

Sign language varieties of Indonesia:
A linguistic and sociolinguistic investigation

by Nicholas Palfreyman.

**A thesis submitted in partial fulfilment for the requirements of the degree of
PhD (Doctor of Philosophy) at the University of Central Lancashire.**

April, 2015.



Student declaration

I declare that while registered as a candidate for the research degree, I have not been a registered candidate or enrolled student for another award of the University or other academic or professional institution.

I declare that no material contained in the thesis has been used in any other submission for an academic award and is solely my own work.

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Authorisation

This research was undertaken in accordance with the rules of the Indonesian Ministry for Research and Technology (Research Permit Number 0128/SIP/FRP/SM/VII/2011).

Abstract

Until now there has been no robust (socio)linguistic documentation of urban sign language varieties in Indonesia, and given the size of the Indonesian archipelago, it might be expected that these varieties are very different from each other. In this kind of situation, sign linguists have often applied lexicostatistical methods, but two such studies in Indonesia have recently produced contradictory results.

Instead, this investigation uses conceptual and methodological approaches from linguistic typology and Variationist Sociolinguistics, contextualised by a sociohistorical account of the Indonesian sign community. The grammatical domains of completion and negation are analysed using a corpus of spontaneous data from two urban centres, Solo and Makassar.

Four completive particles occur in both varieties, alongside clitics and the expression of completion through mouthings alone. The realisations of two variables, one lexical and one grammatical, are predicted by factors including the syntactic and functional properties of the variant, and younger Solonese signers are found to favour completive clitics. The reasons for intra-individual persistence and variation are also discussed.

Negation is expressed through particles, clitics, suppletives, and the simultaneous mouthing of predicates with negative particles. These paradigmatic variants occur in both varieties, with small differences in the sets of particles and suppletives for each variety. The realisations of four variables are found to be conditioned by factors including predicate type, sub-function, and the use of constructed dialogue. The gender of the signer is found to correlate with the syntactic order of negative and predicate; younger Solonese signers are also found to favour negative clitics and suppletives.

The similarities revealed between the Solo and Makassar varieties are discussed with reference to the history of contact between sign sub-communities across the archipelago. The investigation concludes with a discussion of factors that favour and disfavour the convergence of urban sign language varieties.

Table of contents

Student declaration	ii
Abstract	iii
Table of contents	iv
List of tables	viii
List of figures	ix
Acknowledgements	xi
List of informants	xiii
Transcription conventions	xiv
Abbreviations for sign languages	xv
CHAPTER 1 – Introduction: Sign language varieties of Indonesia	1
1.1. Signed languages, modality and variation.....	1
1.2. Natural sign languages and artificial sign systems.....	4
1.2.1. Natural sign languages and language contact	5
1.2.2. Educational intervention through artificial sign systems	6
1.3. The concept of an ‘urban sign community’	8
1.4. The linguistic ecology of urban sign language varieties in Indonesia.....	10
1.4.1. Indonesia: a brief geographic, demographic and historical overview	11
1.4.2. Spoken languages in Indonesia.....	13
1.4.3. Demography and proximity of sign community members.....	14
1.4.4. Attitudes towards deafness and sign language.....	16
1.5. Existing research on sign language varieties in Indonesia	17
1.6. Research questions	20
1.7. Thesis structure	21
CHAPTER 2 – Analysing sign language variation: Methodological approaches ..	22
2.1. Sociolinguistic dilemmas for linguists	23
2.1.1. Mutual intelligibility and competing definitions of ‘language’	24
2.1.2. Language as a socio-political construct	25
2.1.3. The naming and delineation of sign languages	27
2.2. The use of lexicostatistical methods in sign language research	29
2.2.1. What is lexicostatistics?.....	30
2.2.2. Lexicostatistical studies of sign language varieties.....	34
2.2.3. Applying lexicostatistical methods to sign languages: some problems.....	37
2.2.4. Comments on the application of lexicostatistical methods	43
2.2.5. Summary: the need to move away from lexicostatistics in Indonesia	45
2.3. Approaches to analysing sign language variation	45
2.3.1. Variationist Sociolinguistics	46
2.3.2. Linguistic typology and contrastive linguistics.....	49
2.3.3. Corpus linguistics	51
2.4. Chapter summary	53
CHAPTER 3 – Method and research design	56
3.1. Conceptual and empirical framework	56

3.1.1.	Conceptual and methodological approaches.....	56
3.1.2.	Empirical data and data interpretation	59
3.2.	Fieldsites and fieldtrips	62
3.3.	Linguistic data collection and sampling.....	66
3.3.1.	Convenience sampling.....	67
3.3.2.	The selection of spontaneous, natural texts.....	69
3.3.3.	Balanced sampling and the selection of texts	71
3.3.4.	Text types and the comparability of texts	72
3.4.	Identifying target domains, variables and variants.....	73
3.5.	Transcription and annotation of linguistic data.....	76
3.5.1.	Glossing and the identification of variants.....	77
3.5.2.	Annotation.....	81
3.6.	Quantitative analysis of linguistic data.....	87
3.7.	Ethical considerations	89
3.7.1.	Working with and through the community.....	90
3.7.2.	Practical ethical issues associated with data collection and storage.....	92
3.7.3.	Actual and anticipated research outputs for the sign community.....	93
 CHAPTER 4 – A history of contact between sign language sub-communities		98
4.1.	Sources of sociohistorical data.....	98
4.2.	The development of deaf education	101
4.2.1.	Foundation of private deaf schools (1930s onward)	101
4.2.2.	National and transcolonial links in deaf education	106
4.2.3.	The likely origins of the two-handed alphabet.....	108
4.2.4.	‘Schoolization’ and multidialectalism	110
4.3.	The development of the sign community.....	112
4.3.1.	Emergence of local deaf organisations in Java (1960s onward)	112
4.3.2.	Gerkatin, the Indonesian Association for the Welfare of the Deaf	113
4.3.3.	Internal migration and social contact between sign sub-communities.....	115
4.3.4.	Transnational language contact	120
4.3.5.	The virtual sign community.....	122
4.4.	The effects of language policy and planning on sign language varieties	124
4.4.1.	SIBI: Language contact and language planning	124
4.4.2.	<i>Bisindo, isyarat lama</i> and the growing awareness of sign language.....	128
4.5.	Chapter summary	130
 CHAPTER 5 – Variation in the grammatical domain of completion		132
5.1.	Aspect and completion.....	133
5.1.1.	Perfect and perfective aspects.....	133
5.1.2.	A working definition of the completive aspect.....	135
5.1.3.	Motivation for targeting the grammatical expression of completion	136
5.1.4.	The completive aspect in spoken languages	138
5.1.5.	The completive aspect in signed languages	144
5.2.	Completion in the Solo and Makassar sign language varieties	148
5.2.1.	Completive particles.....	148
5.2.2.	Completive clitics.....	152
5.2.3.	Completive mouthings.....	153
5.2.4.	Distribution of completive forms.....	155

5.3.	The functions of completive markers.....	156
5.3.1.	Sentence level.....	157
5.3.2.	Discourse level.....	158
5.3.3.	Pragmatic level.....	159
5.4.	Lexical and grammatical variation in the domain of completion.....	160
5.4.1.	Circumscribing the variable context.....	160
5.4.2.	Data coding.....	162
5.4.3.	<i>Rbrul</i> findings.....	163
5.4.4.	Variation in the form of manual completion (Analysis 1).....	165
5.4.5.	Grammatical variation in the domain of completion (Analysis 2).....	166
5.4.6.	Limitations.....	167
5.5.	Intra-individual persistence and variation.....	168
5.5.1.	Data coding.....	169
5.5.2.	Findings.....	170
5.5.3.	Discussion.....	171
5.6.	Chapter summary.....	174
CHAPTER 6 – Variation in the grammatical domain of negation		179
6.1.	Negation and negative constructions.....	180
6.1.1.	Grammatical and psychological negation.....	180
6.1.2.	Motivation for targeting the grammatical domain of negation.....	181
6.1.3.	Negation in spoken languages.....	181
6.1.4.	Negation in sign languages.....	184
6.1.5.	(Socio)linguistic variation in sign languages.....	188
6.2.	Negation in the Solo and Makassar sign language varieties.....	190
6.2.1.	Negative particles.....	191
6.2.2.	Negative clitics.....	203
6.2.3.	<i>TIDAK with mouthed predicate</i> constructions.....	204
6.2.4.	Negative suppletion.....	207
6.2.5.	Non-manual features and negation.....	214
6.2.6.	Negation through derivational morphology.....	217
6.3.	Grammatical variation in the domain of negation.....	218
6.3.1.	Circumscribing the variable context.....	219
6.3.2.	Coding for quantitative analyses.....	221
6.4.	Basic clause negator vs. other types of negation.....	223
6.5.	Paradigmatic variation.....	225
6.5.1.	Free negative particle.....	227
6.5.2.	<i>TIDAK</i> with a mouthed predicate.....	228
6.5.3.	Negative suppletion.....	229
6.5.4.	Discussion.....	230
6.6.	Syntactic variation.....	232
6.7.	Headshake variation.....	234
6.8.	Chapter summary.....	236
CHAPTER 7 – Conclusion.....		242
7.1.	Social networks and the diffusion of variants.....	243
7.2.	Factors that favour and disfavour the convergence of varieties.....	247
7.3.	Directions for research on sign language variation and change.....	253
7.4.	The significance for the Indonesian sign language community.....	257

BIBLIOGRAPHY.....	259
Appendix 1: Consent form.....	292
Appendix 2: Coding scheme	293
Appendix 3: Manual alphabet charts.....	296
Appendix 4: Map of Indonesia	297

List of tables

1.1. The population of deaf people in the Dutch East Indies, according to the 1930 census.	15
2.1. Terms for categorising languages suggested by Swadesh.	33
2.2. A selection of studies that compare the closeness of sign language varieties using Swadesh's classificatory scale.	36
2.3. A comparison of signs elicited from two signers in Makassar using a wordlist.	42
2.4. The frequencies of five variants found in the Makassar dataset meaning 'mother'.	42
2.5. A selection of Variationist Sociolinguistics studies on sign language variables.	48
3.1. Fieldtrips, locations and activities.	65
3.2. The status of variables explored in chapters 5 and 6.	76
3.3. Characteristics of negative clitics and affixes.	83
3.4. Details of clitics for the domains of completion and negation.	84
4.1. Early schools established to teach deaf children.	102
4.2. Indonesian deaf sports competitions organised by the deaf community.	118
4.3. International sports events in which deaf Indonesians have participated.	121
5.1. The frequency of known completive markers across sign language corpora.	136
5.2. The results of combining perfective and pronominal enclitics in Makassar.	143
5.3. Lexical variants for the expression of completion.	155
5.4. Grammatical variants for the expression of completion.	156
5.5. A summary of <i>Rbrul</i> findings for Analysis 1.	163
5.6. <i>Rbrul</i> findings for Analysis 1: Lexical variation for completive markers.	164
5.7. <i>Rbrul</i> findings for Analysis 2: Grammatical variation in the domain of completion.	165
5.8. A summary of factors that favour the realisation of completive variables.	175
5.9. A type-token distribution of completive marker variants used by Iksan.	176
6.1. Characteristics of manual dominant and non-manual dominant systems of negation.	186
6.2. The functions of TIDAK.	194
6.3. Forms and functions of signs with the TIDAK-ADA handshape, in the Solo variety.	200
6.4. A type-token distribution for negative particles in the data.	202
6.5. The frequency of host predicates to which negative particles cliticise.	203
6.6. The distribution of cliticised particles for each negative particle.	204
6.7. Predicates negated using <i>TIDAK with mouthed predicate</i> constructions.	206
6.8. Distribution of the variable of mouthed forms for <i>TIDAK with mouthed predicate</i> constructions.	207
6.9. The frequency of negative suppletive signs in Solo and Makassar.	213
6.10. The manual units with which headshake coincides (headshake scope).	215
6.11. <i>Rbrul</i> findings for the selection of the basic clause negator.	224
6.12. <i>Rbrul</i> findings for the selection of free negative particles.	228
6.13. <i>Rbrul</i> findings for the selection of <i>TIDAK with mouthed predicate</i> constructions.	229
6.14. <i>Rbrul</i> findings for the selection of negative suppletion.	231
6.15. <i>Rbrul</i> findings for the selection of the post-predicate slot for negative particles.	233
6.16. <i>Rbrul</i> findings for the selection of headshake.	235
6.17. The formal expression of negative completion and negative existence in both varieties.	237
6.18. A summary of factors that favour the realisation of negative variables.	239
7.1. Factors that favour and disfavour the convergence of Indonesian sign language varieties.	251

List of figures

Children at SLB Karya Murni in Ruteng, Flores, 24 December 2007.	i
1.1. Continuum of influence on signed utterances from grammar of signed/spoken languages.	6
1.2. Factors internal and external to deaf communities, relating to the ecology of a language.	10
1.3. A map of Indonesia showing its major islands/island groups and bordering countries.	12
1.4. Population of the islands and island groups in Indonesia.	12
1.5. A comparison of the core lexicon of 21 urban sign communities across Indonesia.	19
2.1. A section of the West Germanic family tree.	31
2.2. Four variants found the Corpus of Indonesian Sign Language Varieties meaning <i>mother</i> .	43
2.3. The overt methods and implicit aims of lexicostatistical research.	44
2.4. Handshape variants studied by Lucas et al. (2001).	47
2.5. The ASL sign KNOW in citation form and non-citation form.	47
2.6. A model for investigating linguistic and social definitions of sign language, with a view to empowering sign community members to make informed choices about delineation.	54
3.1. A map showing the location of the two fieldsites, Solo and Makassar.	64
3.2. The process of data collection, glossing, transcription and analysis.	66
3.3. The two-step sampling method.	66
3.4. A screenshot from data collected in Solo.	68
3.5. A screenshot from data collected in Makassar.	68
3.6. A stratification of the balanced sample for region, age and sex.	72
3.7. Topics that arise in the spontaneous, conversational data.	73
3.8. An example of file organisation for spontaneous linguistic data.	76
3.9. A screenshot showing the viewing window for ELAN.	77
3.10. The grammaticalisation cline from phonological word to affix.	82
3.11. An example of transcription showing asynchrony between mouthed and manual forms.	87
3.12. Indicators of metalinguistic awareness observed during the course of fieldwork.	96
4.1. The outcome of the sociolinguistic mapping exercise.	99
4.2. Pak Siregar (1938-2013), a key figure in early deaf organisation in Indonesia.	100
4.3. An article asking expatriates for donations to establish a deaf school.	102
4.4. Sisters of Mary and Joseph in the Netherlands with Msgr. Hermus.	103
4.5. Dena Upakara school in Wonosobo.	103
4.6. A graph showing the birthplace of deaf pupils who entered Dena Upakara and Don Bosco schools in Wonosobo 1950-1999.	104
4.7. Blueminck and his wife with Monsignor Hermus, in Sint-Michielsgestel.	106
4.8. Charts showing ‘German fingerspelling’ and ‘Indonesian fingerspelling’.	109
4.9. The schoolization process by which sign language features are diffused.	111
4.10. Congressional meetings of Gerkatin and the representation of regional Gerkatins, grouped by colour according to island.	114
4.11. National Disabled Sports Week (PORCANAS XIII), Samarinda, Kalimantan.	118
4.12. Provincial towns in South Sulawesi from whence informants came.	119
4.13. SUDAH:jkt, a variant for the expression of completion that occurs in Jakarta.	122
4.14. Variants meaning ‘alhamdulillah’ in Solo and a variant recently introduced.	122
4.15. Oktaviani, Audy and Arfan chatting remotely with friends using 3G phones.	123
4.16. Ibu Baron Sutadisastra and Professor Frances M. Parsons.	125
4.17. SIBI, the Indonesian Sign System.	126
4.18. Two variants used to refer to the city of Surabaya and the motivation for each sign.	129
4.19. Makassarese and Javanese variants meaning ‘an illicit affair’.	131

5.1. The sign FINISH in ASL.	144
5.2. The four completive forms that occur in the Solo and Makassar data.	149
5.3. Variation in the mouthings used to express completion in Makassar and Solo.	155
5.4. Formal expressions of completion in Solo and Makassar.	155
5.5. Functions of completive markers in sign language varieties of Solo and Makassar.	157
5.6. Forms of completion markers and other signs that share these forms.	160
5.7. The distribution of instantiations of completion in a dialogue between S003 and S010.	168
5.8. The proportion of completive variants used by ten informants.	169
5.9. Examples of persistence and intra-individual variation in the grammatical expression of completion (monologue text types).	170
5.10. Examples of persistence and intra-individual variation in the grammatical expression of completion (dialogue text types).	170
5.11. A chart showing tokens where intra-individual persistence and variation occur.	171
5.12. Influence from the phonological environment of PT:PRO1.	173
5.13. The signs KAWIN:1 and SUDAH:3.	174
5.14. The Auslan sign THEN.	177
6.1. Paradigmatic and syntagmatic dimensions for a simple English sentence.	180
6.2. A taxonomy of irregular negatives.	187
6.3. A selection of special negators with various functions in different sign languages.	187
6.4. The expression of negation in Indonesian sign language varieties.	191
6.5. The sign TIDAK.	191
6.6. Non-manual facial expressions referred to in chapters 5 and 6.	194
6.7. TIDAK-ADA and forms that share its handshape.	198
6.8. Phonological variants for TIDAK-PERNAH ('never')	199
6.9. Lexicalised signs that use the TIDAK-ADA handshape.	200
6.10. The sign PALM-UP.	201
6.11. The sign NOT:asl.	203
6.12. Group 1 predicates, which cannot be negated by regular means; non-grammatical and grammatical means of negating the predicate KUAT ('strong').	210
6.13. Group 2 predicates, which can be negated by regular means, and may be negated by another means; two grammatical variants for negating JADI ('happen').	210
6.14. A selection of negative suppletive signs.	212
6.15. The coding of headshake.	214
6.16. A negative utterance with screen shots showing signs and head movements that are highlighted in the transcription.	215
6.17. An emphatic manual negative (TIDAK#emp) with no observable head movement.	216
6.18. Facial expressions that accompany negative existential/possessive signs.	216
6.19. (a) The 'jelek' handshape; (b) the host-affix combination RASA≡JELEK.	217
6.20. The sign TULI:1.	218
6.21. The sign KULIT-HITAM.	218
6.22. The sign TIDAK-APA-APA.	219
6.23. Criteria for determining the status of PALM-UP, for coding purposes.	221
6.24. The distribution of paradigmatic variants for the ten most frequent predicates.	226
6.25. Paradigmatic variants selected in 10 contexts where the predicate BISA is negated.	230
7.1. The dense geographical distribution of many spoken language communities.	244
7.2. The sparse geographical distribution of sign language communities in Indonesia.	244
7.3. A comment made on the facebook page 'Movement of 1,000 sign language users'.	250

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Sugiyanto
Wahyu Hernowo
Waluyo
Winarni
Yosep Setiawan
Yudi Tri Laksono

Makassar

Adithya Perdana
Alfanto
Amelia Ferina
Andi Arfan
Andi Bimawati
Andi Darmawansa
Annas
Arman Djameluddin
Asma
Asnawing
Audy Sahabuddin Usman
Avriyani Donny
Ayu
Azis B.
Baya
Buanawati
Dianti
Saidah Sahdu Handina
Faizah
Farah Dwi Anila
Fatimah
Hajir
Iksan Djameluddin
Ipa Indrawati
Irdyanti Bangsawan
Iswandi
Judy Tanbungan
Juriah
Khevin Lumentu
Lukman
Merlina
Mia
Muhammad Adam Malik
Muhammad Fadly Syukur
Muhammad Ilham Amin
Muhammad Nasir
Musdalifah
Nisria Nurul Magfirah
Nur Afni
Nur Asmah Mace^{”q}
Nurasiah
Putri Imelda
Rahma Ahmad

(continued)

Rasnita
Ridwan
Ririn Eka Wulandari
Roby
Rusli
Sakir Rachman
Samsiah
Santi Nurul
Sugianto
Sujana
Sunjaya
Syhruddin Kadr
Teguh Suryadi Slamet
Trisulista
Try Aprilia Andi Amier
Wana
Wawah Yudi
Yasriani
Zaenal
Zilfthanah Arranury

Manado

Dwi Mirdawati
Fanny Inkiriwang
Farida Paembonan
Lisa
Maria Magdalena Palit
Melky Walukow
Merry Sampouw
Priccilia Frede Lono
Sampouw
Rahmawati Ilyas
Rezza
Siti Maimunah
Stenly Rindo

Jakarta

Bambang Prasetyo
Haji S.N. Siregar
Siti
Wati

Transcription conventions

Several transcription conventions have developed in the literature on sign linguistics, with some variation and idiosyncrasy. Conventions for examples taken from the corpus are shown below. Where examples derive from other sources the original transcription is retained; these usually draw upon the Leipzig Glossing Rules (www.eva.mpg.de/lingua/resources/glossing-rules.php).

