportion of hearing signers using this language due to the different roles iconicity plays in L1 vs. L2 acquisition and processing. Iconicity is known to play almost no role for L1 learning or comprehension of sign languages, while L2 learning is characterized by a strong reliance on the iconic features of signs (Mayberry, 2006). Nyst assumes that most of AdaSL users are hearing late learners of this language and therefore learn iconically transparent signs more easily (2007, p. 215). Because the majority of shared sign language signers are L2 users, Nyst infers that the degree of iconicity in lexical items is dependent on the proportion of L2 users. She concludes that in sign languages with a small proportion of L2 users (i.e. in DCSLs), the degree of iconicity in lexical items decreases, and as a result, the size of the signing space becomes smaller and the number of handshapes grows[134]. Consequently, in sign languages with a large proportion of L2 users, "the level of iconicity remains high, correlating with a large signing

space, a high degree of multchannelledness [sic] and a small set of unmarked handshapes" (ibid, p. 217).

The terms L1 and L2 are ambiguous and can be used in the literature to refer to at least two things: 1) primacy or dominance in use (e.g. L2 is not used as a primary language, or perhaps not exclusively used) and 2) acquisition (e.g. L2 is acquired at a later age). Nyst states to use these terms in the sense of dominance. However, in the course of her argumentation, she also refers to a "probably late" acquisition of AdaSL by hearing signers.

It appears legitimate to ask whether the usage of YSL mostly by hearing people, whose primary language is a spoken Yolngu, has some impact on the linguistic structure of this sign language. However, as there are no extant studies on acquisition of YSL, it seems rather pointless to speculate, whether a high degree of iconicity in lexical items of YSL is due to a late acquisition of YSL by hearing signers. The age of YSL acquisition by the hearing or by deaf signers is thus currently unknown[135]. It is, therefore, also not clear whether the acquisition of YSL and the surrounding spoken languages by hearing Yolngu can be qualified as an instance of multiple (simultaneous or successive) (first) language acquisition. Acquisition studies with a clarification of the age at which hearing users of YSL generally begin to learn/use this language are desirable.

Chapter 13
Concluding remarks

The overarching goal of this study has been to provide a preliminary description of selected structural features of Yolngu Sign Language on the levels of phonology, morphology and syntax and to compare to what extent it differs from existing sign language descriptions. The focus was on the use of signing space in YSL for grammatical purposes. This investigation builds on a tradition of studies demonstrating structural variation within the visual-spatial language modality (Zeshan, 2004ab; Perniss, Pfau, & Steinbach, 2007; Zeshan & Perniss, 2008). In general, the use of spatial grammatical structures in sign language has been widely assumed to be very similar. Consequently, there has been little expectation of variation between sign languages in this domain, especially in the establishment of loci in the neutral signing space for person reference, the use of verb directionality and classifier constructions. Yet, it turns out that there are very substantial differences between sign languages in their organization of signing space for grammatical purposes (Washabaugh, 1986; Nyst, 2007; Marsaja, 2008; Zeshan & Perniss, 2008; Aronoff, Meir, Padden, & Sandler, 2008; Padden, Meir, Aronoff, & Sandler, 2010; De Vos, 2012; Schuit, 2013) and this research has contributed to enhance our understanding of possible variation in this domain.

As stated in chapter 1 two central research questions led the direction of this research, which inquired the following:

(1) Does Yolngu Sign Language make use of the grammatical spatial structures common to the majority of sign languages studied so far, such as the use of abstract space to introduce referents into discourse, verb directionality to mark arguments of the verbs and classifier constructions to encode spatial information about referent's location and motion?
(2) Do sociolinguistic settings of the signing community have an impact on the linguistic structure of Yolngu Sign Language?

Coming back to the question raised in the introduction, the collected YSL data showed that 1) YSL notably differs in all three spatial grammatical aspects from the descriptions of large Deaf community sign languages (Sandler & Lillo-Martin, 2006), but it strikingly resembles the small-scale village sign languages in these domains (Nyst, 2007; Marsaja, 2008; Padden, Meir, Aronoff, & Sandler, 2010; Schuit, Baker, & Pfau, 2011; De Vos, 2012).

This study has also shown that 2) possibly a combination of various sociolinguistic and demographic settings might have an impact on the linguistic structure of Yolngu Sign Language. In particular, the YSL data appears to fit the hypothesis of the context-dependency (Washabaugh, Woodward, & DeSantis, 1978; De Vos, 2012). Further research is needed, however, to investigate the habitual use of frame of reference among the Yolngu speakers and signers.

The findings reported here, though based on limited data, also add to our knowledge of variation across sign languages in the other grammatical domains apart from pronominal reference, verb directionality and expression of motion. The foregoing chapters of this book have presented remarkable features of YSL in the domains of phonology and syntax from a cross-linguistic perspective.

This book contributed to typological diversity of sign languages by describing and analyzing an alternate sign language, which has received extremely little attention from sign language linguists (but see a handful of scattered studies on alternate sign languages in Australia such as Kendon, 1988; Cooke & Adone, 1994; Green, Woods, & Foley, 2011; Pfau, 2012). Alternate sign languages in general have been largely neglected by the sign language research literature suspecting them to be "half-way" sign languages (as critized in Nyst, 2007, p. 218). This study has substantiated the previous claims about Yolngu Sign Language being a developed sign language and not a manual code of the surrounding spoken Yolngu languages (Cooke & Adone, 1994). In any case, the findings reported here should have made it clear that much more detailed work on YSL and other rural sign langauges is needed to get better insights into typological variation of languages in the visual-gestural modality. The alternate sign languages are in need of particular attention, since they are not only severely underdocumented, but also seriously endangered (Davis, 2010; Meir, Lanesman, Adone, & Cumberbatch, 2012). The author acknowledges and emphasizes the importance and necessity of systematic investigation of these sign languages and includes Yolngu Sign Language under the recently coined term "shared sign languages" (Kisch, 2008; Nyst, 2012) due to the existence of a sign language shared between deaf and hearing community members. The extension of this term has facilitated a prosperous comparison of Yolngu Sign Language with other shared/village sign languages, which has been offered in this book.

Appendix I: List of YSL handshapes

Index

B lax

B open

B curved

A

B

5

V

Claw

O

oflat

Horns

B bent

W

4

A open

F

X closed

U

C

F wide

A open

Nyoka

5 curved

L

X

3

Y

C small

2

I

4 open

3 reverse

Appendix II: Figures

Figure 103. A sample of a stimuli picture

Figure 104. The sign for 'Aboriginal' in the sign language used in north Queensland[136]

Appendix III: Data

Sequence_1_13JUL_G1_2010.mpg
Sequence_2_13JUL_G2_2010.mpg
Sequence_3_10JUL_Mapuru1_2010.mpg
Sequence_4_10JUL_Mapuru2_2010.mpg
Sequence_5_10JUL_Mapuru3_2010.mpg
Sequence_6_13JUL_E_M_2010.mpg
Sequence_7_13JUL_E1_2010.mpg
Sequence_8_13JUL_E2_2010.mpg
Sequence_9_14JUL_L_2010.mpg
Sequence_10_14JUL_T_2010.mpg
Sequence_11_15JUL_G_2010.mpg
Sequence_12_15JUL_L_2010.mpg
Sequence_13_16JUL_W_2010.mpg
Sequence_14_19JUL_L_2010.mpg
Sequence_15_19JUL_L_2010.mpg
Sequence_16_21JUL_J_2010.mpg
Sequence_17_21JUL_L_2010.mpg

Sequence_03_G_2009.mpg
Sequence_ 04_G_D_2009.mpg
Sequence_05_G_D_2009.mpg
Sequence_06_D_2009.mpg
Sequence_7_G_D_frog story_2009.mpg
Sequence_08_G_sentences_2009.mpg
Sequence_09_G_D_classifier stimuli_2009.mpg
Sequence_10_G_kinship terms_2009.mpg
Sequence_11_G_sentences_2009.mpg
Sequence_12_G_sentences_2009.mpg
Sequence_13_G_sentences_2009.mpg

Notes

1. For interlinear glosses of spoken and signed language examples, Leipzig Glossing Rules (Bickel, Combrie, & Haspelmath, 2008) are followed throughout the study.
2. Conjunction ga meaning 'and' links both clauses and clause constituents in spoken Djambarrpuyŋu. Co-ordination with ga is not obligatory (Wilkinson, 1991, p. 690). No manual sign with this meaning is found in Yolngu Sign Language.
3. Deaf with a capital D is a notion that has evolved in the last decades and refers to deaf-identified society, community and culture, whereas deaf is used to denote audiological ability only (Senghas & Monaghan, 2002; Hiddinga & Crasborn, 2011). The term d/Deaf is sometimes used to refer to the pathological and sociocultural forms of deafness at the same time (LeMaster & Monaghan, 2004).
4. See section 4.2.1 for information about the types of the collected YSL data.
5. The European Science Foundation collaborative research grant awarded to Ulrike Zeshan. "Village Sign" was part of the "EuroBABEL program ("Better Analyses Based on Endangered Languages"). For further information on all their projects, see http://www.esf.org/activities/eurocores/running-programmes/eurobabel.html.
6. See chapter 2 for the discussion of these terms.
7. See however, the study conducted by Mitchell, Young, Bachleda, & Karchmer (2006) for some difficulties concerning the estimation of a number of people using ASL in the United States.
8. Although Al-Sayyid Bedouin sign language is a relative young sign language (ca. 75 years), it still cannot be regarded as emerging. Displaying a different kind of social setting as DCSLs (such as small, isolated community, many deaf signers, etc.), ABSL should rather be refererred to as a village sign language (see chapter 2.3 of this book).
9. For a detailed description of the history of the Deaf community in Israel and the development of ISL see Meir & Sandler (2008).
10. See Nyst (2012) for further common features of village sign languages.
11. In some cases, the term "village" sign language seems unsuitable as, for example, in the case of Inuit Sign Language, which is widespread in many Inuit communities throughout a large Canadian territory of Nunavut (Schuit, 2009a; 2012).
12. However, see Kusters (2010, p. 8 ff.), who suggests that considering deaf people as absolutely equal to hearing people in these communities might rather be an oversimplification. By examining a number of deaf villages, she argues that in respect to education deaf people seem to be "singled out" in these communities.

13. In his sociolinguistic typology, Trudgill (2011) refers to communities with these features as "societies of intimates".
14. Bahan & Nash (1996) refer to such communities as "assimilating" communities; Woll & Ladd (2003) call them "integrated communities".
15. Although, Nonaka (2007) reports on two instances so far, in which signing was used between two hearing members of Ban Khor village community in order not to be heard.
16. For a detailed overview of these sign languages, the reader is referred to the original sources and Kendon (1988), who undertakes a comparative review of them. For Sawmill Sign Language see Meissner & Philpott (1975ab); for Monastic Sign Languages see Umiker-Sebeok & Sebeok (1987); Kendon (1990); for Plain Indian Sign Language see West (1960) cited in Davis (2010) and Davis (2010); for North Central Desert Australian Aboriginal Sign Language see Kendon (1987, 1988).
17. Kelley & McGregor (2003) report that out of 650 tribal members in this small Keresan-speaking pueblo in central New Mexico 15 members were deaf.
18. This figure is taken from Kendon (1988, p. 32). It is acknowledged there as being modified after Peterson (1976). I appreciate kind permission by Adam Kendon to reproduce this figure.The arrow has been added by the author to show the area where YSL is used.
19. The figure is from Kendon (1988, p. 70) with kind permission by Cambridge University Press, Cambridge, UK.
20. I thank Suzannah O'Reilly for sharing her article with me.
21. The information was sourced from http://iltyemiltyem.tumblr.com/ (accessed on 10-04-12).
22. One deaf Aborigine at Yuendumu used written English to communicate and a deaf man in Eliot had acquired a sign language at a deaf school in Adelaide (Kendon, personal communication)
23. See Kendon (1984) for some information on the acquisition and learning of sign language at Yuendumu.
24. The table is taken from Pfau (2012, p. 544). Abbreviations used in the table are as follows: SP = spoken language; SL = sign language; G-QS = general question (wh-) sign; MA = manual alphabet; NMM = non-manual markers; PR/A = phonological reduction and/or assimiliation (chracteristic of (Deaf community) sign language compounds); QM = question mark (preceding the question); QS = question sign; sim. = simultaneous; SL = sign language, G-WH = general wh-sign; QP = question particle.
25. In this book, both terms village and shared sign languages will be used.
26. Kendon summarizes the available accounts and raises the issue of its use as an interlingua.