Examples from the corpus take the following form:

(X)	<u> </u>	<i>non-manual expression</i>	
		<u> </u>	<u>mouthing</u>
	UNSUR	PADA	TANGAN
	element	on	hand
			(meta-language gloss)
			(gloss translated to English)
	‘free translation into English’		

A dedicated line is used for mouthings, non-manual expressions, manual elements (meta-language gloss, and English translation of gloss), and a free translation into English. The level of detail presented accords with the degree of relevance to the discussion, and the absence of mouthings and non-manual expressions (mouth gestures; other facial expressions; movement of head, shoulders and upper body) should not be taken to mean that these features do not occur in the data.

Where applicable, mouthings and non-manual expressions are shown on separate tiers at the top of the example, and underlined. These lines span the manual elements with which they occur. Mouthings appear in ordinary type for examples, and in the following form (mouthings) in the text. Other non-manual expressions are shown in italic type using the following codes: *br* (brow-raise); *hs* (headshake); *imp* (imperative); *cond* (conditional) and *int* (interrogative). The latter three can be seen in Figure 6.6. Other descriptions such as *slouch* and *head back* are self-explanatory.

The meta-language gloss (in Indonesian) is in bold type, and forms in the left hand (LH) and right hand (RH) are shown as separate tiers for illustrative purposes as necessary.

GLOSS	a manual form
GLOSS-GLOSS-GLOSS	a single sign needing more than one word to explain its meaning
HOST=CLITIC	a clitic
HOST≡AFFIX	an affix
SIGN^SIGN	a compound (sequential combinations of signs in a single unit)
NS:MUHAMMAD	a name sign used to refer to names of people and places
FS:BANJARMASIN	fingerspelling (using the manual alphabet – see Appendix 3)
PT:PRO1, PT:LOC, PT:DET	pointing signs, e.g. referring to first person; locative; determiner
G:SPIN-PLATES	a specified gesture (imitating the spinning of plates)
SIGN-----	a sign is held in place for the length of the string of dashes
SIGN++ mouthing++	a manual form or mouthing is reduplicated several times
SIGN#emp	morphological inflection, e.g. for emphasis
SIGN _{left} , SIGN _{right}	location in sign space with grammatical relevance
SIGN:1, SIGN:2, etc	lexical variants – see 3.5.1(ii).
SIGN:a, SIGN:1a, SIGN:1b	phonological variants – see 3.5.1(ii).
SIGN SIGN SIGN	the boundary between two clause-like units – see 3.5.2(ii)

Abbreviations for sign languages

Forty-two sign languages are mentioned in the thesis, and abbreviations are shown below, with names used by sign community members. Not all abbreviations are universally acknowledged. Practices for delimiting, naming and abbreviating sign languages are discussed in section 2.1.

UgSL	Ugandan Sign Language	
TİD	Turkish Sign Language	Türk İşaret Dili
ThaiSL	Thai Sign Language	
TSL	Taiwan Sign Language	Táiwān Shǒuyǔ
STS	Swedish Sign Language	Svenska Teckenspråket
SKSL	South Korean Sign Language	
NGT	Sign Language of the Netherlands	Nederlandse Gebarentaal
РЖЯ	Russian Sign Language	Russkij Âzyk Žestov
LSQ	Quebec Sign Language	Langue des Signes Québécoise
LSP	Peruvian Sign Language	Lengua de Señas Peruana
PSL	Palestinian Sign Language	
NTS	Norwegian Sign Language	Norsk Tegnspråk
NZSL	New Zealand Sign Language	
LSM	Mexican Sign Language	Lengua de Señas Mexicana
BIM	Malaysian Sign Language	Bahasa Isyarat Malaysia
KK	Kata Kolok	Kata Kolok
LIU	Jordanian Sign Language	Lughat al-Ish ra al-Urdunia
JSL	Japanese Sign Language	Nihon Shuwa
LIS	Italian Sign Language	Lingua dei Segni Italiana
IsraelSL	Israeli Sign Language	
IrishSL	Irish Sign Language	
IPSL	Indo-Pakistani Sign Language	
Bisindo	Indonesian Sign Language	Bahasa Isyarat Indonesia
ÍTM	Icelandic Sign Language	Íslenskt Táknmál
HKSL	Hong Kong Sign Language	
GSL	Greek Sign Language	
DGS	German Sign Language	Deutsche Gebärdensprache
LSF	French Sign Language	Langue des Signes Française
LSFB	French Belgian Sign Language	Langue des Signes de Belgique Francophone
VGT	Flemish Sign Language	Vlaamse Gebarentaal
FinSL	Finnish Sign Language	Suomalainen Viittomakieli
DTS	Danish Sign Language	Dansk Tegnsprog
ZGS	Chinese Sign Language	Zhōngguó Shǒuyǔ
Lense	Chilean Sign Language	Lengua de Senas Chilena
LSC	Catalan Sign Language	Llengua de Signes Catalane
CamSL	Cambodian Sign Language	
BSL	British Sign Language	
LIBRAS	Brazilian Sign Language	Língua de Sinais Brasileira
BKSL	Ban Khor Sign Language	
Auslan	Australian Sign Language	
LSA	Argentinian Sign Language	Lengua de Senas Argentina
ASL	American Sign Language	

CHAPTER 1

INTRODUCTION: SIGN LANGUAGE VARIETIES OF INDONESIA.

This thesis investigates sign language variation in a particular setting. The setting is Indonesia, and more specifically its urban sign communities. Indonesia is currently the world's fourth most populous country, and largest archipelago; when documenting the signed language used in its cities, the variation that inevitably surfaces is hard to ignore. Yet Indonesia's sign language varieties are severely under-documented and have not yet been delineated. Consequently, at the outset of this research it was unclear how to refer to these varieties. The investigation that follows seeks to document the variable grammatical expression of completion and negation for two varieties on different islands, using methods informed by linguistic typology and Variationist Sociolinguistics. It is anticipated that the investigation will shed light upon the relationships between sign language varieties in Indonesia with respect to linguistic and sociolinguistic criteria, as well as giving due attention to social, cultural and historical factors.

Chapter 1 introduces key contextual information, including a brief overview of the development of sign language linguistics (1.1), and the impact of contact with spoken and written languages (1.2). In section 1.3 I justify the focus on 'urban' communities and 'sign' communities, in light of frameworks from the literature on sign languages. Issues of language and linguistic identity are inextricably linked to geography, demography, history, culture and politics (Haugen, 1971). With this in mind, section 1.4 describes the linguistic ecology of the urban sign language varieties of Indonesia, which provides essential context for the rest of the thesis. Concluding sections cover previous research in this area (1.5), research questions (1.6), and structure of the thesis (1.7).

1.1. Signed languages, modality and variation

Until the early 1960s, most academic definitions of what constitutes a language had been restricted to those produced by the vocal channel and perceived through hearing. Such spoken languages occupy the auditory-vocal modality, and attempts to document them have been ongoing for several centuries (Himmelmann, 1998:3). The concept of modality – the mode or means by which languages are produced and perceived (Meier, 2002:1) – became important once linguists such as Tervoort (1954, 1961) and Stokoe (1960) began to uncover linguistic structures that occupy a different, visual-gestural modality. Stokoe (1960) discovered that, like spoken languages, sign languages exhibit duality of patterning (Sandler et al., 2011), with larger units comprised of smaller, meaningless units at the phonological level. Stokoe's research is described by Armstrong (2005:3) as 'a work of innovative scholarship' that sparked 'a social as well as an intellectual revolution'.

Since then, linguistic research has revealed many other striking structural similarities between spoken and signed languages, and it has been shown that sign languages exhibit structures and patterns at all levels of linguistic organisation, as do spoken languages, from phonology through to syntax and discourse (for detailed overviews of linguistic domains, see Brentari, 2010; Pfau, Steinbach & Woll, 2012; Lillo-Martin & Gajewski, 2014). Even the central properties of prosody – the rhythms, stresses and intonation of speech – are paralleled through the use of non-manual markers (Sandler, 1999; Sandler & Lillo-Martin, 2006; Crasborn, 2006).

Although controversial and by no means proven, the hypothesis that signed languages have been around for as long as spoken languages, if not longer, is now taken seriously by many researchers (see, e.g., Armstrong, Stokoe & Wilcox, 1995; Napoli & Sutton-Spence, 2011). Yet prior to the advent of sign linguistics, even respected linguists dismissed the idea that sign languages are fully fledged languages, considering sign languages to be primitive and limited (Vermeerbergen, 2006:168). For example, Bloomfield (1933:144) places ‘deaf-and-dumb language’ in a non-linguistic category alongside systems of gesture and signalling codes, and comments that these ‘turn out, upon inspection, to be merely derivatives of language’ rather than languages in their own right. Importantly, Bloomfield assumes that sign languages derive from spoken language, and this powerful misconception, which continues to be held by many people throughout the world, has arguably had a negative impact on the lives of deaf signers in the way that it has inhibited the recognition of their languages as valid and fully-fledged.

It is often said that variability is everywhere in language (Bod et al., 2003; Crystal, 2004:8; Wolfram, 2006:333), and variation has been described as ‘a universal and functional design feature of language’ (Foulkes, 2006:654). Importantly, this is as true of sign languages as spoken languages (Lucas et al., 2001; Schembri & Johnston, 2012, 2013). While some people, particularly learners, may regard variation as a ‘nuisance’ (Foulkes, 2006:654) or ‘highly problematic’ (Eichmann, 2008:141), variation is an inescapable consequence of the ubiquity of language and of the fact that language is used by social beings. Variation therefore constitutes a resource employed not only to communicate content, but also to convey social meaning and to create social identity (Meyerhoff, 2006; Joseph, 2010; Jou, 2013). Even linguists who are not concerned with the social dimensions of language are in agreement that the coexistence or ‘layering’ of more than one way of saying the same thing, or expressing the same function, is a key indicator of language change in progress, as certain items – sounds, words or constructions – emerge and compete with existing items that may ultimately become displaced (Pagliuca, 1994; Chambers, 1995).

Tellingly, the very first comprehensive effort to document the lexicon of a sign language according to linguistic principles – the Dictionary of American Sign Language – includes a section on variation in its introduction and an Appendix on Sign Language Dialects (Stokoe,

Casterline & Cronenberg, 1965).¹ The first volume of *Sign Language Studies* also includes a focus on sociolinguistic variation: Woodward (1972) argues for the expansion of research into sociolinguistics, including sign language variation. Despite such awareness of variation, much of the early research on sign languages is firmly embedded in the field of linguistics, and has little to say about (socio)linguistic variation.

More recently, however, the number of sociolinguistic studies of sign languages has grown considerably, for several reasons. These include the ease with which data can now be collected and stored as a result of technological developments (Crasborn et al., 2007); and progress in annotation software design, which has revolutionised the speed and efficiency with which data can be transcribed, annotated and searched (see Frishberg, Hoiting & Slobin, 2012; and further discussion in 2.3.3). Sign language corpora that include spontaneous, conversational data are of necessity full of variation, and offer many opportunities to analyse variation at different levels of linguistic organisation (Johnston & Schembri, 2010b:1316).

Taken as a whole, the majority of studies on sign language variation have been concerned with lexical variation (see section 2.2). This is in one sense an academic extension of conversations that often take place when signers meet from different regions of a country and compare the signs that are used in each place. Comparatively, morphosyntactic variation is one of the more under-researched areas in sign language sociolinguistics (Johnston & Schembri, 2010a:25), and such studies are still very rare (for an overview, see Schembri & Johnston, 2012, 2013). Key studies are discussed in 2.3.1, and include research on American Sign Language (ASL), Australian Sign Language (Auslan), British Sign Language (BSL) and New Zealand Sign Language (NZSL).

The study of grammatical variation is important not least because (spoken) languages are often delimited linguistically on the basis of morphosyntactic differences. For example, Pintzuk (2007:511) describes syntactic phenomena such as the order of verbs and their complements, and the behaviour of clitics, as ‘phenomena that distinguish modern languages from each other’. This is echoed in the recent literature on sign languages: when comparing language varieties with the aim of delimiting languages from a linguistic perspective, Zeshan (2006:305) argues for the need to supplement lexical comparison with an investigation of grammatical structures, and Johnston (2003:66) also notes the importance of considering grammatical similarity. With this in mind, one of the key aims of this investigation is to focus on variation at the level of morphosyntax.

Now that a considerable body of work exists, covering many domains of sign language at all levels of linguistic organisation, sign language sociolinguists have a foundation on which to build

¹ Notably, Cronenberg also sketches a profile of the distribution and organisation of deaf people in the state of Virginia (I return to the notion of the social network in section 2.3.1).

an understanding of the sociolinguistic patterns generated by language variation and change.² Furthermore, while the field of sign linguistics has become both broader and deeper, the field of sociolinguistic variation in general has also progressed considerably, and a number of analytical practices are now available for investigating this variation.³ Before discussing these in more detail, it is necessary to look further at some of the consequences of contact phenomena and educational intervention, both of which have had pronounced effects on many sign varieties.

1.2. Natural sign languages and artificial sign systems

Sign languages emerge naturally among deaf people in certain conditions.⁴ In usual circumstances it is nearly impossible to study the genesis of a signed language, because sign languages have commonly been used for several generations before receiving the attention of scholars (de Vos: 2012a). The lack of written documentation also limits our understanding of the way in which sign languages may have changed as they emerge. However, the emergence of signed languages has been observed in a small number of cases, including a Nicaraguan school and a Bedouin community located in Israel. On the basis of these cases, Senghas (2005:465) identifies several minimal environmental social factors required for a sign language to emerge, including early exposure to the language variety, the coming together of a ‘critical mass’ of individuals, and a ‘social mechanism’ for language transmission.

As noted in section 1.1, those with no knowledge of sign language, including Bloomfield (1933), are prone to the fallacy that sign languages derive from, or are based wholly upon spoken languages. However, it is true that the majority of sign languages have been influenced by spoken and written languages in some ways. While sign languages emerge naturally within deaf communities, and do not derive from spoken languages, most sign languages do not exist independently of spoken languages (Johnston, 1991; Johnston & Schembri, 2007). Language contact – particularly when filtered through the power relations that exist between a minority sign language community and its majority spoken language society – has had notable influences on many sign languages (Brentari, 2010), as shown in section 1.2.1. Only a small number of sign languages are known to have largely eluded this influence.⁵

² See section 3.1 for more discussion of the relationship between linguistics and sociolinguistics.

³ A brief overview of several such practices is given in section 2.3 and 2.4.

⁴ Hearing people are involved in the emergence of sign languages in certain circumstances (footnote 12).

⁵ An example of such a sign language is Kata Kolok (see section 1.5), which has thus far escaped influences from surrounding spoken languages – Balinese and Indonesian – because its signers have only recently had access to formal education (de Vos & Palfreyman, 2012).

1.2.1. Natural sign languages and language contact

Contact with spoken and/or written languages has had important linguistic consequences for most sign languages. This includes the use of mouthings and fingerspelling, and influences from the lexicon and morphosyntax of the spoken/written language. ‘Mouthings’ are mouth patterns that derive from spoken languages (Boyes Braem & Sutton-Spence, 2001); they are usually articulated silently, and correspond to the lip patterns of words used by hearing speakers. Fingerspelling entails the representation letter-by-letter (or symbol-by-symbol) of a word from a written language. The lexicon of Flemish Sign Language (VGT) contains some compound signs that parallel the component parts of corresponding words in spoken/written Dutch, such as SLAAP^KAMER (‘sleeping-room’, or bedroom) and GROOT^MOEDER (‘grand-mother’) (Vermeerbergen, 2006:178). Finally, the word order of spoken language is thought in some cases to influence sign order. For example, Johnston and Schembri (2007) suggest that there may be a causal relationship between the Subject-Verb-Object order of declarative sentences in Auslan, and the same order in English.

In cases where a signed language usually has a different order for a certain construction to that of a surrounding spoken language, some signers tend to switch the constituent order to follow the spoken language, especially in formal situations and in the presence of hearing people.⁶ Deuchar (1984) refers to a study conducted by Cicourel (1973),

who attempted to elicit BSL translations of English sentences such as ‘The bear gives the monkey to the man’. Despite instructions to the informant to sign as she would to a friend at the deaf club, the data [Cicourel] obtained had an English structure, with the order of signs following English word order, and fingerspelling for English words which do not have a single sign translation, such as ‘the’ and ‘to’ (Deuchar 1984:183-4).

Such usage often requires knowledge of a spoken language, and not all signers have this knowledge. In particular, a correlation has been observed between phenomena such as mouthing and a signer’s education, whereby signers who have never received formal education tend not to mouth much, if at all (Zeshan, 2001). Nonetheless, many members of urban sign communities have attended school, and have acquired spoken language to varying degrees, from minimal to intermediate to fluent. The influence of this acquisition on the signed language was one of the earliest observations made by sign language sociolinguists in the 1970s. For example, Woodward (1972) described the sign language of ASL users as occupying a diglossic continuum, with ASL grammar as the ‘L’ (low) prestige variety, and English grammar as the ‘H’ (high) variety (see 1.4.4 on attitudes towards sign language).

⁶ It is not only the order that may be affected. For example, in Indonesia some signers use different pronominal forms in situations that are formal enough to evoke a high level of self-consciousness. These forms stem from SIBI (see 1.2.2).

spoken/written language is represented: some are said to represent the spoken language morphologically, although Paul (2009) takes issue with this. Whereas natural sign languages emerge through interaction among deaf people, Emmorey (2001:11) notes that sign systems are usually created by committees of individuals, often exclusively composed of hearing people.