27. Additionally, it might be assumed that the data collected in three fieldsites for this study is valid for the entire Yolngu region. Communication with the informants, the language assistants, other researchers and balanda (non-Indigenous people), who have resided in various communities and settlements in North East Arnhem Region, suggest that there is little or no significant variation in the extent to which the signs are used in different Yolngu communities. However, the reader must be aware that at the present it is unclear whether the same sign language is used throughtout the North East Arnhem Land. More data from various Yolngu communities and settlements are desirable to verify this assumption. Further studies will have to show this.
28. There are, however, alternative orthographies such as Yuulngu or Yolŋu (Wilkinson, 1991). I follow here Cooke & Adone (1994), Christie & Greatorex (2004), Christie (2007) and others by using the spelling Yolngu throughout. Since there is no grapheme ŋ for the velar nasal phoneme in the English keyboard, it needs to be inserted. For ease of reference and citation of this study, I have chosen to adopt the spelling Yolngu.
29. Schebeck (2001, p. 53) explains, that the term Yolŋu is not chosen in arbitrarily manner, but follows the same principle of naming groups and languages throughout Australia. The word Yolŋu occurs in most languages in the North East Arnhem Land with the meaning 'human being', 'person', today also 'dark-skinned person' as opposed to balanda, ŋäpaki, wurrabanda 'white man').
30. Wilkinson uses the regional orthography, which was originally developed by Beulah Lowe for Gupapuyŋu.
31. I acknowledge kind permission by Craig Danvers and the Shepherdson College, Galiwin'ku to reproduce Figure 5.
32. The Land Rights Act produced by the Central Land Council (Sourced from http://www.clc.org.au/Ourland/land_rights_act/alra.pdf on the 02.11.2011)
33. The term homelands and outstation are used interchangeably in the literature (cf. Calma, 2009, p. 108) to define 'small decentralized communities of close kin, established by the movement of Aboriginal Peoples to land of social, cultural and economic significance to them'. The term homelands is favored here, since this term used by the Aboriginal Peoples themselves. "Homelands is the term that they believe most strongly reflects their traditional, ancestral and spiritual links to the language, kin and land that forms part of their home" (Amnesty International Report (2011) "The Land Holds Us: Aboriginal Peoples' right to traditional homelands in the Northern Territory" http://www.amnesty.org.au/indigenous-rights/comments/26216 retrieved on the 26.11.2011).
34. „Arnhemland is like the European Union, made up of many different nations, each clan-nation with their own language, each with its own national estate. Bringing everybody in from the homeland centres into the major settlements is not the right thing to do because people do not feel secure or happy living in

another man's land" Yiŋiya Guyula, Liya-Dhalinymirr Elder Senior Lecturer, Charles Darwin Univerisity (Source: http://www.culturalsurvival.org.au/mapuru.html)

35. The Indigenous visual arts industry is a good example of economic development, which has grown out of the homeland movement. In many homelands Yolngu are engaged in visual art production such as paintings or yidaki art, woven products such as baskets and mats or they are building cultural tourism projects such as the one in Mapuru. Based on my own experience, it is evident that such projects are not possible in a centralized community such as Galiwin'ku.
36. The 2010 Australian Bureau of Statistics report (www.abs.gov.au) revealed that the Northern Territory's population estimates 229,000 and thus represents about 1% of the total population of Australia.
37. This information was sourced from the website 'Ceremony-THE YOLNGU' (http://filmaustraliaceremony.com.au/s1_1.htm) (accessed on 7-11-11).
38. The arrow is directed at the Yolngu linguistic bloc in NE Arnhem Land.
39. Dixon (2002) rejects the idea of the large genetic unit being referred to as 'Pama-Nyungan language family' and offers a hypothesis about all Australian languages being genetically related to an ancestor language, proto-Australian.
40. The name 'Pama-Nyungan' derives from the terms pama of the linguistic groups of the far north-eastern areas and nyunga in the languages in Southwest of Australia. Both terms mean 'man' in these Indigenous languages. The family name has been chosen following the pattern of language family names such as Indo-European or Malayo-Polynesian.
41. Matha – (lit. tongue, speech, words; language, dialect, pronunciation, patrilineal social group; e.g. Balanda Matha – the English language) (Zorc, 1986, p. 181).
42. In contrast to Heath (1978) and Schebeck (2001), Dixon treats Dhuwal/Dhuwala (and possibly also Dhuwaya) as one language (Ya1), and adds Djinang (Yc1); Djinba (Yc2) to the classification.
43. Schebeck (2001, p. 14–16).
44. The abbreviations are adapted from Wilkinson. PROM is used for prominence, INTENS for intensifier, COMPL for completive, SEQ for sequence, ABL for ablative.
45. Schebeck (2001, p. 2).
46. Originally, Gupapauyŋu was used as an "official language" of the bilingual program at the school on Galiwin'ku as the school took over the bilingual education in year 1974. For more information about the bilingual education in the Northern Territory, I refer the reader to Devlin (2009).
47. The prevalence rates in developed countries are usually 0.1% to 0.2%, which is calculated based on the statistic stating that 1 or 2 in every 1,000 babies are born with a hearing impairment (Woodward, 2003). The rate of 0.32% arises

given that the appoximate population of Galiwin'ku is around 2,200 Yolngu people (according to ALPA, http://www.alpa.asn.au) and the number of deaf individuals in Galiwin'ku during the fieldwork in 2010 was reported to be 7. This number is however unreliable, since the population of communities in NE Arnhem Land varies during the seasons with many homeland residents coming to Galiwin'ku during the wet season.

48. Kendon (1988) is, for example, very skeptical of the idea that deafness is what has induced the appeareance of sign language in the first place. In his view, the prevalence of sign languages throughout Australia is due to the eco-sociological conditions of traditional Aboriginal society.
49. I remind here that Deaf with a capital D is used to refer in the literature to deaf-identified society, community and culture, whereas deaf is used to denote audiological ability only (Senghas & Monaghan, 2002; Hiddinga & Crasborn, 2011).
50. In this example, a translation of the mouthed words is once included to make clear why sign is needed to understand this sentence. Similar examples have also been observed by Heath (1982, p. 55).
51. The map is adapted from Google Maps (accessed 23-05-2011) and is modified by the author in order to locate Mapuru.
52. Mapuru has been added on the map by the author based on a map from Devlin (map 5, 1986). Source: http://livingknowledge.anu.edu.au. Courtesy of the Australian National University.
53. I acknowledge kind permission by Craig Danvers from the Shepherdson College to reproduce Figure 11, which was made for the school project in Galinwin'ku.
54. According to the ALPA (The Arnhem Land Progress Aboriginal Corporation) http://www.alpa.asn.au/pages/Galiwin%26%23039%3Bku/ (accessed on 03-04-2012).
55. All figures in the table were rounded down to the nearest whole number. In case of dialogues and conversations, the total minutes were divided by the number of participants.
56. DFG is the central, self-governing research funding organization in Germany, which has provided financial support the present study.
57. The characteristics of this participant are not included in Table 4.
58. For information see http://rrzk.uni-koeln.de/
59. For this study the version 4.1.0 was used. For more detailed information see Crasborn & Sloetjes (2008).
60. I would like to thank the MPI for providing the tool freely on the internet.
61. For the notation and transcription system that is used throughout this book, see annotation conventions.
62. In such cases, the signer is right-handed.

63. Other researchers count orientation as a separate parameter, thus accounting for five categories: handshape, location, movement, orientation and non-manual behavior (cf. Brentari, 2012).
64. The notion of "markedness" assumed here goes back to Jakobsonian Markedness Theory.
65. For some handshapes no fonts were available. In such cases, the reader is referred to handshape pictures presented in the Appendix I.
66. In this analysis, the underlying handshape of a particular YSL sign was counted without taking into account any occurring variation (see previous section for discussion).
67. As more data will become available, descriptions such as these might naturally be subject to revision.
68. Dominant and non-dominant hands have also been labeled strong and weak hand (Padden & Perlmutter, 1987) or active and passive hand (Battison, 1978). I refer to the hand, which moves or is higher in space or is more clearly articulated as dominant, the other hand is considered non-dominant (see also Sandler, 2006; Crasborn, 2011).
69. Different types of two-handed signs have been labeled differently in the literature. Van der Hulst (1996) distinguishes between balanced and unbalanced signs. Schmaling (2000) calls them double-handed and two-handed respectively.
70. I thank Roland Pfau for drawing my attention to this survey.
71. 1% of signs accounts for signs changing from one-handed to two-handed ones (Sutton-Spence & Kaneko, 2007).
72. Using the Dictionary of BSL/English (Brien, 1992, cited in Sutton-Spence & Kaneko, 2007) as a source for BSL lexical items, Sutton-Spence & Kaneko (2007) examined 1735 signs.
73. In one case, a signer was holding an object in one hand and signing with the other.
74. For an extensive survey of linguistic nonmanual markers and its functions in sign languages, the reader is referred to Pfau & Quer (2010).
75. I thank Diane Lillo-Martin and Wendy Sandler for sharing this image with me and acknowledge their kind permission to reproduce it. This image was taken from Sandler & Lillo-Martin (2006) Sign Language and Linguistic Universals. New York: Cambridge University Press, p. 30. The authours keep the copyright.
76. From Crasborn, et al. (2008, p. 49) with kind permission by John Benjamins Publishing Company, Amsterdam/Philadelphia. www.benjamins.com.
77. I am indebted to Christo Sailer for the illustration of this DGS sign.
78. It is interesting to mention at this point, that YSL strikingly differs from other documented Australian Aboriginal sign languages in the presence of signs

denoting suffix markers. For NCDSLs, for example, six semantic suffix signs were reported with various functions. One suffix marker, which is signed with a handshape by "rapidly flipping away from the signer with a forearm pronation" (Kendon, 1988, p. 229), is used to mark possession in Warlpiri sign. It is reported to be added to the personal pronominal signs, to kin terms or nominals to convey possessive meaning as in (1). The suffix marker in (1) stands for the 'possessive' suffix in spoken Warlpiri as shown in (2).

(1) HAT MAN POSS-MARKER [WSL]
'the man's hat'

(2) murkardi wati-kurlangu [Warlpiri]
hat man-POSS
'the man's hat'

Thus, while Kendon (1988) shows that signs in NCDSLs are employed as morphemic units of the spoken languages, no signs for any suffix markers have been found in the YSL dataset so far.

79. This example might be seen as a case of a direct borrowing from Djambarrpuyŋu into YSL.
80. YAKA appears to be very similar to the Warlpiri negation sign LAWA (Kendon, 1988).
81. This is similar to Kata Kolok negation sign, which is also indicated by a side-to-side movement of a - hand (De Vos, 2012, p. 141). In IUR, a and a handform are used interchangeably to negate a sentence (Schuit, 2013, p. 48).
82. Davis (2010) does not explicitly mention that PISL has a minimal question word paradigm. One can, however, infer from the examples published in Mallery (1881, p. 479–83 cited in Davis, 2010, p. 57) that a general question sign glossed as Q-FORM conveys a range of different meanings in PISL. Consider these examples:

Q-FORM BRING Q-FORM
'Where are you from?' 'Who are you?'