Sign systems have been variously described as ‘an awkward and unnatural pastiche’ (Aarons & Akach, 1998:4), and even as a kind of

symbolic violence which ensures that the Deaf children are firmly controlled culturally and linguistically by hearing professionals... [who] become the experts in the language of education even when it is signed (Branson et al., 1995:55).

A large number of studies have questioned the efficacy of signed systems (Marmor & Petitto, 1979; Gaustad, 1986; Maxwell, 1987; Supalla, 1991; Schick & Moeller, 1992; Wilbur, 2001; Supalla & McKee, 2002). Marschark evaluates these ‘hybrid systems’ as follows:

To date ... these systems have not lived up to their raison d'etre – facilitating deaf children's literacy development... Indeed, rather than providing deaf children with fluency in two languages, hybrid communication systems seem likely to leave them fluent in neither (Marschark, 2007:91).

With this evaluation in mind, some key points are summarised below with respect to the sign system currently promoted in Indonesia.

The government policy for the education of deaf children in Indonesia promotes the use of the *Sistem Isyarat Bahasa Indonesia* (SIBI), or ‘Indonesian Signed System’ (Department of Education & Culture, 1994), and the introduction of this is discussed in 4.4.1. SIBI uses ‘frozen signs’ alongside signs for affixes (Branson & Miller, 2004:17), and the derivational morphology of Indonesian suits the systematic nature of signed systems. For example, in the formal register, verbs in the active voice of Indonesian are formed by prefixing a root word, or base, with *meN-* (Sneddon, 2010).⁸ Affixes have many functions in Indonesian, including the indication of transitivity (*-kan*), superlatives (*ter-*) and the formation of abstract nominals (*ke-an*), and the accumulation of derivational processes can produce words comprising four or five morphemes. This means that, when translated with SIBI, a single Indonesian word may require the use of as many as five individual signs.

Klima and Bellugi (1979:194) showed that signs take longer to articulate than sounds, due to the comparative size of the articulators. Sign languages use simultaneous structures to compensate for this (Vermeerbergen, Leeson & Crasborn, 2007), but SIBI does not. Other sign systems have similar problems, and it has been shown that their sequential morpheme-by-morpheme nature has a confounding effect on the sign-to-voice ratio (Luetke-Stahlman & Luckner, 1991), with the

⁸ The realisation of this prefix varies between [mɛ], [mɛm], [mɛn], [mɛŋ], [mɛŋg] and [mɛŋ] depending on the first phoneme of the base. The spelling varies between *me-*, *mem-*, *men-*, *meng-* and *meny-*.

result that users of Manually Coded English tend to omit signs for bound morphemes (Marmor & Petitto, 1979). In his investigation of a similar signed system – Australasian Signed English – Leigh finds that

the combination of speech and sign is at some cost to the integrity of the signed message... the signed communication of secondary level teachers was typically neither an accurate representation of English syntax nor an effective carrier of an intended message (Leigh, 1995:271, 274).

This investigation is concerned with natural varieties of sign language, and it is important to be clear about this given the existence of SIBI. However, the exposure of some younger signers to SIBI has had an impact on these varieties (Palfreyman, forthcoming). For instance, some of the forms identified in chapter 6 have been introduced through contact with SIBI.⁹

1.3. The concept of an ‘urban sign community’

Not all deaf and hard-of-hearing Indonesians use sign language, for several reasons. First, the majority of deaf children are born of hearing parents (Mitchell & Karchmer, 2004), and so sign language is not usually transmitted vertically from caregiver to child (Quinn, 2010) – although this may happen in a small number of so-called ‘deaf villages’ around the world (Zeshan & de Vos, 2012). I am not aware of any research on inherited deafness in Indonesia with the exception of Kata Kolok (see section 1.5), but from my observations, there seem to be fewer deaf children in Indonesia with deaf parents, compared to Britain. After seven years of contact with the Indonesian sign community, I am aware of only a handful of deaf people who have deaf parents, although deaf siblings are more common.

In the absence of vertical transmission paths, sign languages are usually transmitted horizontally from peer to peer, often at deaf schools (Quinn, 2010). However, the vast majority of deaf children in Indonesia do not go to school (Wright, 1994), especially in rural areas. Those who have never entered formal education are unlikely to have been exposed to sign language, and a consequence of such social and communicative isolation is that deaf children may be semilingual or even non-lingual (see Skutnabb-Kangas & Toukoma, 1977; Cummins, 1979; Boudreault, 2005; and Branson & Miller, 2004, on semilingual deaf children in Indonesia). In the literature, it is reported that ‘home sign’ may sometimes emerge to meet the communicative needs of an individual or a small group (Senghas & Monaghan, 2002:75), but these idiolectal isolates are not transmitted from one generation of signers to another, and are restricted to a small number of users (Frishberg, 1987). The implications of home sign for Indonesia are discussed further in section 4.2.1.

⁹ One such example is BELUM:sibi in Table 6.9 (page 213). SIBI may also contribute to the influence of Indonesian grammar on signed utterances, as described in 1.2.1.

In Indonesia, a smaller number of deaf and hard-of-hearing people use speech and lip-reading, not because they have had no contact with sign language, but rather out of personal preference and/or as a result of oral teaching methods in the education system (Lane, 1999). Such people are sometimes referred to in the literature as ‘deaf’, as opposed to ‘Deaf’, to differentiate between *Deaf* people ‘who belong to the Deaf community and share a common ... culture’, and *deaf* people ‘who, while audiological deaf, do not identify with Deaf culture’ (Gregory & Hartley, 1991:3). In this way, a distinction is made between the ‘audiological/medical deafness’ and the ‘cultural/linguistic arena’ (Brueggemann, 2009:14). The application of this distinction to other countries has been known to create division – see Nakamura (2006, 2011) on the Japanese deaf community – and several linguists do not use it now, but leave deaf people to self-define as ‘Deaf’ if they choose. For example, Engberg-Pedersen (1993:30) notes that she does not feel competent or entitled to decide who is *deaf* or *Deaf*, and does not use this practice. I follow Engberg-Pedersen in my use of ‘deaf’, and refer to ‘sign communities’ and ‘signers’/‘sign language users’ rather than ‘deaf communities’ and ‘deaf people’, in order to underline the focus on sign languages and those who (choose to) use them.

Another decision that needs to be justified is the reference to ‘urban’ sign communities. This is based on discussions in the literature referring to sign languages that have emerged in different types of sociolinguistic settings. De Vos and Zeshan (2012:6) note that ‘the dichotomy between urban and rural sign languages is primarily based on their distinctive origins: segregated formal deaf education, and informal shared sign language use, respectively’. Rural sign languages have typically been used in communities where there is a high incidence of deafness (*ibid.*), and one such community has already been identified in Indonesia (see section 1.5). Conversely, urban sign languages are used in larger communities, and importantly may occur across several urban centres.

Woodward (1996, 2000) proposes an alternative tripartite classification of national, original and indigenous, closely based on his research on sign language varieties in Costa Rica, Thailand and Vietnam (see Table 2.2 on page 36). For example, Woodward refers to Thai Sign Language as ‘Modern Standard Thai Sign Language’ (MSTSL), which is described as a national sign language influenced by ASL. Original sign languages, those that pre-date the development of a national sign language, are named Original Chiangmai Sign Language (OCMSL) and Original Bangkok Sign Language (OBSL). Rural sign languages are described as ‘indigenous’.

Woodward’s classification cannot be applied to Indonesia because the distinctions between the three terms are not specific enough. While in Thailand, signs from ASL have entered the national sign language, which may present a stark contrast between recently borrowed and older forms, the contrast in other countries is not necessarily sufficient to merit the distinction of different languages: in Indonesia, signs from ASL have not displaced local varieties (with a small number

of possible exceptions) and ‘heritage’ varieties are still used, or retrievable. From a sociolinguistic point of view, languages always exhibit variation (see section 1.1), and it is natural for varieties to borrow from each other (Hickey, 2010). In addition, it is theoretically possible for ‘national’ and ‘original’ sign languages to be indigenous.

Nyst (2012:268) notes that there are problems with all of the current labels used for the sociolinguistic categorisation of sign languages, and there is a need for more classificatory distinctions. For present purposes, I refer to the varieties under study as ‘urban varieties’.

1.4. The linguistic ecology of urban sign language varieties in Indonesia

Descriptions of a language, its users and its setting are often referred to as linguistic ecologies, after the term was used in an article by Haugen:

most language descriptions are prefaced by a brief and perfunctory statement concerning the number and location of its speakers and something of their history. Rarely does such a description really tell the reader what he [sic] ought to know about the social status and function of the language in question. Linguists have generally been too eager to get on with the phonology, grammar, and lexicon to pay more than superficial attention to what I would like to call the “ecology of language” (Haugen, 1971:19).

Haugen also called for a typology of ecological classification (Haugen, 1971:25), and several such classifications have since appeared (Crystal, 2002:94). These include that of Edwards (1992:50), which comprises 11 categories – demographic, sociological, linguistic, psychological, historical, political, geographic, educational, religious, economic, and technological – to be considered at the levels of the language, the language user, and the setting. This framework has since been refined, with Grenoble and Whaley (1998) forming a hierarchy that prioritises economic variables. The applicability of these classifications to sign languages is not yet clear, but Brentari (2010) provides a separate list of factors specific to sign languages and the communities that use them (Figure 1.2).

internal factors	external factors
<ul style="list-style-type: none"> • size • proximity • cohesion • self-awareness • longevity 	<ul style="list-style-type: none"> • economic situation • mono- vs. multicultural environments • educational intervention • government intervention • availability of technology • medical intervention • availability of interpreters

Figure 1.2. Some specific factors internal and external to Deaf communities, relating to the ecology of a signed language (based on Brentari, 2010:5-6).

The study of the ecology of a language variety is important for many reasons, three of which are relevant here. First, it provides background information about the use and social setting of

language varieties, which is essential for an investigation that focuses on sociolinguistic as well as linguistic perspectives (see 1.6). Secondly, it enables the assessment of language endangerment (see the comments in Palfreyman, forthcoming; and in section 7.4). Finally, knowledge of the ecology of a language variety strengthens the sociolinguistic interpretation of data. For example, in order to analyse prosodic patterns in some Asian Englishes, Lim writes that

the emergence of contact-induced varieties such as [Singapore English] can be regarded as speakers making selections from a pool of linguistic variants available to them in a contact setting. This feature pool consists of the sum total of the individual forms and variants that each of the speakers involved, with different language backgrounds and varying linguistic experiences, brings into the contact situation. Which variants from this feature pool are chosen as stable elements of the newly emerging variety *depends on the complete ecology* of the contact situation (Lim, 2011:99, my emphasis).

For present purposes, an understanding of the linguistic ecology of urban sign language varieties in Indonesia will permit a better understanding of sociolinguistic variation, and I explore this in chapter 7.

In light of this, the sub-sections of 1.4 (following) sketch the linguistic ecology of these varieties. Ecological categories are chosen selectively from Brentari (2010) for this section, because the other categories are discussed at length in chapter 4, which presents new sociohistorical evidence pertaining to the history of contact between urban sign language varieties. For example, technological developments are addressed in 4.3.5, and the longevity of sign language varieties and sign communities is discussed in 4.5. I begin by presenting brief overviews of Indonesia's geography, history and demography (1.4.1) and the languages spoken across the archipelago (1.4.2).

1.4.1. Indonesia: a brief geographic, demographic and historical overview

Indonesia is situated in Southeast Asia, straddling the equator and bordering Malaysia, Singapore, Brunei, the Philippines, Papua New Guinea, East Timor and Australia (Figure 1.3). Its archipelagic nature makes it quite different to the more populous countries of China, India and the United States, which occupy large land masses. In an easterly direction, Indonesia's largest islands are Sumatra, Java, Kalimantan (covering two-thirds of Borneo), Sulawesi (Celebes) and the western half of the island of New Guinea, which is referred to by the Indonesian government as Papua. The distance from the cities of Sabang (the most north-westerly town of Sumatra) to Merauke (in the southeast of Papua) is around 3,260 miles (5,250km), and around six and a half hours would be required to fly from one city to the other, a journey crossing three time zones.

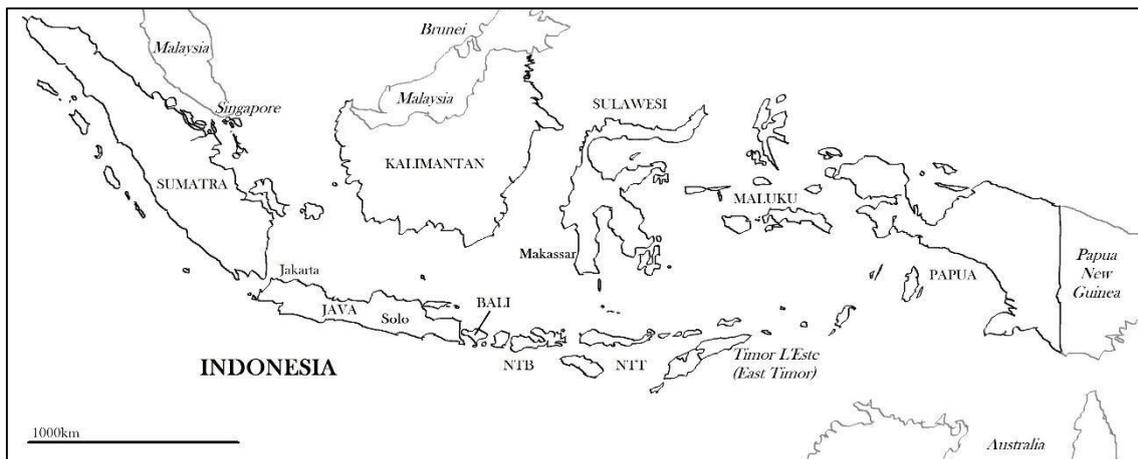


Figure 1.3. A map of Indonesia showing its major islands/island groups (upper case) and bordering countries (italic case) – see also Appendix 4.

Ever since its declaration of independence in 1945, Indonesia has been one of the five most populous countries in the world. It is currently fourth, and its 237.6 million people inhabit more than half of its 17,000 islands (BPS, 2010). Java is by far the most populous island, followed by Sumatra and Sulawesi (see Figure 1.4). As of 2014, Indonesia is divided into 34 provinces (*propinsi*), which are further divided into 511 administrative units: 98 cities (*kota*) and 413 regencies (*kabupaten*). Each regency also has a capital city, which means that there are around 500 cities that vary in size from a few thousand people to 9.6 million in the capital city, Jakarta. According to the 2010 census, 79 cities have a population that exceeds 100,000 (BPS, 2010).

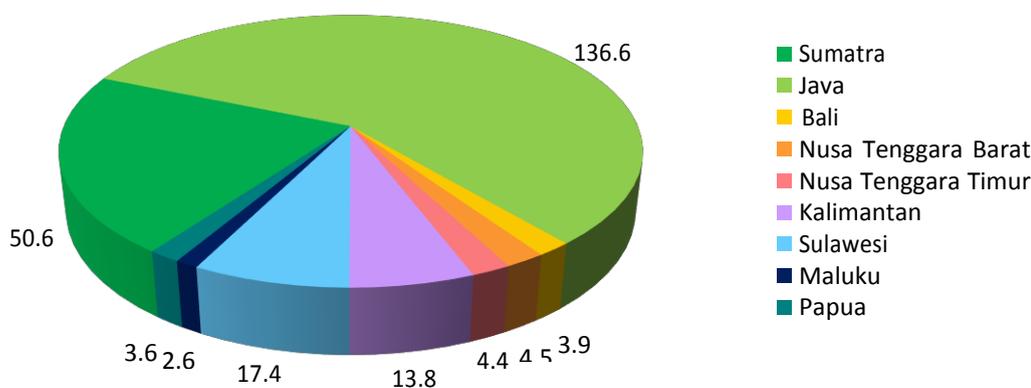


Figure 1.4. Population (in millions) of the islands and island groups in Indonesia. Based on statistics in the 2010 census (BPS, 2010).

There is linguistic evidence to suggest that the majority of the current population are descendants of Austronesians who settled in the archipelago around 4,000 years ago, although it is not known for certain whether they reached Indonesia by sea routes, or via the Malay Peninsula (Gelman Taylor, 2003:7). Indonesia’s rich natural resources have had a profound effect on its history, and evidence indicates that trade links with China and India existed before the Common Era. With trade came ideas, languages and beliefs: first Buddhism and Hinduism from India, then Islam

from the Middle East. Europeans arrived in the sixteenth century – the Portuguese in 1512, then the Dutch – bringing Christianity, and seeking nutmeg, cloves and pepper (ibid.). The Dutch East India Company, founded in 1602, began to colonise commercially and economically strategic areas of the archipelago, which came under the administration of the Netherlands in 1800 (ibid.).

From 1800 until 1942, the territories occupied by the Dutch were expanded to include all areas that are now part of Indonesia. The notion of 'Indonesia' was not even thought of before the second and third decades of the twentieth century (Gelman Taylor, 2003: xviii), but during those decades a number of nationalist organisations developed across the Indies, forming a movement that spread the idea of an independent Indonesia (Vickers, 2005). Following a three-year occupation by the Japanese (1942-45), the independence of Indonesia was declared on 17 August 1945 by Sukarno, the president of Indonesia from 1945 until 1965, and Mohammad Hatta, the first vice-president (ibid.). The new Republic of Indonesia encompassed all areas of the previous Dutch colony except for West New Guinea, which did not become part of Indonesia until 1962 (ibid.).

1.4.2. Spoken languages in Indonesia

The spoken language situation in Indonesia is complex, with many varieties of Malay-Indonesian, and hundreds of other regional and local languages besides (Sneddon, 2003; Robson, 2004). Malay-Indonesian is an Austronesian language occurring in many diverse forms across Southeast Asia, and has been used as a lingua franca in the region for centuries (Tadmor, 2009). The naming and delineation of languages entail many complex factors (see 2.1) and this is especially true for Malay-Indonesian:

no linguistic criteria have been established for distinguishing between Malayic languages and dialects of Malay-Indonesian, and there are no widely accepted subgrouping theories for either. Many scholars in the field have therefore preferred using the neutral term 'isolect' to refer to any Malayic speech form which has a name of its own and is regarded by its speakers as distinct from other varieties (Tadmor, 2009:793).

In the interests of simplicity, I refer to Malay-Indonesian simply as 'Malay'. In chapters 5 and 6 I comment on variation in the expression of completion and negation across several varieties of Malay, including Ambonese, Kupang, Makassar and Papuan Malay. Further, in 7.2 parallels are drawn between the sociolinguistic situations of Malay and Indonesia's sign language varieties.

The national language of Indonesia is a standardised form of Malay, *Bahasa Indonesia* (literally 'Indonesian language'). This is referred to henceforth as 'Indonesian' and, where it is necessary to highlight the distinction between standard and colloquial forms, as 'Standard Indonesian'. According to Sneddon (2003) there were an estimated 180 million Indonesian speakers at the beginning of the twenty-first century. Yet at the turn of the previous century, the notion of an Indonesian language did not exist. At a Youth Conference held in 1928, the Congress declared that they had one homeland (Indonesia), were one people (the Indonesian nation), and strove for one Indonesian language (Vickers, 2005:80), and Indonesian has since played a key role in

fomenting national identity (Bertrand, 2003). Standard Indonesian is regarded as prestigious due to its use by government, schools, the legal system and the national media (Ewing, 2005), and is a rare example internationally of successful language planning (Errington, 1998). This may have inspired the idea that sign language planning could be introduced with a similar degree of success (see section 4.4.1). Standard Indonesian is typically described as *bahasa yang baik dan benar*, ‘language that is good and correct’ (Ewing, 2005:227), and the education policy places a heavy focus on the acquisition of Standard Indonesian (see 4.4.2; Branson & Miller, 2004).