Bakker (2012b), however, reports, that PISL also has bimorphemic question words, such as Q+COUNT.FINGERS 'how many, much', Q+WORK 'how', Q+POINT 'where', Q+PERSON 'who' and Q+COUNT+SLEEP, MOON, WINTER 'when'.

83. The figure is taken from Aboh, Pfau, & Zeshan (2005, p. 22) with kind permission by De Gruyter, Berlin, Germany www.degruyter.com.
84. A transliteration of Russian words is presented in italics.
85. In IUR the PALMS-UP sign also functions as a negator (see Schuit, 2013, p. 51).

86. In Warlprir there is also a sigh for NYAPARRA meaning where. This is done with an open hand palm upwards and moved rapidly side to side horizontally (Kendon, 1988).
87. I do not refer to the question sign as wh-phrase and do not gloss it as such, since this manual sign is used as marker in both content and polar questions (see section 6.2.2 for discussion).
88. IUR appears to be an exception in this respect and does not make use of a larger signing space as other village sign language. IUR signs are not signed with widely extended arms and only a few locations articulated below the waist, on the back, or above the head have been found (Schuit, 2013).
89. A sign similar to YSL MÄRI is also found in AdaSL and means 'younger sibling'. Nyst (2007, p. 100) states that the AdaSL sign may be a generic directional sign meaning 'coming from behind me' as the word for 'younger sibling' in the surrounding spoken language, Akan, is akyiba, which consists of the morpheme akyiri 'later' or 'back' and ɔba 'child'.
90. As can be seen in Figure 38 – Figure 40, all YSL kinship signs are performed by pointing or touching a particular body part. The usage of some places of articulation seems to be motivated by specific physical traits or characteristics of that kin. The image of female breast is, for example used to refer to the mother or the image of a beard for the sign MOMU 'mother's father' similar to other sign languages (Wilkinson, 2009). The sign DHUWAY for 'husband' and 'wife' (see Figure 53) is articulated by touching or pointing to the hip and has been explained by the participants to refer to the close relationship of husband and wife, who always stay at one's side. For some other kinship signs, such as MÄRI 'mother's mother' (cf. Figure 52), the reference to specific body parts seems to be associated with the Yolngu cultural values and beliefs about the interconnection of body and kin relations (see also Heath, 1982; Kendon, 1988).
91. The figure is based on the drawing from Pfau & Steinbach (2006, p. 27) and is modified by the author.
92. I thank Diane Lillo-Martin and Wendy Sandler for sharing this image with me and acknowledge their kind permission to reproduce it. This image was taken from Sandler & Lillo-Martin (2006) Sign Language and Linguistic Universals. New York: Cambridge University Press, p. 30. The authours keep the copyright.
93. The figure is taken from Cormier (2012, p. 230) with kind permission by De Gruyter, Berlin, Germany www.degruyter.com. I thank Kearsy Cormier for sharing the images with me.
94. The figure is taken from Cormier (2012, p. 232) with kind permission by De Gruyter, Berlin, Germany www.degruyter.com. I thank Kearsy Cormier for sharing the images with me.

95. But see Zwitserlood (2003) who proposes that NGT classifiers pattern similar to gender agreement features.
96. I acknowledge kind permission by the authors, Jane Tsay and James Myers, to reproduce Figure 59.
97. In the literature on deixis theory, in these cases the body is treated as "origo" (Bühler, 1983), i.e. the sourse of the vector.
98. The spatial points are marked by the lower-case letters in the example to show agreement between the same locations during a single discourse.
99. In Table 8 these pronouns are glossed as "1+2" for inclusives and as "1" for exclusives.
100. From Wilkinson (1991, p. 182).
101. It must be mentioned here that no detailed analysis of the use of eye gaze with pronominal signs has been undertaken by the author. In fact, from the overall data, the impression is that the eye gaze always occurs with the pronominal signs in YSL and thus appears irrelevant for marking of pronominal referents. It remains to be seen, however, whether these preliminary observations can be substantiated by further data.
102. This finding is very interesting especially in the light of recent work with adult homesigners, who use this form (Coppola, Spaepen, & Goldin-Meadow, 2013). I thank Marie Coppola for pointing it out to me.
103. For reference to far-away places such as Germany, Yolngu signers also pointed in the direction of the airport. This can be considered as metonymic pointing (Le Guen, 2011b).
104. Interesting, that in large Deaf community sign languages the placement of loci in signing space is reported to be motivated by the category of definiteness. Barberà (2012) states for Catalan Sign Language (LSC), for example, that the upper locations of pointing signs correlate with non-specificity. It is noteworthy, that the speech communities, for which this "up is far communicative rule" has been reported so far, speak languages with a dominant absolute Frame of Reference (Levinson, 2003) (see section 12.2.2).
105. Notice that place names compounds in ABSL are also using pointing signs (Sandler, Aronoff, Meir, & Padden, 2011, p. 43).
106. There are also Deaf community sign languages, such as NGT, which do not possess distinct possessive pronominal forms.
107. The transcription examples from spoken languages other than English have up to four lines: the original source language, as in the examples to follow Russian and Mandarin Chinese (line 1), the accepted standard form transcribed/transliterated from the source language (line 2), the morphological gloss (line 3) and the English translation (line 4). The elements in an example that are relevant for the discussion are bold or underlined.

108. According to Rutherford (1989) topic-prominent languages such as Mandarin Chinese are often pragmatically constrained, whereas subject-prominent such as English are often grammatically constrained.
109. The figure is taken from Meir, I., Padden, C., Aronoff, M., & Sandler, W. "Body as subject", (2007), Journal of Linguistics 43, pp. 531–563 reproduced with permission by Cambridge University Press. I thank Wendy Sandler for sharing this image with me.
110. The figure is taken from Sandler & Lillo-Martin (2001, p. 544) with kind permission by John Wiley & Sons Inc., Hoboken, NJ, http://eu.wiley.com/. I thank Wendy Sandler for sharing this image with me.
111. According to conventions for sign notation used by Johnston & Schembri (2007), a manual modification of a sign is described by letters after and/ or before the modified sign. In the examples cited here +f indicates spatial modification forward/to the front, +rt to the right, and +lf to the left.
112. I acknowledge kind permission by James H.-Y. Tai and the TSL Research Group to reproduce Figure 71.
113. Other verb types (except the general directional DIR-COME-HERE) in the dataset had less than 5 tokens and were, therefore, excluded from the analysis. However, none of them occurred as spatially modified in all occurrences in the collected data.
114. Only verb types with more than 5 tokens were included. Those with 5 tokens and less were modified about 50% and less of the time.
115. This kind of movement from side to side is typically found in Deaf community sign languages to denote sentences such as "he gave him something" or "he tells her" (Padden, Meir, Aronoff, & Sandler, 2010).
116. Reduplication of verbs has been however considered as a marker of iterativity in YSL verbs (Cooke & Adone, 1994, p. 6).
117. In some cases, I had to rely on non-syntactic cues (semantic and prosodic means) to segment the text into sentences.
118. The components of the sentence or phrase were coded in terms of S for subject, V for verb and O for object.
119. A similar proposal of distinguishing between plain and non-plain (spatial+agreement) verbs has been made for Brazilian Sign Language and Catalan Sign Language by other researchers based on quite different arguments (Quadros & Quer, 2008; Quer, 2010).
120. Classifier constructions are reported to occur in all Deaf community and emerging sign languages described so far. The reader is referred to the publication analyzing classifiers in particular sign languages such as ASL (Supalla, 1986, 2003; Liddell 2003; Sandler & Lillo-Martin, 2006), Auslan (Schembri, 2003; Johnston & Schembri, 2007), BSL (Sutton-Spence & Woll, 1999), DSL (Engberg-Pedersen 1993), DGS (Glück & Pfau, 1998), IPSL

(Zeshan, 2003), ISL (Meir 1998; Aronoff, Meir, Padden & Sandler, 2003, Meir & Sandler, 2008), IUR (Schuit, Baker, & Pfau, 2011), HKSL (Tang, 2003), HSL (Schmaling, 2000), NGT (Zwitserlood, 2003), SSL (Bergman & Wallin, 2003), Thai SL (Tumtavitikul, Niwatapant, & Dill, 2009) or TSL (Chang, Su & Tai, 2005).

121. Although different terminology "has prevented much needed cross-linguistic comparison of these forms" (Schembri, 2003:9), the classifier constructions have been referred to as 'verbs of motion and location' (Supalla, 1982, 1986), 'classifier predicates' (Schick, 1987, 1990), 'polymorphemic verbs' (Engberg-Pedersen, 1993), 'polysynthetic verbs' (Wallin, 1990), 'spatial-locative predicates' (Collins-Ahlgren, 1990), 'polycomponential verbs' (Schembri, 2003), 'property markers' (Slobin, et al., 2003), 'reference markers' (Edmondson, 1989), 'proforms' (Sutton-Spence & Woll, 1999, Chang, Su & Tai, 2005), 'templated visual representations' (Cogill-Koez, 2000) or 'depicting constructions' (Cormier, Quinto-Pozos, Sevcikova, & Schembri, in prep).
122. There is controversy in this field. It is a subject of debate whether classifiers should be considered as linguistic units in nature. The idea that classifiers are visually based semiotic system (DeMatteo, 1977) or linguistic and gestural hybrids (Liddell & Metzger, 1998) will not be considered here.
123. One question that remains unanswered in the sign language literature is whether there are noun classifiers as proposed by Bergman & Wallin (2003) for SSL. They claim that SSL has both, verbal and noun classifiers, free morphemes, which occur after nouns in constructions as ONE MAN CL-PERSON ('a man') or MIRROR CL-SQUARE ('a mirror'). It seems however that these 'noun classifiers' share many characteristics with tracing SASSes, i.e. they are free morphemes and their usage is not obligatory. Unless more instances of noun classifiers are discovered in the future, it is questionable to include them into the typology of sign language classifiers. This issue remains open for further research.
124. I thank Diane Lillo-Martin and Wendy Sandler for sharing this image with me and acknowledge their kind permission to reproduce it. This image was taken from Sandler & Lillo-Martin (2006) Sign Language and Linguistic Universals. New York: Cambridge University Press, p. 91. The authours keep the copyright.
125. Reprinted from Lingua 117/7, Tang, G., & Yang, G., "Events of motion and causation in Hong Kong Sign Language", p. 1224, Copyright (2007) with permission from Elsevier.
126. The figure is taken from Meir & Sandler (2008, p. 108) with kind permission by Lawrence Erlbaum Associates Inc., Mahwah, USA. I thank Wendy Sandler for sharing this image with me.
127. I thank Victoria Nyst for making me aware of that.

128. The use of handling handshapes in lexical YSL signs has been identified in three signs so far: the verb LUKA ‘to drink’, which is signed with the handshape, the signs for BANANA and ORANGE, which were both produced with the handshape.
129. The figure is taken from Zwitserlood (2012, p. 162) with kind permission by De Gruyter, Berlin, Germany www.degruyter.com.
130. Although the number of examples is small, the pattern is suggestive and warrants attention.
131. I am fully aware of the difficulties in connection with distinguishing between compounds and phrases. Some of the criteria being followed here to identify YSL compounds are in need of further research. For the present study, I follow the criteria proposed by Meir, Aronoff, Sandler & Padden (2010).
132. The reader is also referred to Nyst (2012, p. 562 ff.), who mentions further similarities between shared sign languages such as a high degree of multi-channeledness.
133. De Vos (2012, p. 40) estimates that multiple deaf signers were already present in the KK community five generations ago.
134. The exact process of how the increasing arbitrariness of lexical items leads to the increasing number of handshapes is however not explained in Nyst (2007).
135. See Kendon (1984) for some information about the acquisition of Warlpiri sign language.
136. O’Reilly (2006, p. 14). I acknowledge kind permission by Suzannah O’Reilly to reproduce this figure.