For most speakers, Indonesian is actually a second language, and the language of the home is more likely to be one of over 250 separate languages, which include Acehnese, Balinese, Batak, Buginese, Javanese, Madurese, Makassarese, Sasak, Sundanese and Tontemboan (Robson, 2004). Javanese is used by 75-80 million, making it the largest Austronesian language by far in terms of first-language speakers (Sneddon, 2003:25). The standard varieties of Javanese are considered to be those used in Yogyakarta and Solo, exemplary historic centres of Javanese culture (Errington, 1985:2; Vander Klok, 2012:17). Javanese has different speech levels (*ngoko*, *low basa* and *high basa*) that are chosen according to the relative social status of those who converse (Oakes, 2009). In Makassar, the two dominant regional languages are Makassarese and Buginese (Jukes, 2006:29). In chapters 5 and 6, examples from Makassarese and Javanese are used to make informative contrasts and to explain phenomena that have emerged from contact with spoken language varieties (5.2.3).

1.4.3. Demography and proximity of sign community members

As with many other countries, several tricky factors make it difficult to provide estimations for the number of signers across the archipelago. It is rare for surveys to collect data on sign language use, and collecting accurate data on the number of people with hearing impairment in remote areas remains challenging. The difficulties are compounded by stigma and negative attitudes towards deafness (see 1.4.4), which lead to under-reporting. The most recent population census, conducted in 2010, collected social welfare data on ‘hearing difficulty’, and finds that 456,047 Indonesians have ‘severe’ difficulty hearing (BPS, 2014). This works out at around 2.4‰ (per thousand) of those surveyed, of whom 24.3% are aged between 10 and 50. A further 2,568,224 people have ‘some’ difficulty hearing (ibid.), and it is unclear what to infer from this.

Importantly, the BPS report implies that those who can hear using hearing aids are recorded as having ‘no’ difficulty (although hearing aid use is rare in Indonesia – see 1.4.4). Furthermore, children under the age of 10 are excluded from the survey, and assuming that the recent prevalence of deafness is relatively constant, there may be around 27,000 deaf children under the age of 10. This implies that nearly half a million Indonesians are severely or profoundly deaf. The survey appears to rely upon self-reporting, but in Indonesia data for such surveys are often submitted by local neighbourhood leaders, which might increase the under-reporting of deafness. All things

considered, the number of severely or profoundly deaf Indonesians is likely to be considerably higher than half a million, and it is reasonable to assume that these people rely upon lip-reading, writing and/or gestural forms of communication.

The figures in the 2010 census can be compared with two other sources. Statistics in the archive of the Indonesian Association for the Welfare of the Deaf, which are based on data from the Directorate for the Rehabilitation of Disabled People and national socioeconomic surveys, suggest that in 1999 there were 1,496,854 *tunarungu-wicara* ('deaf and mute') people in Indonesia, 7.2‰ of the total population at the time (Gerkatin, 1999). Although this survey is subject to the same problems as the census, it seems to confirm the suggestion made above, that the overall number of people regarded as 'deaf' is considerably higher than half a million.

The second source offers a historical perspective. A census conducted in 1930 by the Department for Economic Affairs, Agriculture, Industry and Trade of the colonial government included a survey of the number of deaf children and adults in the Dutch East Indies (Indrawati, 1999). This census reports that of a population of 50 million, over 55,000 were deaf (Table 1.1).¹⁰

Table 1.1. *The population of deaf people in the Dutch East Indies, according to the 1930 census (Indrawati, 1999). Figures in brackets following the overall totals refer to the number of deaf children, where known.*

group description	deaf population	total population
West/Central/East Java	43,099 (10,929)	40,891,093
Sumatra	11,745 (2,630)	7,735,959
'Europeans living in the Dutch East Indies'	74	240,162
'Chinese and non-indigenous people'	823	1,190,014
'other eastern people' ¹¹	59	114,637
TOTAL	55,800	49,931,703

No information is provided about methods used to gather these data, or how a person was identified as deaf, but it can be assumed that audiometric testing was not employed, and that only those whose deafness was marked enough to affect communication would have been included. Methodological uncertainties aside, the 1930 census constitutes a remarkable source of data.

Sign language users in Indonesia are nearly always part of a local sign community, and congregate regularly because they communicate in similar ways and share a common experience of life, based on visual perceptions rather than aural ones. (Similar behaviour has been attested for deaf people around the world, e.g. Sutton-Spence & Woll, 1999; Padden & Humphries, 2006.) With a few

¹⁰ It should be noted that this census did not include other regions that later became part of Indonesia, such as Kalimantan, Sulawesi, Bali, Nusa Tenggara, Maluku and Papua.

¹¹ This refers to people from Japan, India, the Arab world, etc.

important exceptions, it is rare to find hearing Indonesians who are proficient in a signed language, and so deaf signers mostly socialise with each other.¹² Most urban centres across the archipelago have established places where signers meet regularly, coming together to gossip, share information and stories, and mark major moments of life. They also often meet to play sports, worship, or participate in an *arisan*.¹³

Indonesia also has several deaf organisations, the largest of which is Gerkatina (*Gerakan untuk Kesejahteraan Tunarungu Indonesia*, or ‘Indonesian Association for the Welfare of the Deaf’). The structure of Gerkatina parallels the national-regional-local structure of the Indonesian government (1.4.1), but in practice there are relatively few local Gerkatinas, and most regional Gerkatinas have not yet developed beyond social groups. The emergence and development of deaf organisations in Indonesia is discussed at length in section 4.3. Some sign community members are aware of their identity as a community – this is referred to several times in the corpus, especially by signers from Makassar – and awareness of sign language is also increasing (see 4.4.2).

1.4.4. Attitudes towards deafness and sign language

Informally, deaf people in Indonesia usually use the word *tuli* to refer to deafness. However, hearing Indonesians favour *tunarungu*. *Tuna-* is one of several prefixes in Malay that have been borrowed from Old Javanese, and came to mean ‘lacking, being short of’ (Sneddon, 2003:170). This prefix is used to form euphemisms that refer to people with different impairments, as well as those who are homeless or unemployed, and emphasises the conception of disabled people as deficient (Sukmara, 2014). The definition of disabled people as those who are ‘lacking’ has infused the Indonesian education system too, and a school for disabled children – including deaf children – is called a *Sekolah Luar Biasa* (SLB), which literally means ‘school outside the normal’ (Branson & Miller, 2004:16). In these SLBs, disabled children are given a letter that describes them and/or their impairment categorically: ‘A’ for visually-impaired children, ‘B’ for deaf children, ‘C’ for children with learning difficulties or mental health problems, and so on.

I have observed significant differences between the experiences of those deaf people who live in or near an urban centre, and those who live in remote, rural areas. On the whole, proximity to an urban centre greatly increases the chances that a deaf person will meet other deaf people, use sign language, go to school, and have better access to information. Conversely, it is more likely that

¹² One such important exception is so-called ‘deaf villages’, where the presence of a large hereditary deaf community often leads to more positive attitudes towards deafness, and a much higher level of sign language proficiency among hearing people (Zeshan & de Vos, 2012). There is at least one such village in Indonesia: see section 1.5.

¹³ The *arisan* is a group whose members each contribute a certain amount of money per meeting. Members take it in turns to receive all of the contributions at that meeting, with the lucky name drawn from a pot.

deaf people in remote, rural areas will be unschooled, face more stigma, and never have met another deaf person. The chances of medical intervention also decrease as distance from urban centres increases, and most deaf Indonesians appear to be unaffected by such interventions. Hearing aids are available in some cities, especially in Java, if the deaf child's family can afford them, and sometimes with funding from charities or local government. Several deaf adults that I have met attended hearing aid fittings when they were younger, but found the experience distressing and/or the hearing aids ineffective. There are anecdotal reports that cochlear implants have been offered to deaf children in large cities such as Jakarta, but the vast majority of deaf Indonesians that I have met do not wear hearing aids and have no knowledge of cochlear implants.

There is little public awareness of sign language in Indonesia, although a SIBI interpreter was included on the national news programme for a few years in the late 1990s, and again in 2014. During a meeting that I had in 2008 with professional counsellors in Yogyakarta, sign language was referred to by one as *bahasa Tarzan*, or 'Tarzan language', and this encapsulates common perceptions that it is a primitive language of basic gestures. In Java and Bali, perceptions of sign language are also sometimes flavoured by cultural notions of what is *halus* ('refined') and *kasar* ('coarse'):

an expressionless face is *halus*, as are restricted and subtle body movements. The use of the mouth, tongue, and eyes in an exaggerated and vigorous way is *kasar*, as are large, expressive body movements. In such an environment, natural sign language is considered *kasar* and thus regarded as uncouth and inappropriate for people from cultured families (Branson & Miller, 2004:18).

While these notions are doubtlessly influential, sign language classes were recently set up in Jakarta and Solo, and younger hearing Indonesians – such as university students – have been generally enthusiastic and positive about learning sign language. This is good news because at the start of 2014 Indonesia had only around a dozen informal sign language interpreters, most of whom are untrained and work on a voluntary basis. Sign community members need many more interpreters, and research on their language varieties is a critical step towards establishing sign language training (see sections 3.7 and 7.4).

1.5. Existing research on sign language varieties in Indonesia

Sign language varieties in Indonesia are severely under-documented. Fischer and Gong (2010:518) comment that: 'compared to the study of Western sign languages, the study of Asian sign languages is still in its infancy.' They also note that even less has been published on Southeast Asian sign languages. Indeed, given the size of Indonesia's population, there has been surprisingly little research into its sign language varieties.

Yet there is a strong need for such research: in the case of Indonesia,

the nature, number and source of local sign languages is unknown... The national education authorities are under the impression that they have the tool necessary for that schooling, the *Sistem Isyarat Bahasa Indonesia*. It is up to applied linguists not only to question this decision on the basis of existing research elsewhere but to provide a viable alternative strategy (Branson & Miller, 1998:27).

This call is repeated by Kuswarno (2008), who uses an ethnography of communication analysis, and recommends more comprehensive research into Indonesia's natural sign language varieties.

At the outset of this investigation, robust linguistic research had yet to be conducted on Indonesian varieties, with one exception. Kata Kolok, which means 'deaf talk', is a rural sign language used in the village of Bengkala, in the Buleleng regency of north Bali. The first academic studies of Kata Kolok note that the village has an atypically large deaf population (Branson, Miller & Marsaja, 1996, 1999), and Marsaja (2008) reports that the prevalence of hereditary deafness is around 1:25, much higher than the national average. Kata Kolok is thought to have emerged five generations ago, with a minimum time depth of 80 years (de Vos, 2012a:42). Following research by Marsaja (2008), de Vos documented the colour terms, sign spatiality and non-manual features of Kata Kolok, alongside a study of the acquisition of perfective aspect marking by a child signer (de Vos, 2011, 2012a, 2012b, 2014).

As far as urban sign language varieties are concerned, Saharudin (2007) focuses on the Sumatran city of Jambi, and describes the language use of deaf children in the home. He also provides a basic and partial phonological and morphological description of what he refers to as 'Jambi Sign Language'. This is based on data collected from 12 deaf children at an SLB in Jambi, and in the children's homes. From the sample of data transcription provided, it seems that much if not all of Saharudin's data is taken from interaction between deaf children and hearing adults (teachers and parents) who are not proficient signers. As an ethnographic study, this research has several findings that are of great interest, but the phonological and morphological overviews are incomplete, and the validity of the data is questionable. Curiously, although the choice of the term 'Jambi Sign Language' is not motivated, Saharudin

takes the position that there are numerous Indonesian sign languages used in the archipelago, each one peculiar to a particular area, such as Kolok sign language in Northern Bali, Pepe sign language in South Sulawesi, Pakak sign language in West Sumatra, Maingol sign language in North Sumatra, [and] Tuli sign language in Jambi. The names of these sign languages are based on the local term for deaf in each area (Saharudin, 2007:26).

This is a particularly idiosyncratic way to name sign languages. For example, a signer in Makassar (South Sulawesi) reports that *pepe* is a very offensive term for deaf people (see the comments in 2.1.2 and 2.1.3 on naming practices for languages).

Hurlbut (2013) presents a rapid survey of Indonesian sign language varieties, written as a report entitled *The Signed Languages of Indonesia: An Enigma*.¹⁴ On the basis of wordlist elicitation in 21 locations across the country, and subsequent comparison of responses in each location (Figure 1.5), Hurlbut (2013:18) applies lexicostatistical methods and concludes that ‘the results show clearly that Indonesian Sign Language is one language’.

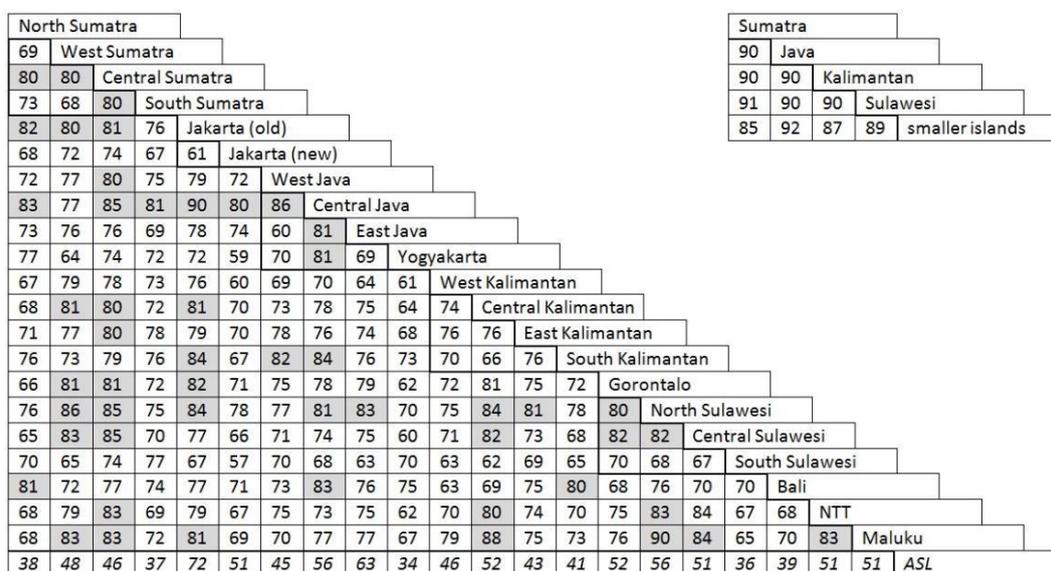


Figure 1.5. A comparison of the core lexicon of 21 urban sign communities across Indonesia (Hurlbut, 2013:18); and (top right) the second stage of Hurlbut's analysis (2013:19).

Several preliminary linguistic studies have been conducted on sign language varieties in Jakarta and Yogyakarta. For Jakarta, this includes Chu and Wijaya (2013) on sign names; for Yogyakarta, Bharoto (2013) examines classifier constructions, and Sukmara (2014) explores phonological components. Lexicographical work has also commenced on both varieties (Woodward & Bharoto, 2011; Woodward, Wijaya & Satryawan, 2011), and again, lexicostatistical methods have been applied. These studies report that the Jakarta and Yogyakarta varieties share only 64% of their basic or core vocabulary. Accordingly,

this percentage shows that Jakarta sign language and Yogyakarta sign language are not dialects of the same language, because for dialects from the same language, between 80 and 100% of basic vocabulary items are usually cognate (Woodward, Wijaya & Satryawan, 2011:vii, my translation).¹⁵

Isma (2012) presents this argument in its entirety, with a basic comparison of 100 items in Jakarta and Yogyakarta; she also compares the sign order of sentences that have reversible and irreversible arguments. These findings are based on a small sample – four signers from each city – and as Isma herself notes, ‘the sample size may not be representative enough’ (Isma, 2012:73).

¹⁴ This 20-page report became available at the end of 2013. I am grateful to Hope Hurlbut and Ted Bergman of SIL for allowing me to view a copy of it in advance.

¹⁵ Exactly the same argument is presented in Woodward and Bharoto (2011).

When applied to Indonesian sign language varieties by Isma (2012) and Hurlbut (2013), lexicostatistical methods generate contradictory findings, and the likely reasons for this are discussed in the critique in section 2.2.

Also relevant here is the use of mouthings, which Suwiryo (2013:59) compares in the Jakarta and Yogyakarta varieties, concluding that ‘the occurrence of mouth gestures in YogyaSL is more frequent than that in JakSL’ and ‘there are more mouthings in [the] JakSL data’. Again, this is based on a small sample – three signers from each place – and it is noted that more research is needed before a comprehensive conclusion can be reached (Suwiryo, 2013:59).

1.6. Research questions

The following research questions have been chosen in light of the emphasis, in the title of this investigation, on combining linguistic and sociolinguistic perspectives.

- (RQ1) How similar are the sign language varieties of Solo and Makassar in the grammatical domains of completion and negation?
- (RQ2) Which linguistic and social factors account for the choice of lexical and grammatical variants in these domains?
- (RQ3) How can the history of contact between urban sub-communities of sign language users help to explain the patterns observed?

The first research question (RQ1) is essentially a contrastive analysis of the Solo and Makassar varieties in two grammatical domains.¹⁶ The motivation for the selection of these target domains is outlined in 5.1.3 (for completion) and 6.1.2 (for negation). RQ2 refines the line of enquiry by adding a consideration of linguistic and social factors, and links are made with the sociohistorical record in RQ3.

Good research questions must be operationalisable to ensure that they can be addressed through the collection and analysis of appropriate data (Sunderland, 2010:20). These questions are operationalised as follows: RQ1 and RQ2 draw upon corpus data (see chapter 3), which enable the qualitative and quantitative analysis of the expression of completion and negation in each sign language variety; in accordance with RQ3, these analyses are also framed in light of sociohistorical evidence pertaining to the history of contact between sub-communities of sign language users. For each question, key terms are defined as necessary (e.g. chapter 3 *passim*, and section 4.1).

¹⁶ The term ‘contrastive’ analysis is used in two different ways: in North America it has a pedagogical focus, whereas in Europe the field of contrastive linguistics is theoretical rather than applied (Fisiak, 1981), and has the goal of gaining a better understanding of language (Gass & Selinker, 2001:71; see also 2.3.2).

1.7. Thesis structure

The remainder of the thesis is structured as follows. In chapter 2, general methodological approaches to analysing sign language varieties are discussed, and the two approaches used in this investigation – linguistic typology and Variationist Sociolinguistics – are introduced. The research design of this investigation is presented in chapter 3, which includes the choice of the two fieldsites, and that chapter concludes with a particularly important discussion of ethical considerations.

The central part of the analysis for this thesis is contained within chapters 4, 5 and 6. I present a sociohistorical overview of the Indonesian sign community in chapter 4. In chapter 5 the grammatical domain of completion is explored, and I begin by documenting the ways in which completion is expressed in both varieties. Two variables are then identified, and the factors that predict the realisation of these variables are investigated. Chapter 6 follows a similar pattern for the domain of negation, but this time four variables are examined. The thesis concludes with chapter 7, in which the wider significance of the findings are discussed, for both the Indonesian sign community and the academic community.