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Index

Aboriginal 12, 20, 22–25, 27–28, 36, 38–41, 46–49, 51–54, 56–57, 60, 66, 147, 150, 224, 236–237, 239–240

acquisition 11, 17, 28, 65, 81, 227–228, 236, 246

Adamorobe Sign Language (AdaSL) 7, 18, 77, 82, 89, 123

age 13, 15, 57, 64, 162, 221–222, 228

agreement 4, 6, 14, 28, 90, 121, 131, 156–166, 175, 177, 179, 184, 209, 219, 221–222, 243–244

Al-Sayyid Bedouin Sign Language (ABSL) 19, 148–149, 163, 196, 208, 211, 213, 217–222, 225, 235, 243

alternate sign language 7, 12, 17, 19–23, 27–31, 48, 63, 75, 89, 90, 92, 95, 100, 117, 226, 230

American Sign Language (ASL) 10, 13–14, 18, 27, 30, 37, 82, 85, 89, 95, 101, 108, 116, 129–134, 141, 147–148, 158–159, 171, 189, 191, 197–198, 210–211, 213, 221–223, 235, 244

Australian Sign Language (Auslan) 13, 25–26, 30, 49, 53, 68, 70, 77, 130, 161, 165, 167, 191, 217, 244

Ban Khor Sign Language 19, 108

bilingual 40, 51, 238

Brazilian Sign Language 131, 244

British Sign Language (BSL) 10, 13, 37, 82, 87–89, 93, 130, 135, 147, 165, 240, 244

Chinese Sign Language (CSL) 104

classifier 4, 6–8, 62, 121–122, 142, 146, 181, 186–193, 196–198, 200, 202–206, 208–210, 219–222, 229, 244–245

compound 145, 147, 152, 211–212, 214

content 106–107,113–114, 116–119, 242

Croatian Sign Language 117, 131, 133

cross-linguistic 3, 5–6, 8, 73, 75, 101, 107–109, 116–117, 119, 121–122, 128, 136, 149, 158, 163, 180, 192, 203, 217, 230, 245

cross-modal 3–7, 10, 17, 50–51, 63, 106–107, 113, 121, 127, 136, 154, 162–163, 192, 229–230

culture 16, 39–40, 49–50, 53, 180, 210, 223, 226, 235, 239

Danish Sign Language (DSL) 109, 130, 148, 244

deaf 3–4, 6–7, 10–18, 20, 22–23, 25–26, 28–31, 35–37, 47–49, 51–54, 56, 58, 63–65, 82, 87, 95, 104, 118, 124, 150–151, 183, 207, 219, 221–222, 225–226, 228–230, 235–236, 239, 243–244

dialect 40, 42–46, 50, 53, 65, 224, 238

Djambarrpuyŋu 36, 40, 42–46, 51, 63, 65–66, 69, 72, 96–97, 101–102, 106, 110, 113–114, 118, 137–139, 143, 147, 182–183, 214, 224, 235, 241

double 106, 111–112, 159

entity 7, 186, 190, 192, 197, 200, 202–204, 220, 222

exclusive 40, 127–128, 132–133, 137, 139, 143–145

eye gaze 72, 131, 133–134, 141, 243

facial expression 91, 98–100, 117

Finnish Sign Language (FSL) 109

gender 64, 127–128, 132, 136, 147, 157–158, 243

German Sign Language (DGS) 10, 94, 101, 104, 111, 131, 142, 150, 159–161, 171, 184, 191, 203, 210, 223–224, 240, 244

gesture 11, 28, 63, 71, 92–93, 99, 106, 109–110, 131, 164–166, 245

Greek Sign Language (GSL) 104, 148

Gupapuyŋu 36, 40, 42–45, 66, 101, 224, 237

gurruṯu 40, 45, 57

handling 186, 189, 191–192, 196–197, 204–210, 246

handshape 25, 70, 75, 77–79, 81–83, 85–86, 88, 100, 102–103, 124, 132–133, 140–141, 144, 148, 171, 188–191, 197–198, 200, 202–208, 212, 217, 220, 222, 225, 240–241, 246

head movement 96–99, 103–104, 106, 117

headshake 91, 99, 106

hearing 3, 7–8, 12, 14–15, 17–18, 20–23, 25, 27–31, 37, 41, 46–52, 56, 58, 63–65, 95–96, 113, 148, 150–151, 182–183, 221, 225–228, 230, 235–236, 238

homeland 39–40, 48, 54, 237–239

homesigns 11, 14

Hong Kong Sign Language (HKSL) 191, 197, 245

iconicity 7, 227–228

inclusive 41, 127–128, 132–133, 137, 139, 143–144, 147, 155

index 14, 17, 21, 63, 70–72, 79–81, 107, 128–131, 134–137, 140–143, 145–155, 164–165, 170–171, 177, 187, 192, 195–197, 200, 202, 214, 217–218, 223–226, 242–243

Indopakistani Sign Language (IPSL) 94–95, 107, 109, 191, 244

interrogative 90, 106–110, 113–114, 116

Inuit Sign Language 17, 19, 235

Kendon, Adam 20–25, 27–28, 35, 41, 46–47, 50–53, 63, 75, 77, 87, 89–90, 92, 95, 100, 109–110, 117, 123, 139–140, 145, 147, 150, 214, 227, 230, 236, 239, 241–242

Keresan Pueblo Indian Sign Language 23, 28, 30–31

kinship 15–16, 36, 40, 56–58, 62–63, 66, 71, 96, 125, 148, 153, 225, 237, 241–242