CHAPTER 2

ANALYSING SIGN LANGUAGE VARIATION: METHODOLOGICAL APPROACHES.

When documenting a sign language variety for the first time, the large majority of researchers have ignored the question of dialects and variation, instead pre-empting any analysis on the ground and simply assuming the existence of ‘X’ Sign Language’, where ‘X’ is the name of a country. However, a smaller number of researchers have begun by addressing the existence of regional variation. For example, Boyes Braem sought to document the sign language used in German-speaking Switzerland in the 1980s, and for her, the issue of regional variation proved inescapable:

The question might therefore logically arise – why begin a study of regional variations before more general research on the language has been done? One response to this question would be that there is no standard ‘Swiss German Sign Language’ to study. The Swiss deaf report that different varieties of sign language are used in different regions of German Switzerland. If one wishes to study sign language in Switzerland, therefore, one must begin with what exists – the dialects (Boyes Braem, 1984:93).¹⁷

A similar position has been expressed by other sign language linguists, such as Woodward:

If we know nothing about the sign language situation in Viet Nam, our first question should not be "What does the structure of Vietnamese Sign Language look like?" Rather, it should be "How many sign languages are there in Viet Nam?" (Woodward 2011:48).

Having decided to document sign language variation in a defined space, such as a country, the question is then one of how to proceed: what methods are available, and how should these be applied? Two main approaches to variation are evident in the literature on sign languages, which I will call ‘the delineation approach’, and ‘the sociolinguistic approach’.¹⁸ Adherents of the delineation approach, such as Woodward (2011), emphasise the process of quantifying variation as a means, primarily, of delineating languages, and prioritise the use of lexicostatistical methods to do this. In other words, variation – usually lexical variation – is treated as an indicator of language or dialect status:

Before one begins research on any new sign language, it is important to do preliminary lexicostatistical studies (Woodward, 2011:48).

Adherents of the sociolinguistic approach are concerned with variation in its own right, and look at variables within a given language variety that differ according to linguistic factors and social factors (which may include regional variation).

¹⁷ By this, I assume Boyes Braem means that that no one variety is considered by sign community members to be the main, or dominant one.

¹⁸ I do not regard the delimitation approach as sociolinguistic in nature because it does not take social factors into account, and seeks to delineate languages on a linguistic, specifically lexical, basis (see 2.2).

From the 1970s until the end of the twentieth century, the delineation approach has dominated studies of variation in sign languages (see for example Woodward, 1978, 1991, 1992, 1993, 1996, 2000; Bickford, 1989, 1991, 2005; Hurlbut, 2003, 2008a, 2008b, 2009, 2013).¹⁹ Since the pioneering work of Lucas et al. (2001), however, the sociolinguistic approach has made a strong and assured appearance in the sign language literature (Schembri & Johnston, 2007; de Beuzeville, Johnston & Schembri 2009; Schembri et al., 2009; McKee et al. 2011; Fenlon et al. 2014; Stamp et al. 2014).

In this chapter I seek to challenge the delineation approach, and examine the different analytical practices that have emerged as part of the sociolinguistic approach. First, I discuss the dilemmas inherent in defining what a ‘language’ is, and I reiterate what has often been noted in the literature on spoken languages: that the delineation of languages is not solely a linguistic enterprise, but a social one, and that the views of community members should be eagerly considered (2.1). Further, the purpose and usefulness of lexicostatistical methods are discussed, and it is suggested that these methods are not appropriate for conducting research on sign language varieties in Indonesia (2.2). I then turn to other approaches that can be used to investigate variation, including Variationist Sociolinguistics and linguistic typology, which have both been applied to sign languages in several studies since the turn of the twenty-first century. Both of these approaches are used in the investigation that follows (2.3).²⁰

2.1. Sociolinguistic dilemmas for linguists

‘Language’ and ‘dialect’ are fascinating terms because they are commonly used – by linguists and non-linguists alike – yet have no precise definitions, which makes them difficult to apply objectively. Yet documentary linguists are often faced with decisions as to how to apply these terms, which often requires distinguishing languages from dialects. It is helpful to make a distinction between ‘language’ as a linguistic construct and as a socio-political construct (Hudson, 1996:35; Dixon, 2012:463). In other words, language varieties may be distinguished on linguistic grounds, on socio-political grounds, or both. Linguistic approaches are considered first (2.1.1), and then socio-political definitions (2.1.2). In section 2.1.3, I discuss how sign languages have historically been named and delineated.

¹⁹ This does not, of course, imply that *all* studies conducted between 1970 and 2000 use this approach.

²⁰ The techniques that sign language sociolinguists have used to investigate variation represent just a subset of the range of frameworks and practices that have been used for spoken languages. In section 2.3, I also provide an all-too-brief overview of analytic practices that have been developed by sociolinguists of spoken languages, such as perceptual dialectology, and so called ‘second-wave’ and ‘third-wave’ practices (2.4.2 and 2.4.3, respectively). These are new approaches for sign language research, and sign language linguists have been slow to apply them to sign language variation.

In an attempt to refer to the language used by a given population in a way that does not automatically entail its categorisation as a language or a dialect, some linguists have introduced the term ‘languoid’ to the literature to cover all types of linguistic entity: language, family, dialect, et cetera (e.g. Good & Hendryx-Parker, 2006:5).²¹ The need for such a flexible and less-loaded cover term is clear, but for various reasons I prefer to follow Hudson (1996:32) and Berruto (2010:230) in referring to ‘language varieties’.²² My use of this term is intended to showcase its inherent flexibility, and as a transient and descriptive label, a ‘language variety’ is defined solely on the basis of its users: for example, a single individual (‘Muhammad’s variety of sign language’); a particular social network (‘the variety used by Solo’s deaf football team’); or a city (‘the Solo variety’).

2.1.1. Mutual intelligibility and competing definitions of ‘language’

Two modes of speaking are regarded as dialects of a single language if they are mutually intelligible (Dixon, 2012:463). Mutual intelligibility is difficult to measure, for several reasons. Languages are not like patches on quilt, with clear boundaries between differently-coloured squares. Of course, it is possible for a language to be limited geographically (by bodies of water, and mountains) or culturally (by religious differences, for example) but in many cases languages differ only gradually, with distance. This can lead to continua of dialects, where each dialect on a continuum is mutually intelligible with its neighbours, perhaps in several directions, but dialects at the extreme ends of the continuum are not straightaway mutually intelligible to each other’s speakers or signers (DeFrancis, 1984:54; Dixon, 2012:463; Hudson, 1996:35). Such continua are attested for several spoken languages in Indonesia, including Javanese (Nothofer, 1980; Hoogervorst, 2008:18); Madurese (Clynes, 1995:485; Grimes, 2003:532); and varieties of Malay in Sumatra and elsewhere (Adelaar, 2005:210; Gil, unpublished).

A further complicating factor is that intelligibility is not dichotomous. Although a language variety may be completely intelligible – or completely unintelligible – intelligibility is a matter of *degree* (Hudson, 1996:35), because it is also possible that a language user can understand or recognise *part* of an utterance from a different language or dialect. For spoken languages with written forms, intelligibility may also depend on whether the written or spoken form is used. In Scandinavia, for example, written Norwegian is more similar to Danish, but its pronunciation is more similar to Swedish (ibid.).

The extent of mutual intelligibility between two languages is determined mainly by linguistic distance, language attitudes and language contact (Gooskens, 2007, 2013), and the use of similar

²¹ From the root *langu-* (English *language*) and the suffix *-oid* (‘X-like entity’).

²² While I thoroughly agree with the need for such a term, I have a personal dislike of the word ‘languoid’ itself, since it has scientific/robotic connotations (for me) that feel quite out of step with the phenomenon that is language.

factors has remained more or less unchanged since studies by Voegelin and Harris (1951). Linguistic distance can be assessed quantitatively or qualitatively, and either of these approaches requires the identification of similar features, such as lexical items, the phonological repertory, phonemic distinctions, morphology and syntax. Qualitatively, differences

may be represented by isoglosses – lines of demarcation between places that have different linguistic features. They may be stated as rules, either synchronic or diachronic. They may be summarized as presence or absence of certain features (Cheng, 1996:269).

Quantitative approaches entail calculations that consider the coexistence of similarities and differences, such as the Levenshtein distance (see Heeringa et al., 2013). In a study of Chinese varieties at the phonological level, Cheng (1994, 1996) calculates the values for all of the sound correspondence patterns between seventeen cities to create indices of mutual intelligibility. He then uses a cluster analysis to establish an affinity tree, showing the degree of affinity between different varieties.

Others have countered that approaches which focus on the language alone are not always helpful: according to Hudson (1996:35), ‘mutual intelligibility is not really a relation between varieties, but between people, since it is they, and not the varieties, that understand one another’. In other words, mutual intelligibility cannot be determined with certainty by looking solely at the phonological or grammatical structures of language varieties. One response to this is Recorded Text Testing, where a speaker or signer is shown a recorded text and asked questions about it to gauge how intelligible it is (Hurlbut, 2003). This method was applied by Zeshan (2000b), who showed text recorded in Karachi (Pakistan) to signers in Delhi (India), and found that the text was broadly intelligible.

However, methods centred on language users themselves have their own problems, among which is the challenge of maximising the representativeness and replicability of testing. Other confounding factors include variation in language attitudes (Schüppert, Hilton & Gooskens, forthcoming) and the multidialectal competence of the subjects who are tested. The level of competence itself depends upon a range of factors including the social and educational background of the language users, their energy levels, the topic and context of the utterance, and even how much they *want* to understand, or *believe* they can understand (Hudson, 1996:35). Previous exposure to different language varieties is also an important factor (Gooskens & Heeringa, 2014). Dixon (2012:463) notes that, although dialects at the extreme ends of a dialect continuum may not be mutually intelligible ‘it would only take a few weeks’ immersion for this to be achieved’. That is to say, these varieties are not usually so different from each other as to make them difficult to learn or adjust to; significantly, sign language users seem to be particularly adept at doing this (Zeshan, 2000b).

2.1.2. Language as a socio-political construct

If mutual intelligibility is to be the criterion by which languages are delineated, despite the difficulties highlighted in section 2.1.1, then there are several examples of varieties that are unjustifiably referred to as ‘languages’. On the one hand, Chinese is sometimes referred to as a single language, but many linguists recognise that the ‘dialects’ of Chinese are not mutually intelligible (DeFrancis, 1984:54). On the other hand, the varieties ‘Danish’, ‘Swedish’ and ‘Norwegian’ are spoken of as separate languages, but are typified by considerable mutual intelligibility (Hock, 1991:381; Gooskens et al., 2010). Although a linguist might seek to define languages linguistically, it is clear that many spoken languages have been defined and named according to other, socio-political concerns; with this in mind, some have implied that the delineation of languages on linguistic grounds alone is mistaken (Berruto, 2010:231).

There are many complex factors at play in the formation of identity, with different social and cultural affiliations at different levels. A particularly prominent example is the role of nation-building and language planning, and Wardhaugh (2010:378) observes that ‘a noticeable trend in the modern world is to make language and nation synonymous’. Deutsch (1968) describes how the number of ‘national’ languages in Europe increased from 17 to 53 over the period from 1250 to 1937, with further increases since. Governments of new countries have desired their own languages, and in cases such as Finnish, Welsh, Norwegian, Romanian, Bulgarian, Irish and Georgian, languages have become a means of reinforcing a nationalistic ideal (Wardhaugh, 2010). This can be seen in Indonesia, where the call for a national language – *Bahasa Indonesia* – was made alongside the call for independence (1.4.2).

When researching a previously undocumented language variety, linguists may find that the variety has not yet been named. Conversely, it might be that several names are used, by different parties. In Indonesia, it is not unheard of for a field linguist to document a language variety used in area ‘A’ and, during the course of his or her time there, enquire about the language used in neighbouring area ‘B’. The name used by area A for the language of area B may then be written up in the literature as given; it is later discovered that this name was coined by those from area A, and is offensive to those from area B (see the discussion of *Pepe sign language* in section 1.5). As a result, some older names are sometimes considered to be pejorative by those communities where the language is actually used (Comrie et al., 2013). Equally, the degree to which the two varieties differ may be denied or overstated by those from either area, for many different reasons.

Names for language varieties may come from different sources, and these can be external – such as visiting linguists, governments, and other organisations – or internal to the community of language users in question. Internally, language users may not agree on how the language should be named, or may have many terms for the language (e.g. Sagara, 2014, on Japanese Sign Language (JSL) and Signed Japanese). Externally, there may also be disagreement between linguists concerning the names or boundaries of varieties, especially if they use different methods,

different data, or have contact with different language users. To give an Indonesian example, some studies treat Lamaholot, a language used in and around the island of Flores, as a single language, while other studies regard it as comprising 17 languages (Sneddon, 2003:196). The business of naming a variety and describing it as a ‘language’ or a ‘dialect’ is so sensitive that the World Atlas of Language Structures (WALS) Online contains the following disclaimer:

In identifying the status of speech varieties as languages or dialects, in assigning names to languages and dialects, in identifying countries, and in locating languages in countries, we have been guided solely by practical considerations and by current scholarly practice. In no instance should our usage be taken as implying a particular political stance or as insulting the speakers of a particular speech variety (Comrie et al., 2013).

In section 2.1.3 I turn to the matter of how practices for delimiting, naming and abbreviating language varieties have been applied to sign languages.

2.1.3. The naming and delineation of sign languages

There is very little reflection in the literature on naming conventions and the delineation of sign languages. Most articles and chapters, following on from earlier literature, refer to sign languages without discussing where the name came from or how appropriate it is. However, in sign communities these debates are sometimes passionate, and may be very important for the development of the community (e.g. Aarons & Akach, 1998). It is striking that most of the geographical boundaries for sign languages referred to in the literature correspond with national boundaries, and the suitability of presuming the coincidence of linguistic and political boundaries prior to dedicated research has been questioned by Branson and Miller (1998). Of 89 sign languages listed in the index of Pfau, Steinbach and Woll (2012:1120), 60 names include the adjectival forms of countries.²³ The number of spoken language names in WALS Online that correspond to countries is comparatively much smaller, at around 79 out of 2641, or 3% of spoken languages.²⁴

Another observable trend is where sign language names correspond with spoken language areas. Langue des Signes Québécoise, and not ASL, is the sign language of the francophone Canadian province of Quebec, while Langue des Signes de Francophone Belgique (LSFB) is the sign language of the French-speaking Walloon region of Belgium; another sign language – Vlaamse Gebarentaal (VGT) – is used in the Flemish-speaking region. But the majority spoken language is not a universal predictor of sign language boundaries, since the Spanish-speaking countries of South America are commonly referred to on a national basis. The picture is similar in Switzerland,

²³ I have counted only natural sign languages; sign systems such as Signed Exact English have been excluded from the count, as have group classifications, such as ‘secondary sign languages’ and ‘shared sign languages’; tactile varieties of sign language have also been omitted.

²⁴ Of course, in many cases these 79 spoken languages were not named *after* countries; rather, both countries and languages were named after ethnic groups; but there is still a nominal link.

where signers in the French and German-speaking regions of Switzerland have claimed that their sign languages are quite different from those in France and Germany (Andersson, 2001:217).

Since none of the world's sign languages had been documented according to linguistic principles prior to 1960 (1.1), most sign languages have been named recently, and most acts of naming have taken place in one of two communities: the academic community, and the sign community.²⁵ It was linguists such as Tervoort and Stokoe who first described the linguistic status of sign languages, and essentially it is linguists who have access to the academic literature. Many, if not most sign languages have been named by hearing linguists. Andersson (2001:225) discusses the tendency of linguists and international organisations to create abbreviations, rather than adopt terms used by deaf sign language users themselves. One difficulty here is that not all sign communities *have* terms to describe their own sign languages. It often seems to be the case that, prior to the onset of linguistic research, sign language users do not refer to their language by name. Where terms do exist, they can of course be adopted, but typically sign communities only begin to develop metalinguistic awareness (3.7.3) as a result of sign language documentation. This means that, in the earlier stages of documentation, linguists do not always have the option of employing terms that are used by the sign community. This can be shown with respect to BSL.

The earliest reference that I can find to BSL is Stokoe (1972:121) who writes of 'British Sign Language signers', although Brien (2006) credits the linguist Mary Brennan as the one who first named the language 'British Sign Language'. In her article, Brennan (1975) notes that the use of this label is 'primarily a matter of convenience', but emphasises that 'the incorporation of the term "language" implies a theoretical position', which she outlines in her article. The term British Sign Language, and the acronym BSL, is used in all subsequent literature on this language (for example, Woll, Kyle & Deuchar, 1981; Deuchar 1984).

In a rare example of reflection on questions of naming and identity of a sign language, Kyle (1984) reports on interviews with 175 deaf people from around the UK city of Bristol conducted by Kyle and Allsop (1982). Sign language users did not have a sign for 'language' – a loan sign was used featuring only the manual letter 'L' – and 'to talk about their communication, deaf people use a sign which is best translated as *signing*' (Kyle, 1984:74). Kyle adds that 'models of BSL have only been presented by hearing people' (ibid.:75). Indeed, the acronym BSL – which is used more commonly than 'British Sign Language' in conversation – is spelt out using the manual alphabet, which means that even the signed form used to refer to this sign language is a borrowing from the English language. In light of this, it should be noted that there is a difference between naming the sign language in the sign language itself, and naming the sign language in a language of literacy.

²⁵ I am not aware of any cases where natural sign languages have been named by governments, although there are plenty of examples of where governments have created – and named – manual codes and sign systems.

Most sign languages have a sign that means ‘sign(ing)’, but this usually refers to signing versus speaking, and not to one sign language versus another.

Kyle observes that ‘everyone, it seems, accepts that BSL is a language, except, that is, deaf people themselves’ (ibid.:74), and concludes that sign community members show ‘considerable divergences of views about what BSL is and how it functions [...] Deaf people emphasise BSL as a network of varied regional dialects rather than as a single language’ (ibid.:73). Fifteen years later, however, Sutton-Spence and Woll (1999:38) write that ‘there is no doubt that British deaf people recognise BSL as one language.’ It seems, therefore, that attitudes of sign community members in Britain have changed. The BSL community has come to accept a designation originally suggested and used by hearing linguists, and now regularly uses the term to articulate feelings of linguistic pride.²⁶

In some cases, however, it is suggested that sign communities themselves have named their languages, through organisations of sign language users. Leeson and Grehan (2004:43) report that references to ‘Irish Sign Language’ emerged in the mid-1980s, ‘commensurate with the establishment of the Irish Deaf Society’. Another example is Belgium, where the sign language was once named on a national basis as Belgian Sign Language. The national deaf federation then split into two regional groups – Flanders and Wallonia – and current usage refers to two different sign languages – VGT and LSFb (Vanhecke & De Weerdt, 2004:27). In this case, it is political changes in the identity and organisation of sign language users that led to a change in naming practices; this appears to be an example of change brought about by purely socio-political rather than linguistic factors.

For sign languages too, references have been made to mutual intelligibility as a crucial factor in delineation: Andersson (2001:217) cites the deaf American academic Ted Supalla as suggesting that a national abbreviation may be appropriate

if the dialects of any signed language have become mutually intelligible at the national level.
If a given country has two or more mutually unintelligible signed languages, its regional or local signed languages should instead be acknowledged.

Only a small number of dedicated studies have been conducted on mutual intelligibility between sign languages – Jordan and Battison (1976) and Sáfár et al. (in press) – although others have included an element of mutual intelligibility in their documentation of sign languages, e.g. Faurot et al. (2000), Zeshan (2000b), Hurlbut (2003) and Johnson and Johnson (2008).

2.2. The use of lexicostatistical methods in sign language research

²⁶ For example, a ‘BSL Pride Day’ was held on 29 June 2013 (see http://remark.uk.com/newsid-1303_BSL%20Pride%20Day%20-%2029th%20June, retrieved 12 June 2014).

It may seem somewhat strange to discuss lexicostatistical methods, because the efficacy of these methods have been doubted by many spoken language linguists, who are vociferous in expressing their concerns.²⁷ Dixon (1997) and Campbell (2004) go as far as to reject the validity of lexicostatistics entirely.²⁸ However, four studies published during the course of my investigation have used lexicostatistical methods to delineate Indonesian sign language varieties along the language-dialect continuum (Woodward, Wijaya & Satryawan, 2011; Bharoto & Woodward, 2011; Isma, 2012; Hurlbut, 2013). Given the on-going popularity of lexicostatistical methods with some sign language linguists, it is necessary to be as clear as possible how these methods may generate misleading results when applied to sign language varieties in Indonesia. Furthermore, in several cases, lexicostatistical methods seem to have been deployed for a quite different purpose – establishing mutual intelligibility – but the suitability of lexicostatistical methods for this purpose has not been openly addressed, and this requires urgent attention (2.2.4).

2.2.1. What is lexicostatistics?

Lexicostatistics is a method of classification that entails comparing the vocabulary of different language varieties to find a measure of distance through the application of a statistical scale, and enables linguists to reconstruct family-trees for groups of languages that are known to be related (Embleton, 2000; Campbell, 2004). The most well-known proponent of lexicostatistics is Morris Swadesh (1950, 1954, 1955) – although several linguists proposed and developed lexicostatistical methods prior to this (Embleton, 2000) – but the application of Swadesh’s methods have been controversial from the outset (see criticisms made by Gudschinsky, 1956b, concerning Lees, 1953, for an early example). Linguists have responded to the perceived methodological weaknesses of lexicostatistics individually through a series of modifications (see Trask, 1996 and Embleton, 2000 for examples), while others have adopted some methods while leaving others, in accordance with their own objectives. Given the plethora of individual methodological combinations used in the literature, there is no one uniform, commonly recognised ‘lexicostatistical method’, and some working definitions are essential here in the interests of clarity, and avoiding confusion.

The first useful distinction to make is between *classical lexicostatistics* and *preliminary lexicostatistics*. This distinction is proposed by Starostin (2010)²⁹, who stipulates that classical lexicostatistics is only conducted once a historic relationship between the language varieties in question has already been demonstrated. Classical lexicostatistics is the last stage in a long process

²⁷ During the course of my discussions with spoken language linguists, several have expressed their surprise on learning that lexicostatistical methods continue to be applied to sign languages.

²⁸ Dixon (1997:36f) cites the following works in support of his argument that lexicostatistics has been ‘decisively discredited’: Hoijer (1956), Arndt (1959), Bergslund & Vogt (1962), Teeter (1963), Campbell (1977:63-5) and Embleton (1992).

²⁹ <http://starling.rinet.ru/new100/lexicostatistics.htm>

of determining the historical relationships between a series of language varieties. Preliminary lexicostatistics, on the other hand, entails the use of lexicostatistical methods before any relationship between the languages has been determined. This approach is open to accusations of circular reasoning, since lexicostatistical methods are used to establish that there *is* a relationship, and on that basis, the same methods determine the nature of the relationship.

Central to both methods is the concept of the ‘cognate’, which can best be explained with recourse to an example. Historical linguists consider German and English to be related because they have descended from a single language variety – West Germanic – that was in use around 2000 years ago (Hawkins, 2009). To give an example of what this means in practice, the German word *Tanz* and the English word *dance* came from the same proto-form, and so they are cognate. As the West Germanic variety split – see Figure 2.1 – the proto-form changed in different ways as, through time, its sounds became subject to different but regular phonological processes in each ‘descendent’ language variety. Regular sound correspondence between German [t] and English [d] means that *Tanz/dance* is not the only cognate pair: others include *Tag/day*, *tot/death*, *Tür/door*, and *gut/good*, where the affected consonant is in a final position (Ratcliffe, 1998:14).

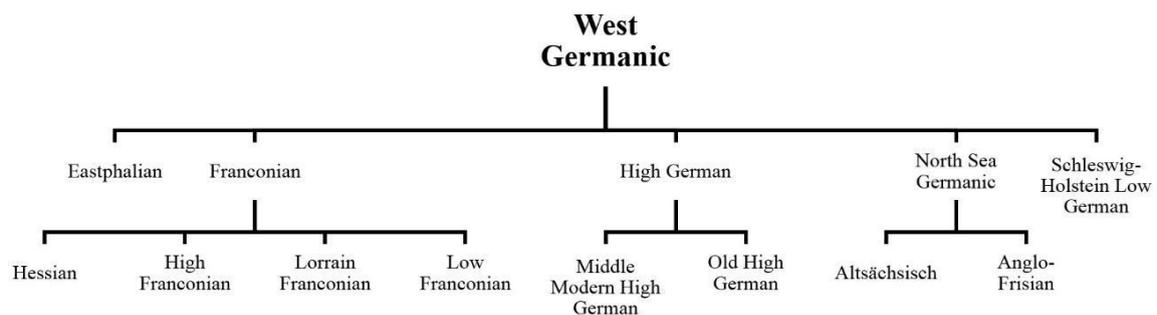


Figure 2.1. A section of the West Germanic family tree (based on Hammarström et al., 2014).

Written documentation enables historical linguists to use techniques such as regular sound correspondence in order to identify cognates. Having done this, methods from classical lexicostatistics can then be applied. One of the problems is that it can be difficult if not impossible to identify cognates simply by finding formal similarities. To give but one example, Spanish *mucho* and English *much* are formally and semantically similar, but not cognate: *mucho* comes from the Latin *multum* meaning ‘much’, while *much* comes from Old English *micel* meaning ‘big’ (Warnow, 1997:6586). Conversely, French *chef* and English *head* are cognate, even though this is no longer formally apparent (Embleton, 2000:149).³⁰ It is primarily for this reason that

³⁰ Parallels can be found in sign languages: for example, there are formally similar (iconic) signs in NS and LSM, which are unrelated (Currie, Meier & Walters, 2002); conversely, Frishberg (1975) gives examples of signs in ASL that derive from eighteenth-century French Sign Language; diachronic changes have changed the form of some of these signs in ways that may prevent them from being identified formally as cognate with contemporary LSF signs (2.2.3(iv)).

preliminary lexicostatistics has been criticised: identifying cognates on the basis of formal similarity alone is a risky endeavour – see also section 2.2.3(iii).

Another reason for caution is that formal similarities can arise through contact between language varieties in the period following the language ‘split’. There are formal similarities in pairs such as the French *famille* and the English *family*, for example, but these are not treated as cognate; rather, they occur as a result of language contact (in this case, the Norman invasion of England in 1066 led to many borrowings from language varieties across the English Channel). Embleton (2000:149) points out that the ‘splits’ manifest in the *Stammbaum* or ‘family-tree’ model of language change, where language varieties separate and change in different ways, are often inaccurate. Varieties do not always separate quickly and ‘cleanly’, nor do they always subsequently develop independently of one another. Conversely, it is very common for proximate language varieties to borrow from each other.

Having established a historical relationship between language varieties, the classical lexicostatistics method requires linguists to ascertain how many items on a fixed word list are ‘cognates’ for these varieties. Once a percentage is obtained, this is applied to a classificatory scale in order to group these varieties. The resulting percentage of cognates – between English and German, for example – depends on the items that are examined. Importantly, lexicostatisticians have argued that the core or basic vocabulary must be used, because it is more resistant to lexical change, such as borrowing, than the peripheral or general vocabulary (Gudschinsky, 1956a:613; Crowley, 1997:171). Lexicostatistics also rests on the assumption that the rate of lexical replacement is more or less stable (*ibid.*:172), and Swadesh (1950) developed a list of ‘core vocabulary’ comprising noncultural lexical items that are supposedly less prone to borrowing.³¹

All of these assumptions have subsequently been questioned by linguists. The very notion that there is such a thing as a basic or core vocabulary of items, that are independent of language or culture, is criticised (Campbell, 2004:201). Additionally, doubts have been raised as to the validity of the assumption that the rate of lexical retention is constant through time, and that the rate of loss is the same cross-linguistically (*ibid.*:202). There are several documented examples where basic vocabulary changes rapidly and unevenly, through borrowing and other phenomena, and this distorts the results, leading Embleton (2000) to describe this assumption as a ‘grossly simplifying’ one.

³¹ Initially this list comprised 200 items, but was later reduced to 100 (Swadesh, 1971:283).

Several different classificatory scales are proposed in the literature and this sometimes leads to confusion (Crowley, 1997:184), although most seem to be a variation on the one proposed by Swadesh (Gudschinsky, 1956a:621)³² shown below in Table 2.2.

Table 2.1. Terms for categorising languages suggested by Swadesh (cited by Gudschinsky, 1956a:621).

term	divergence (centuries)	cognate (percent)
language	0-5	100-81
family	5-25	81-36
stock	25-50	36-12
microphylum	50-75	12-4
mesophylum	75-100	4-1
macrophylum	over 100	less than 1

It seems that the thresholds (of 81%, 36% and so on) and the names ('language', 'family', 'stock') were chosen arbitrarily by Swadesh, which is particularly striking given how widely this scale has been used. Furthermore, Crowley (1997:173) carefully notes that the term 'family' is used here with a different meaning: 'lexicostatisticians are using the term *family* in a completely different way from the way [it is commonly used].' By 'language family', historical linguists usually mean all language varieties that have descended from a common parent language, regardless of how close or distant the relationships with each other. According to Crowley, lexicostatisticians use the term *family* simply as 'a particular level of subgrouping in which the members of that subgroup share more than 36% of their core vocabulary' (Crowley, 1997:173). This is confusing, and alternative labels for sub-groupings would surely be more suitable.³³

A related method, glottochronology, aims to assign a date to the separation of languages, and builds upon the assumptions of lexicostatistical methods. The terms lexicostatistics and glottochronology are used interchangeably by some linguists (Bynon, 1977:267; Trask, 1996:362; Embleton, 2000:145f), and to avoid confusion I restrict the use of the term 'glottochronology' to refer to the techniques that seek to analyse time depth, whereby 'the greater the time depth which separates the members of a language family from their common ancestor the greater the degree of differentiation between them' (Bynon, 1977:267). Glottochronology is effectively an extension of classical lexicostatistics, but is more controversial, and doubts as to its premises – strong

³² Although Gudschinsky (1956a:621) cites Swadesh (1954), unfortunately she omits this reference from her bibliography. The article that she refers to appears to have been published by Swadesh in *Word*, but this journal is no longer in publication; back issues are unavailable. It would be interesting to see the reasoning that Swadesh gives for his scale, not least given the impact it has made on sign language documentation.

³³ This is problematic because not all linguists have understood this distinction. Consequently, some linguists who are unfamiliar with lexicostatistical methods interpret lexicostatistical findings using terms such as 'genetic relationships' and 'genealogical relationships', in accordance with the more common definition of 'language family'.

doubts, in some cases – are expressed by Trask (1996), Embleton (2000), Campbell (2004) and Joseph and Janda (2007), among others.

Briefly, glottochronology seeks to pinpoint the date when a proto-language split by comparing the reconstructed proto-language with its ‘descendant’ language. Lees (1953) attempts to quantify a standard rate of change in terms of morpheme decay/replacement – or its opposite, morpheme retention – and using the Swadesh list, he reports that approximately 81% of items are retained per millennium (Bynon, 1977; i.e. the rate of morpheme decay is 19% per millennium).³⁴ Lees (1953) has received considerable criticism on several counts; a large degree of arbitrary manipulation is needed in order to make the calculations work; the retention rate rests upon a sample of only 13 languages; these have a long written history – unlike most of the world’s languages – which could introduce bias; and 11 of them are from the same (Indo-European) language family. Finally, the results of tests that seek to establish the validity of glottochronological methods are ‘not encouraging’ (Bynon, 1977) because they do not accord with known historical facts. For example, it places the split between French and Italian in the sixteenth century, which is far too late.

Thus far, discussion of lexicostatistical methods has underlined the importance of, and difficulties associated with identifying cognates, the complexities of separating diachronic changes (those which happen over a long time) from borrowing (when items may be imported wholesale), and the uncertainty surrounding both the origin and meanings of Swadesh’s classificatory scale. Glottochronology has also been briefly introduced and discussed. In section 2.2.2 I go on to look at how and why lexicostatistical methods have been applied to sign language varieties, and what specific problems have emerged in the process (2.2.3).

2.2.2. Lexicostatistical studies of sign language varieties

The first study to use lexicostatistical techniques also saw the first – and only – attempt to apply glottochronology to sign languages. Woodward (1978) reports on the application of lexicostatistical methods from spoken language linguistics to ASL and Old French Sign Language. This was motivated by the observation of similarities in the residual lexica of each sign language, alongside the knowledge that there was contact between the Paris National Institute for Deaf-Mutes and the deaf community in Hartford, via the American Asylum of the Deaf and Dumb, in the 1810s (*ibid.*). Woodward applies glottochronological techniques in an attempt to show that sign languages change at a constant rate, on the basis of a comparison of diachronic

³⁴ Given that Lees (1953) finds an 81% retention rate, I am fascinated by the fact that Swadesh uses 81% as a threshold for language classification. Although both are attempts to reflect a sense of how much change can happen to reach a certain level of divergence, Sheila Embleton doubts that there is an explicit link between the two (personal communication, 14 April 2013).

change in ASL and Russian Sign Language (РЖЯ), which is also reported to have split from Old French Sign Language (Wilbur, 1987).

Besides LSF, ASL and РЖЯ, there are several other cases in the literature where sign languages are reported to be related. Typically in these cases, sign language users (deaf or hearing) have moved from one country to another, either temporarily or permanently. Through contact with deaf sign language users in the new country, sign language varieties from the old country are introduced, or to be more specific, lexical items are introduced, since it is not always known whether grammatical structures are transmitted. Where a sign language variety already exists, it has been suggested that a process of creolisation takes place between the two sign languages (e.g. Woodward, 1978, in the case of Old French Sign Language and ASL). Other examples of such transmission are as follows:

Geographically distant sign languages reported to be ‘related’

BSL to Auslan and NZSL (Schembri et al., 2010)

JSL to South Korean Sign Language and Taiwan Sign Language (Su & Tai, 2009)

German Sign Language to IsraelSL (Meir & Sandler, 2008)

Danish Sign Language to Icelandic Sign Language (Aldersson & McEntee-Atalianis, 2009).

In these cases, where a sign language variety has travelled hundreds or even thousands of miles, it is easy to see the motivation for using lexicostatistical methods: sign linguists have used lexicostatistical techniques in an attempt to classify the extent to which the language varieties have diverged. In some cases, it can be convincingly argued that these cases constitute true ‘splits’, despite the various practical and theoretical problems with lexicostatistical methods (section 2.2.3). Examples of this kind are perhaps more suited to the application of such lexicostatistical methods, where there are reasonable grounds to assume that there was a discrete period of language contact, with little if any subsequent language contact. Unfortunately, there is not always much evidence to support such an assumption. For example, Aldersson and McEntee-Atalianis cite only the Ethnologue as evidence for a historic relationship between Danish Sign Language (DTS) and Icelandic Sign Language (ÍTM).³⁵

A selection of lexicostatistical studies that have been conducted on sign language varieties is presented in Table 2.2. What is particularly remarkable is that most of the lexicostatistical studies in Table 2.2 do not include known ‘related’ sign languages which have since split, but rather regional varieties within a specified geographical area, which is in most cases a country.

Table 2.2. *A selection of studies that compare the closeness of sign language varieties using Swadesh’s classificatory scale.*

author (year)	sign language varieties

³⁵ The Ethnologue is not a reliable source for this kind of argument. For example, it describes ‘Indonesian Sign Language’ as related to ‘Malaysian Sign Language’, and I am not aware of any evidence for such claims (see 4.3.4).

Woodward (1978)	ASL and LSF
Bickford (1989, 1991)	varieties of Mexico
Woodward (1991, 1992)	varieties of Costa Rica
Woodward (1993)	varieties of India and Pakistan
Woodward (1996, 2000)	varieties of Thailand, Vietnam
McKee & Kennedy (1998, 2000)	BSL, Auslan, NZSL
Currie, Meier & Walters (2002)	JSL, ASL, LSF, LSM
Hurlbut (2003)	varieties of Malaysia
Johnston (2003)	BSL, Auslan, NZSL
Bickford (2005)	varieties of Eastern Europe
Parkhurst & Parkhurst (2007)	varieties of Spain
Hurlbut (2008)	varieties of Taiwan
Hurlbut (2008)	varieties of Philippines
Johnson & Johnson (2008)	varieties of India
Parks and Parks (2008)	varieties of Guatemala
Hurlbut (2009)	varieties of Thailand
Aldersson & McEntee-Atalianis (2009)	DTS and ÍTM
Sasaki (2009)	JSL and TSL
Su and Tai (2009)	JSL, KSL, TSL and ASL
Parks and Parks (2010)	varieties of Peru
Padden, Al Fityani & Padden (2011)	LIU, Palestinian SL, Kuwait, Libya
Hurlbut (2012)	varieties of Nepal
Isma (2012)	varieties of Java (Indonesia)
Hurlbut (2013)	varieties of Indonesia

For example, Bickford (1989, 1991) does not include Mexican Sign Language (LSM) and another sign language that is geographically distant but known to be related; rather, he includes several varieties from different regions of Mexico. Presumably the signers from at least some of these regions are in contact, whether regular or intermittent, and because of this, it is difficult if not impossible to show that formal similarities and potential cognates have not occurred through borrowing (I discuss this further in section 2.2.3). Consequently, it cannot be said that this kind of research is concerned with historical relatedness.

Most of these studies follow a similar approach: a word list is introduced, usually a modified Swadesh list, and data are obtained through elicitation, or dictionaries, or both. Most studies define the degree of lexical similarity between sign language varieties by categorising pairs as ‘identical’, ‘similar’ or ‘different’ based on the number of corresponding phonological parameters such as handshape, orientation, movement and location, although this is not always straightforward, as Xu (2006) points out. The classificatory scale from lexicostatistics is then introduced.³⁶ On the basis of this, several different kinds of conclusions are reached. In some cases, the language varieties in question are labelled as dialects of the same language (Johnston, 2003; Hurlbut, 2008, 2013) or different languages (Isma, 2012). Alternatively, inferences are made concerning the mutual intelligibility of different varieties, or historical relatedness (Bickford, 1991). In section 2.2.3, I return to the question of how lexicostatistical methods have

³⁶ Many of the studies in Table 2.2 cite Crowley (1997) to justify their use of lexicostatistical methods, but none of these studies mention the practical and basic theoretical problems that Crowley describes (1997:183-6).

been applied. At this point, it is sufficient to note that most of the studies in Table 2.2 do not follow classical lexicostatistics methods (2.2.1), since historical relatedness is not established, and cognate status is not demonstrated; rather, these are preliminary lexicostatistical studies.