Lautsprachbegleitende Gebärden (LBG) 11

location 6, 8, 62, 70–71, 75, 77, 91, 130, 134–135, 141, 144–145, 184–185, 188–189, 193–197, 202, 204, 208, 213, 223, 229, 240, 245

Mandarin Chinese 104, 116, 128, 157, 186–187, 243–244

manual 11, 21, 51, 69, 71, 75, 77, 82, 94, 96–97, 99, 101–102, 104, 106, 108, 118–119, 121, 131, 143, 230, 235–236, 242, 244

Martha's Vineyard Sign Language 18

Mauritian Sign Language (MSL) 14–15, 30

minimal pairs 75, 77

morphological 6, 8, 10, 37, 42, 46, 52, 69, 73, 95, 121, 139, 145, 147, 156–158, 162–163, 178–179, 214, 221, 229, 243

mouthings 51, 94–96, 100, 110, 143, 147

Nederlandse Gebarentaal (NGT) 10, 77, 89, 191, 197, 203, 210, 217, 243, 245

negation 8, 37, 73, 90, 96, 98–106, 118–119, 241

Nicaraguan Sign Language 14–15, 28, 30, 222

nonmanual 22, 71, 75, 77, 90–92, 96, 98–101, 103–104, 106–107, 117–119, 131, 134, 240

Non-Pama-Nyungan 41–42

North Central Desert Area Sign Languages (NCDSLs) 22, 27–28, 46–47, 77, 87, 90, 92, 117, 139–140, 145, 147, 214, 241

Nyst, Victoria 3–4, 6–7, 10, 12–13, 17–19, 30–31, 48–49, 63, 77, 82, 89, 100, 123, 125, 136, 149, 169–170, 186, 191, 195–196, 200, 208, 210, 217–222, 226–230, 235, 242, 245–246

otitis media 23, 47–48

Pama-Nyungan 41–42, 46, 238

Pfau, Roland 5, 10, 19–20, 28, 90–91, 94–96, 98, 101, 107, 117, 136, 148–149, 161, 163, 176, 191–192, 197, 203, 209, 229–230, 236, 240–242, 244–245

phonological 6, 8, 13, 21, 60, 69–70, 73, 75, 77–78, 84–85, 90–93, 96, 98, 100, 131, 165, 213, 222, 229–230, 236

Plain Indian Sign Language 22, 236

plural 127–130, 133, 136–137, 139, 142–143, 147, 160

pointing 14, 63, 70–72, 128–131, 134–137, 140–141, 143, 145–155, 164–165, 171, 177, 195–196, 214, 218, 223–226, 242–243

politeness 127–128, 133, 136–137, 147

possession 8, 63, 105, 132–133, 145–146, 155, 187, 192, 241, 243

pronoun 8, 41–42, 110, 114, 121–122, 127–137, 139–140, 142–149, 152–155, 157, 161, 171, 177, 179, 182–183, 195, 218, 224, 230, 241, 243

Providence Island Sign Language 17, 19, 77, 107, 109–110, 129, 148, 163, 217–220, 226

Queensland 24–25, 53

question 6, 10, 31, 50, 66, 69, 94, 106–114, 116–119, 130, 145, 148, 164, 167, 174–175, 180, 184, 224, 229, 236, 241–242, 245

R-loci 128, 135–137, 148, 156, 161, 164–165, 178, 184, 222

Russian 12–13, 128, 133, 156–158, 241, 243

Russian Sign Language 12–13

shared sign language 49, 51, 126, 148–149, 226–227

Signed English 18, 25–26, 53

signing space 3–4, 6, 8–9, 31, 63, 75, 121–123, 125–126, 128, 134, 136–137, 148, 150, 153–155, 159, 161, 163, 171, 176–179, 200, 218–220, 226–227, 229, 242–243

sign language type 12, 15, 17–18, 20, 22–23, 25, 27–28, 30, 48, 52, 222, 230, 235, 242

sociolinguistic 3–4, 6–8, 11, 13, 19, 30–31, 33, 35, 41, 43, 63, 82, 220–222, 229–230, 236

spatial 3–8, 10, 15, 28, 31, 61, 63, 73, 98, 121–122, 127, 131, 136, 152, 156, 158–159, 161–175, 177–180, 184–186, 195, 218–224, 229, 243–244

speech taboo 27, 46–47, 92

Swedish Sign Language (SSL) 10, 148, 245

Taiwan Sign Language 116, 132, 162, 217, 244–245

Thai Sign Language 191

topographic 150, 184

transitive 156, 160, 173, 179–182, 185, 187, 192, 204–206, 218–219

Turkish Sign Language (TSL) 104, 116, 132, 162, 217, 244–245

typology 3, 5, 10–11, 59, 69, 85, 101, 104, 107, 116–117, 119, 127, 134, 136, 154, 164, 187, 223, 230, 236, 245

Urubú Kaapor Sign Language 19, 109, 116, 123

verb directionality 6–8, 121–122, 156, 158–159, 161, 163, 166, 170, 177, 180, 184, 186, 193–195, 203–204, 207, 218–220, 222, 229–230

village sign language 17–18, 235, 242

visual-gestural 10, 50, 121, 127, 154, 162, 230

Warlpiri sign language 25, 52, 92, 109, 145, 150, 241, 246

word order 6, 10, 15, 21–22, 37, 105, 157–158, 179–180, 182–183, 185, 229–230

Yolngu 3–8, 12, 20, 25, 28, 31, 35–54, 56–59, 63–66, 69, 71–72, 96–97, 100–102, 106, 110, 113–114, 118, 121, 125, 137–139, 143, 147, 152–154, 182–183, 214, 222, 224, 226, 228–230, 235, 237–239, 241–243

Zeshan, Ulrike 3, 5–7, 10–11, 15, 17–18, 49, 62–63, 69, 90, 94–95, 98, 101, 104–109, 111, 116–117, 119, 133, 136–137, 146, 148–149, 152, 163, 191, 197, 203, 218, 220, 222–223, 226, 229, 235, 241, 245

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