2.2.3. Applying lexicostatistical methods to sign languages: some problems

All of the logical and theoretical problems identified in 2.2.1 for spoken languages also apply to sign languages. In this section, I deal with specific problems in applying lexicostatistics to sign language varieties. Critical notes on lexicostatistics have occasionally been made by sign linguists (for example Woodward, 1991; Zeshan, 2000b; Woll, Sutton-Spence & Elton, 2001; Meir & Sandler, 2008; Su & Tai, 2009) but to my knowledge these points have not been brought together into a single discussion. Furthermore, some of the key problems have been missed, and the dubious link that has emerged between lexicostatistical methods and sociolinguistic variation has not, thus far, been clearly addressed in the sign language literature. In applying lexicostatistical methods, some have made changes to try and mitigate particular problems (Woodward, 2000) while others have added caveats that limit the intended scope of investigation to synchronic study (McKee & Kennedy, 2000:54). However, since lexicostatistical methods continue to be applied, and for several different purposes, I now explain my reservations with these methods. These concern the elicitation of items, iconicity, the word list, the ‘cognate’ and the variation problem.

i) Elicitation of items

Several studies have collected data from dictionaries and similar publications. An overview of the lexicographical issues that emerge when using this approach is given by Johnston (2003). Problems are also encountered when eliciting data directly from informants in the field. Eliciting specific lexical items requires the use of words, pictures, or knowledge of another sign language apart from the target language. In my own trials of lexicostatistical methods, use of cards with words written on proved to be particularly disagreeable because several informants seemed to find the process somewhat oppressive.³⁷ In some cases, the signed response replicated the morphological structure of the stimulus word. This happened with *bermain* (‘to play’), which was signed by one participant as two signs, BER:sibi and MAIN (this is how *bermain* would be signed according to SIBI, as explained in section 1.2.2). The use of pictures is also not without problems: it is not easy to render abstract or function words from the Swadesh list such as ‘because’ and ‘if’ in pictorial form, and in any case these concepts are often expressed non-manually across sign languages, rather than by a single sign. In addition, participants sometimes respond with ‘descriptions’ of what they see, rather than individual lexical signs, which suggests that the visual

³⁷ Sometimes, informants did not understand the meaning of the stimulus word, or showed signs of confusion, and provided an incorrect sign, for example *bintang* (‘star’) rather than *binatang* (‘animal’).

form may have some influence on how the task is processed. Other linguists have experienced similar problems (Osugi, Supalla & Webb, 1999; Nyst, 2007).³⁸

ii) Iconicity

Much has been written about the issue of iconicity (see Parkhurst & Parkhurst, 2003). Put succinctly, the problem is that signs may be formally similar because they derive from the application of a similar metonymic process (Taub 2001:45), and not because they are historically related. Currie, Meier and Walters (2002:232) find that Mexican Sign Language and Japanese Sign Language are around 23% similar. Historical relatedness and language contact cannot explain this finding, given that these language varieties are not known to be related, and have not been in extensive contact, which leaves only iconicity as a viable explanation. With this in mind, Woodward modified the Swadesh list to exclude signs that are likely to have an iconic basis, including pronouns and body parts, but there is no objective basis on which one can predict which signs are likely to be iconic. Bencie Woll recommends including concepts with a propensity for iconic depiction ‘because sign language users may produce these signs differently if they have different visual motivations’ (cited in Aldersson & McEntee-Atalianis, 2009:53).³⁹

iii) The word list

The notion of a list of ‘basic vocabulary’ has itself come under criticism for various reasons. McKee and Kennedy (2000) find it too restrictive, and question the accuracy of the findings of a comparison using Woodward’s modified Swadesh list alone. They argue that a more random selection of lexemes should be used as the basis of a comparison, although Woodward (2011:40) has since criticised methods that use more than the basic core vocabulary. Another problem is semantic mismatch, known as anisomorphism (see Brien & Turner, 1994). How can we know that the target sign language will have a sign for certain items on the wordlist? For example, the notions of ‘brother’ and ‘sister’ are realised in English – the source language of the word list – but do not exist in any known sign language variety in Indonesia.

Isma (2012:23) notes that some words have more than one ‘sense’ and that there is no specification on how to resolve this. Furthermore, there is a cultural mismatch, and some terms on Swadesh’s word list – such as ‘louse’ and ‘grease’ – are not closely associated with sign communities (Woll, Sutton-Spence & Elton, 2001). Similarly, ‘snow’ is in no sense part of the ‘basic vocabulary’ of a sign language user who lives in an equatorial archipelago, and signers are

³⁸ Connie de Vos (personal communication, 25 April 2013) also reports that Kata Kolok signers sometimes provided recipes when asked for the sign for a particular spice or dish.

³⁹ I recommend retaining all concepts *if the aim is to measure mutual intelligibility* (see 2.2.4), because if signers of different varieties produce the same sign, these will presumably be intelligible regardless of whether the sign is or is not iconic.

perhaps more likely to create an idiolectal sign for this, in the absence of a more conventional form.⁴⁰ With these difficulties in mind, it makes more sense to approach language documentation from the perspective of the target language, thus avoiding anisomorphism, and this is one of the advantages of using spontaneous corpus data rather than lexical elicitation.

iv) Historical linguistics and the ‘cognate’

In section 2.2.1 it was explained that two forms are cognate if they derive from the same source, that is, from the same proto-item in a common parent language. Lexicostatistical studies of sign languages face the problem of how to identify cognate status. Lack of written documentation, needed in order to chart the history of a language, is a problem faced by many spoken language linguists, as well as sign linguists; but it is possible to reconstruct proto-languages through the identification of regular sound correspondence (2.2.1), because specific and regular patterns between certain forms are unlikely to occur by chance alone (Crowley, 1997). Although sign languages have a structure at the phonological level (1.1), only a small number of diachronic changes have been identified at this level, and these for ASL alone (Frishberg, 1975). It is not clear how far these changes are akin to regular sound correspondence in spoken languages.

Based on a comparison of ASL and Old French Sign Language, Frishberg (1975) lists several changes that seem to have occurred to signs over time: iconic gestures become more arbitrary, signs become displaced in certain ways within the signing space, one-handed signs become two-handed, and non-symmetrical signs become symmetrical. However, it is not clear whether these changes are common to all sign languages. Even if they are, it is difficult to see how these processes could help to infer cognate status in cases where there is no other reason to suppose a historical relationship between varieties. For example, nowhere is it attested that variety A has a series of one-handed signs, that variety B has a corresponding set of two-handed signs, and hence that A and B are related. This suggests that the changes Frishberg identifies are not truly equivalent to diachronic phonological changes in spoken languages.

Woodward (2011:41) helpfully suggests some of the possible phonological rules that may be responsible for deriving a current form from an earlier one, including assimilation, dissimilation, deletion, epenthesis, coalescence and metathesis, but he does not explain how these processes can reveal proto-forms when only the current forms are known. Notably, in none of his work does Woodward describe the basis on which he attributes cognate status to forms in sign languages where historic documentation is unavailable. Some sign linguists look for these changes taking place between the varieties used by older and younger signers (2.3.1), but this brings us no closer to identifying cognate pairs across sign language varieties.

⁴⁰ These difficulties are not restricted to sign languages: see for example Huang et al. (2007).

There are two other associated problems. First, historical linguists stipulate that, since cognate status precludes borrowing phenomena, great care must be taken to remove borrowed items from cognate counts. There is usually no way of knowing how to differentiate between borrowed and historically derived forms (Woll, 1987; Embleton, 2000; Meir & Sandler, 2008; Lanesman, 2013). Particularly in cases where the language varieties in question are regional and proximate, similarities due to areal contact is highly likely, and in 2.2.2 it was pointed out that most of the studies that seek to apply lexicostatistical methods focus on such proximate varieties. Indeed, it is natural for users of proximate language varieties to borrow from each other, and the lexicon is known to be the easiest element of a language to borrow (Muysken, 1995). It is therefore necessary to be cautious when drawing conclusions about the implications of lexical similarity.

The second point concerns the Stammbaum, or ‘family-tree’ model, which has been used by historical linguists for many years to describe the way in which languages change and split into different languages through time. Some sign linguists have applied the concept of the language family directly to sign languages, and this is problematic because the notion of language families and genetic relationships is not well-defined for sign language research (Palfreyman, Sagara & Zeshan, in press). For example, many of the premises of historical linguistics are based on the documented history of the Indo-European language family over several centuries. In the case of sign language in Indonesia, we do not know for certain the time depth of its sign language varieties, but it seems highly unlikely that they have been used continuously for several centuries (see chapter 4).

Even in cases where there is evidence that sign language was used in the distant past, we do not know if the sign language has been used continuously.⁴¹ In other words, the time scale of sign languages is likely to be very different from many spoken languages that have a long and unbroken history (Woll, Sutton-Spence & Elton, 2001:22). Considerable caution is therefore needed when applying concepts from historic linguistics to sign languages.⁴² Even where spoken languages *are* known to have long and unbroken histories, spoken language linguists such as Embleton (2000) have questioned the appropriateness of the ‘family-tree model’, and wonder what exactly is meant by ‘a group of genetically related languages’.

v) The variation problem

⁴¹ For example, Miles (2000) shows that sign language was used in the court of the Ottoman Empire, but unfortunately there is no evidence to suggest that this historic variety is related to modern TİD. To paraphrase Dixon (1997:37f), for questions concerning the time depth and development of most sign languages, there is only one honest answer: ‘we don’t know’.

⁴² Woodward (1978) suggests that sign languages evolve at the same rate as spoken languages, based on research of the kind conducted by Frishberg (1975), but as discussed earlier, there is no compelling evidence for this.

The majority of lexicostatistical studies make no mention of the possibility that signers themselves might know and use more than one variant, and from a sociolinguistic perspective this is perhaps the method's most notable shortcoming. Even when studies acknowledge and investigate variation within one region, most of them only seem to elicit one variant from each participant, or at any rate, they make no mention of how they deal with the (highly likely) possibility that signers may know more than one variant.⁴³ A notable exception is Stamp, who states that, as part of her investigation of colour and other concepts:

participants were asked [...] to produce any other signs they knew for that concept (e.g., regional, informal/formal variants). The first sign produced was considered to be the signer's default variant, unless the signer stated explicitly that another variant was the one they use most on a daily basis (Stamp, 2013:142).

Notably, however, Stamp's research is not lexicostatistical. I suspect that most if not all *lexicostatistical* studies avoid the question of whether signers have an active or passive knowledge of more than one variant because the lexicostatistical method cannot cope with this possibility.⁴⁴ Originally, the question of variation was not significant because the method was only intended to examine the number of items for which potential cognates exist, with a view to estimating the point at which two language varieties split. But since the method has been applied to the sole task of language delineation, it no longer makes sense to ignore intra-varietal or intra-individual variation. The apparent working assumptions of the lexicostatistical method – that language varieties are homogeneous and that the signs used by individuals do not vary – are without foundation.

Consider the following hypothesis. A word list is used to elicit data from two signers on separate occasions. When asked what their sign is for one of the items on the word list, signer A uses variant *x*, and signer B uses variant *y*. This is taken to indicate that the signs are not 'cognate', and has the effect of lowering the overall percentage of cognates. If this effect occurs often enough, and the overall percentage falls below 80%, the language varieties of each signer are classified as 'different languages'. Yet if both A and B know signs *x* and *y*, this would skew the result and deliver a highly inaccurate conclusion.

⁴³ Hurlbut (2013) is the first lexicostatistical study I have seen that mentions this issue. She notes that: 'a working assumption was that everyone living in the same city would know all the signs used by those from whom I was eliciting the words. Thus when comparing two cities with each other if a sign from one subject was the same or similar to any one of the signs from another city, the two were counted as similar for that item' (Hurlbut, 2013:10). There are still problems: in each place, data was elicited from 'one or more' signers (the number varied); where data was elicited from several signers, Hurlbut concedes that social networks can have a decisive impact on the outcome of comparison (14).

⁴⁴ This is the likely explanation for the opposite conclusions drawn by Isma (2012), Woodward, Wijaya and Satryawan (2011) and Woodward and Bharoto (2011) on one hand, and Hurlbut (2013) on the other, even though both use 'lexicostatistical methods'.

In order to test this hypothesis, I used the lexicostatistical method in Makassar with two signers, A and B, who live in the same city and are members of the same sign community, meeting on an almost daily basis. Data were elicited from each signer separately using a 100 word list, mostly based on items from the Swadesh list. A small number of items were altered because they were not culturally appropriate for Indonesia (see sub-section (iii) above). Either one or both signers had difficulty understanding the meaning of some 27 items from the wordlist (sub-section (i)) and only items for which both signers respond with a clear sign are used in the analysis. In accordance with many of the studies shown in Table 2.2, signs have been coded as either identical (in all phonological parameters), similar (varying in one parameter), or different (varying in two or more parameters). The results are shown in Table 2.3.

Table 2.3. *A comparison of signs elicited from two signers in Makassar using a wordlist (n=73).*

	n	%
signs are ‘identical’	38	52.1
signs are ‘similar’	7	9.6
signs are ‘different’	28	38.3
total	73	100

If identical and similar signs were to be treated as ‘cognates’, it would indicate that Signer A and Signer B were 61.7% similar. According to the lexicostatistical scale in Table 2.1, this would suggest that Signer A and Signer B use different languages. (Even if the remaining 27 signs had been elicited successfully, and proved to be the same in every case, the overall result would still lead to the same outcome, since the similarity would be 72%.) This conclusion does not make sense, since both signers regularly meet and converse. They are able to do so primarily because, where their responses are different, they know more than one variant, including each other’s variants. For example, for the variable *ibu* (‘mother’), which is one of the items on Woodward’s list, Signer A gave one variant (IBU:1a) and Signer B gave another (IBU:2).⁴⁵ These lexical variants are shown in Figure 2.2. Yet a search of the spontaneous data that I collected shows that both variants are used in Makassar, along with three others (Table 2.4).

Table 2.4. *The frequencies of five variants found in the Makassar dataset meaning ‘mother’.*
(One of these, IBU:2^1a, appears to be a compound of two other variants.)

gloss	n	%
IBU:1a	18	46.1
IBU:1b	7	18.0
IBU:2	9	23.1
IBU:2^1a	2	5.1
IBU:sibi	3	7.7
total	39	100

⁴⁵ Since ‘mother’ is on the Swadesh list and the Woodward list, it is supposed to be basic vocabulary, and hence relatively fixed. The findings here show that this is not the case. Furthermore, Solo is known to have at least two other variants for ‘mother’.

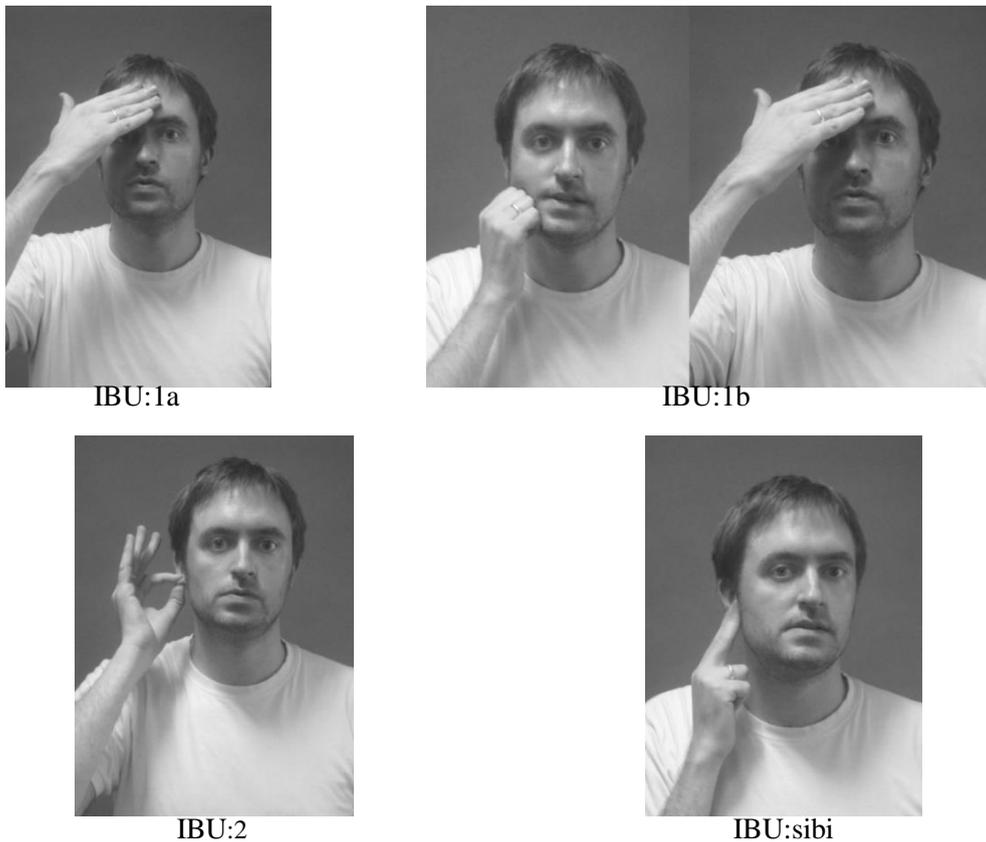


Figure 2.2. Four variants found in the Makassar dataset meaning ‘mother’.

Even if Signer A were to use a variant form that Signer B did not know, it seems unlikely that this would cause a misunderstanding; Signer B would use contextual information, or mouthings, or interpret the iconic properties of the variant, to understand what Signer A is saying.

2.2.4. Comments on the application of lexicostatistical methods

It seems that, when applying lexicostatistical methods, many sign language linguists have actually been less interested in the historical relatedness of languages, and more interested in mutual intelligibility and/or delineating languages along the language-dialect continuum (Parkhurst & Parkhurst, 2003). For example, many of the studies do not discuss relationships between sign languages lower down on Swadesh’s classificatory scale. Sign language varieties are not grouped as belonging to the same ‘stock’ or ‘mesophylum’ in the way that some spoken languages are. By basing methodological methods on lexicostatistical principles, there is a confusing mismatch between research design and research aim (Figure 2.3). If it is accepted that the actual aim of research is to examine mutual intelligibility, the premises and assumptions underlying the method must be re-examined in light of this, since it is not appropriate to transfer methods intended for one research question in order to answer a different research question. The circularity of argumentation is also problematic.

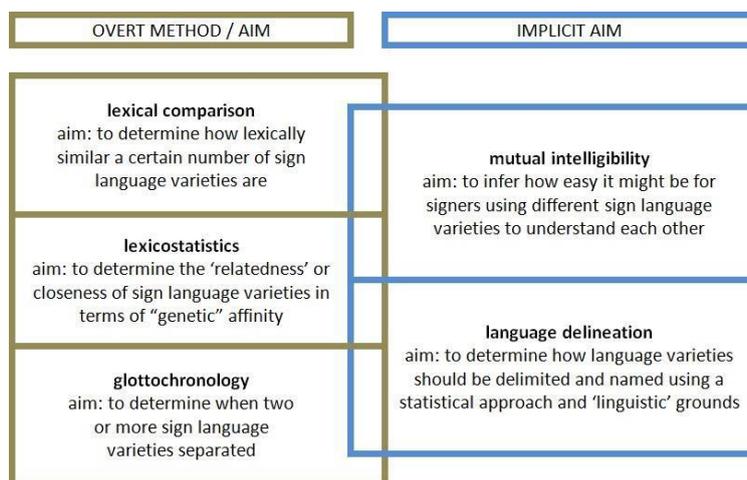


Figure 2.3. *The overt methods and implicit aims of lexicostatistical research.*

The actual aim – of measuring mutual intelligibility – has important implications for questions concerning how to solve some of the problems that have been identified. Most of these problems have been tied in some way to lexicostatistical concerns. If the purpose is to determine mutual intelligibility, we need be confined by lexicostatistical theories no longer, and different questions must be asked instead. For example, linguists have attended to the question of how to exclude iconic signs, in order to avoid treating as cognate signs that are actually unrelated, and similar only due to the same iconic motivation. If the aim is to measure mutual intelligibility, it is surely important to *include* consideration of iconic signs.

Another premise that needs re-evaluating is the decision to compare only a section of the lexicon. As explained in section 2.2.1, this decision was based on the assumption that the ‘core vocabulary’ is more resistant to change. Despite the uncertain validity of this assumption (see above), once the overt goal is mutual intelligibility and not lexicostatistics, it is no longer necessary to limit our focus to a small portion of the lexicon, and the prospect of linguistic comparison at other levels of organisation becomes viable. This includes consideration of phonology and prosody, morphosyntax and semantics, among others.

It is not hard to see why linguists have used lexicostatistical methods. The idea of quantifying mutual intelligibility adds a perceived measure of ‘objectivity’ to the complex issue of language delineation, while the mathematical element and cosmetic concerns over removing ‘iconic’ signs from the word list lends an additional air of credibility. The use of a short word list also enables much quicker results than other methods, such as the collection, annotation and analysis of the same (or more) lexical items in a corpus of natural data, or the analysis of grammatical structures. However, the results are necessarily preliminary in nature, and have the potential to confuse sign community members who may not understand either the method or the outcomes.

The suitability of Swadesh's classificatory scale for measuring mutual intelligibility has not, to my knowledge, been discussed in the literature on spoken language linguistics, least of all sign linguistics. According to Crowley, 'it seems that as soon as speakers of two different speech traditions ... have more than about a 20 per cent difference in their basic lexicons, then mutual intelligibility is lost'. Yet from what I can establish, Swadesh's scale was entirely arbitrary (see footnote 32). Even if the 81% threshold could be applied successfully to all spoken language varieties, the usefulness of this scale for the mutual intelligibility of sign language varieties remains unclear. The arbitrary nature of any scale that seeks to delineate varieties along the language-dialect continuum is apparent from Isma (2012:33), where it is concluded that 79.7% of signs are 'cognate' – this is 0.3% short of classifying the varieties of Jakarta and Yogyakarta as dialects of the same language. Furthermore, Zeshan (2000b) and Hendriks (2007) suggest that the outcomes of lexicostatistical studies do not necessarily correspond with mutual intelligibility. Signers have strategies for dealing with variation, and are perhaps more experienced in dealing with lexical variation than are speakers.

2.2.5. Summary: the need to move away from lexicostatistics in Indonesia

Given the various practical and theoretical problems associated with lexicostatistical methods, these methods are not viable for assessing variation in Indonesia. Most of the studies that seek to apply lexicostatistical methods fall short of the requirements of classical lexicostatistics, partly because of the need to show beyond doubt that lexical similarities are due to historical relatedness and not borrowing or iconicity. As a means of quantifying delineation along the language-dialect continuum, it falls short most notably in its failure to deal with the existence of several variants. The lexicostatistical approach seeks to quantify variation, but paradoxically cannot deal with it.

It is not my intention to imply that lexical comparison is without value. Clearly, the question of whether the lexica of two varieties have many, few or no similarities is of great significance. However, there is little point in adopting a research design based on lexicostatistical methods, and consequently any research must find alternative and valid ways of addressing questions concerning iconicity and variation. Two viable alternatives for assessing linguistic variation are discussed in section 2.3: Variationist Sociolinguistics, and linguistic typology.

2.3. Approaches to analysing sign language variation

In this investigation, conceptual and methodological approaches from linguistic typology and Variationist Sociolinguistics are used to make inferences about dialect/language delineation. These findings can then be cross-checked with qualitative evidence relating to the sociolinguistic and socio-political concerns of sign community members (see 2.4). However, it is important to note at the outset that each method does not in itself resolve the delineation question: sociolinguists using Variationist methods seem mostly to have operated within a single language

(2.3.1), while in practice typologists either assume different languages, or have little to say about language versus dialect status (2.3.2).

2.3.1. Variationist Sociolinguistics

Sociolinguists generally consider variation from a completely different viewpoint to lexicostatisticians (2.2), and have developed many approaches for examining variation, a small number of which have been applied to sign languages. The starting point for sociolinguistics is that language choices may be motivated by social factors and reflect social background (Meyerhoff, 2006; Wardhaugh, 2010). Sociolinguists have also placed great emphasis on analysing natural language data collected from a representative sample (Tagliamonte, 2006).

Variationist Sociolinguistics almost always starts with the linguistic variable (Tagliamonte, 2012), which occurs through the layering or alternation of forms, where there is more than one way of expressing the same meaning or function. Speakers (and signers) make choices when they speak (or sign), and may alternate between these choices; these alternative forms are referred to as variants of the variable (Tagliamonte, 2012:2-3). The linguistic variable itself is ‘a structural unit that includes a set of fluctuating variants showing meaningful co-variation with an independent set of variables’ (Tagliamonte, 2006:334), and the task of Variationist Sociolinguistics is to identify the correlations between the dependent variable and independent variables (Chambers, 2003:17). In section 3.4, the process of identifying variables and variants is discussed with respect to the linguistic data that have been collected for this investigation.

Variables have been found to differ systematically, specifically in relation to linguistic and social factors (Labov, 1963, 1969) and this systematicity has been referred to as ‘orderly heterogeneity’ (Weinreich, Labov & Herzog, 1968:100). When linguistic variables differ across time, or in accordance with economic, demographic or geographic factors, the variable is referred to as a *sociolinguistic* one (Sankoff & Thibault, 1981:213). Sometimes the realisation of a variable is found to correlate with the age of the speaker or signer, and in such cases, the synchronic dynamics often mirror language change that is taking place (Berruto, 2010). In this way, synchronic and diachronic variation cannot be separated from each other, and synchronic variation according to age may be taken to indicate language change (Labov, 1994, 2001). Furthermore, variables can occur at all levels of linguistic organisation, and the implications of this are discussed further in sections 3.4 and 3.5.1(ii).

Variationist Sociolinguistics methods were first applied to sign languages by Lucas et al. (2001). One of their studies seeks to identify statistically significant factors affecting the realisation of signs that have a ‘1’ handshape in their citation form, because the handshapes for these signs may exhibit phonological variation (see Figure 2.4). They report that the grammatical function of the sign is the most significant factor, with signers more likely to choose the ‘L’ handshape for wh-

signs (such as ‘who’ and ‘what’) and the ‘5’ handshape for personal pronouns, especially first person. The phonological environment was also a significant predictor of variation for some of these handshapes, along with the social factors of region, age, ethnicity and social class (Lucas et al., 2001).



Figure 2.4. Handshape variants studied by Lucas et al. (2001).

A second phonological variable investigated by Lucas et al. (2001) is the location variable, where signs produced on or near the forehead in their citation form may be articulated lower. As an example, Figure 2.5 shows the ASL sign KNOW produced in citation form, and non-citation form with a dropped location. Again, grammatical function is found to be the most significant predictor, with prepositions and interrogatives favouring a drop.

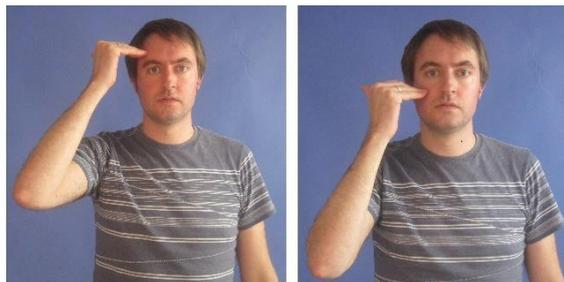


Figure 2.5. The ASL sign KNOW in citation form (left) and non-citation form (right).

At the grammatical level, Lucas et al. (2001) examine null pronoun variation in ASL narratives, i.e. PT:PRO1 THINK versus Ø THINK. They find that the significant linguistic predictors of this variation include the influence of English on the utterance, grammatical person/number, coreference with the subject of the previous clause, and constructed action contexts. The social factors of age and gender are also significant, with women and older signers favouring the presence of the pronoun, and men and younger/middle age groups favouring its absence. Finally, Lucas and her colleagues examine lexical variation for 34 stimuli such as ‘delicious,’ ‘cake’ and ‘pants’. They find that region, age, ethnicity, gender, social class and language background (whether or not the participant was raised in an ASL-using family) are all significant for many of the variants produced in response to the stimuli.

The original ASL studies by Lucas et al. have been replicated for several other sign languages, including Auslan, NZSL and BSL (see Table 2.5 for a selection of these studies, and the variables that have been targeted).

Table 2.5. A selection of Variationist Sociolinguistics studies conducted on sign language variables.

authors	language(s)	linguistic variables
Lucas et al. (2001)	ASL	<ul style="list-style-type: none"> • the '1' handshape and location drop • null pronoun variation • lexical variation for 34 stimuli
Schembri & Johnston (2007)	Auslan	the occurrence of fingerspelled elements
de Beuzeville, Johnston & Schembri (2009)	Auslan	spatial modification of indicating verbs
Schembri et al. (2009)	Auslan and NZSL	location drop
McKee et al. (2011)	Auslan and NZSL	presence of subject noun phrases
Fenlon et al. (2013)	BSL	the '1' hand configuration
Stamp et al. (2014)	BSL	41 lexical variables from the domains of colour terms, numerals and country signs
Fenlon, Cormier & Schembri (2014)	BSL	modification of directional verbs
Sagara (2014)	JSL	realisation of numerals 10, 100 and 1,000

Recently, several 'new' variables have been chosen for study. At the lexical level, Stamp et al. (2014) investigate 41 lexical items from the semantic domains of colour terms, numerals and country signs. Using data from 249 participants in eight cities across the UK, elicited data are coded as 'traditional' or 'non-traditional' variants. The authors report that age, school location, and language background are significant factors in the choice of variant. Further, their findings point to the occurrence of dialect levelling – 'the reduction in use of regionally marked variants' (ibid., 2014:1) – possibly because of an increase in exposure to lexical variants through the media, and/or a loss of sign language transmission following the closure of deaf residential schools (ibid.:1,12).

Research on new grammatical variables has also been conducted. Some signs in BSL may be spatially modified to indicate verbal arguments (Sutton-Spence & Woll, 1999), and Fenlon, Cormier and Schembri (2014) analyse the factors that predict the spatial modification of directional verbs in BSL.⁴⁶ They find that directionality is not obligatory, and that two factors favour object modification: constructed action, where a signer non-manually re-enacts or embodies a reported action; and co-reference with a previous clause (ibid.). The analyses in chapters 5 and 6 are similar to this and some other Variationist Sociolinguistic studies in Table 2.5, in terms of their focus on grammatical domains and variables.

In this investigation, the notion of the 'social network' is also applied to urban sign communities in order to elucidate the diffusion of variants. Social network theory sits within the Variationist Sociolinguistics paradigm, and was first applied to linguistics by the Milroys in their study of linguistic variables in Belfast (Milroy & Milroy, 1977, 1978). Social networks are 'a boundless

⁴⁶ For example, the movement path of HELP may change to indicate who gives help (the subject) and who receives help (the object). This is accomplished by altering the movement path of the sign to start at a point in the sign space previously associated with the subject, and finish at a point associated with the object.

web of ties which reaches out through a whole society, linking people to one another, however remotely' (Milroy, 2002:550). These networks constitute different types according to the frequency and quality of the interaction that takes place between members (Meyerhoff, 2006:184). Members may be core or peripheral, and networks themselves may be dense or loose, depending upon whether all members know each other (Cheshire, 1982). Social network theory adds to our understanding of how language variation and change may spread through a community. For example, Luraghi (2010) describes how 'innovators' and 'early adopters' of variants can explain the genesis and diffusion of variation.

Social network studies use research methods developed by exponents of social network theory (e.g. Cheshire, 1992; Milroy & Li, 1995; Eckert, 2000; Marshall, 2004), and these methods include collecting data on the networks of each participant. The present investigation is *not* a social network study because these methods have not been used. However, in order to characterise the data, I refer loosely to the social networks of participants in my description of the sample (see 3.3), and in 4.3.3 the notion of the social network is applied to the analysis of different types of diffusion within the sign community. Further, in section 7.1 it is argued that the concept of the social network is crucial for understanding the diffusion of variants within and between sub-communities of Indonesian signers.

2.3.2. Linguistic typology and contrastive linguistics

There are some similarities in the aims of typologists and sociolinguists (see for example the contributions in Kortmann, 2004). The boundaries between cross-linguistic and intra-linguistic variation may be blurred, because the difference between these two kinds of variation can in some cases depend upon the delineation of languages.⁴⁷ That is, two varying features could potentially be regarded as examples of cross-linguistic variation (if they are said to occur in different languages); or of intra-linguistic variation (if they are said to occur in the same language). As Bisang argues:

If the definition of dialect vs. language is based on extra-linguistic social factors, nothing can be predicted concerning the degree of structural variation between dialects, and thus there is no principled reason why to exclude data from dialects into typology (Bisang, 2004:11).

The fine-grained documentation of sign language varieties is utterly essential for linguistic typology, and requires consideration of the various parameters and categories that exist across languages within various domains (Palfreyman, Sagara & Zeshan, in press). Kortmann extols the benefits of judging

⁴⁷ Of course, there are clear-cut cases where a language has distinct origins and/or boundaries, or looks very different from others, as with Kata Kolok (see 1.5).

the observable patterns of cross-dialectal variation for individual grammatical phenomena against generalizations, hierarchies and explanations which have grown out of the study of cross-linguistic variation (Kortmann, 2004:1).

Typologists of spoken and signed languages use techniques such as maps and values tables to compare the distribution of linguistic features across different varieties. One of the advantages of using methods from typology to address the language/dialect delineation question is that, following the heavy focus of lexicostatisticians on the lexicon (2.2), typological methods allow for the focus to shift toward other levels of linguistic organisation, such as phonology, morphology and syntax.

Although the sub-field of typology is distinct from that of contrastive linguistics in the literature, there are similarities. Contrastive linguistics is generally limited to a small number of languages (or subsystems of languages) and aims to identify the similarities and differences that hold between them (Fisiak, 1981; Krzeszowski, 1990). RQ1 positions this investigation as a contrastive analysis, and in chapters 5 and 6 the grammatical expression of the target domain in two varieties is contrasted using a typological perspective. For example, literature on each target domain is reviewed for spoken languages and sign languages (5.1, 6.1) and useful concepts are identified and applied to the data. For spoken languages there is a focus on those that are in contact with the two sign language varieties, since this contact may have shaped certain characteristics of the target domains to some extent.

A further subfield referred to as ‘contrastive sociolinguistics’ (or ‘comparative sociolinguistics’, by Tagliamonte, 2012:162) is defined by Janicki as

providing a systematic juxtaposition of equivalent and non-equivalent sociolinguistic patterns, and ... an analytical framework for the formation of theories of language use (Janicki, 1981:12).

For this investigation to include a contrastive sociolinguistic approach, it would be necessary to conduct a separate sociolinguistic analysis for each variety, and then compare the factors that are found to be significant. This would undoubtedly be illuminating, but unfortunately it is beyond the scope of this thesis, since a much larger number of tokens would be needed for each target domain.

One of the limitations of applying typological methods to variation is that these are not specifically designed to take social factors into account, beyond the region where a given feature occurs. Typologists are usually satisfied if a certain feature is observed to be used by a certain person in a certain place (David Gil, personal communication, 25 April 2012), and it may be difficult for typology to account for particularly ‘messy’ patterns of variation, where variants have a complex distribution within a given sign community. If a single signer is observed using a certain feature in a certain city, it cannot be assumed that this feature is representative of the sign language in that city as a whole. It is here that typology departs from sociolinguistics: the latter may focus on variation within a language community, while the former is concerned with

linguistic features across varieties, regardless of the status of those varieties (Palfreyman, Sagara and Zeshan, in press).

2.3.3. Corpus linguistics

The emergence of corpora is extremely valuable both for sociolinguistics (Baker, 2010a) and for linguistic typology (Palfreyman, Sagara and Zeshan, in press). A language corpus is a body of text carefully sampled to be

maximally representative of the variety under examination, that is, which provides us with as accurate a picture as possible of the tendencies of that variety, including their proportions (McEnery & Wilson, 2001:30).⁴⁸

In addition, a corpus must be of a finite size, and machine-readable (McEnery & Wilson, 2001), which allows for the quick and accurate identification of frequencies and of common and more unusual patterns in the data (Baker, 2010a:9). Sign language corpus linguistics aims

to empirically ground sign language description in usage in order to test previous language-specific or typological claims and generate new observations (Johnston 2014:2).

Corpus linguistics is itself a relatively recent branch of linguistics, since its feasibility is dependent upon the personal computers that became widely available in the 1990s (Baker, 2010a:5). The corpus linguistics branch of sign language studies is even greener, though blossoming as scholars sample its fruits. The corpus-based documentation of sign language has become possible in part due to major technological developments on the representation and maintenance of digital video data (Schembri et al., 2013). A key example is the availability of corpus tools through ELAN software, described in section 3.5.

Written language corpora may be very large indeed, comprising over 100 million words (Baker, 2010a). Comparatively, sign language corpus studies

tend to be based on much smaller datasets [...] due to technological limitations and the lack of (for nearly all signed languages) a comprehensive lexical database (Schembri et al., 2013:8).

Currently, the largest sign language corpus is that of NGT (Crasborn, Zwitserlood & Ros, 2008) which has around 143,500 tokens. Others include the Auslan corpus (Johnston, 2008) and the BSL corpus (Schembri et al., 2011), and corpora for many other sign languages are now being compiled (see the Sign Linguistics Corpora Network at www.ru.nl/slcn for details). Once enough work has been conducted on different corpora, it will be possible to compare the frequency of features cross-linguistically. A very preliminary example of such work is presented in Table 5.1 for completive markers, although more work is needed on individual corpora and on calibrating

⁴⁸ Sampling for the Corpus of Indonesian Sign Language Varieties is discussed further in 3.3.1 and 3.3.3.

annotation practices across teams of corpus linguists before detailed and accurate comparisons can be made.

Palfreyman, Sagara and Zeshan (in press) report that the vast majority of corpora are for urban sign languages in Western countries, with only a few in non-Western areas, including de Vos (2012a). This means that the corpus created for this investigation is an important resource for sign linguistic typology, as well as for the study of Indonesian varieties. While the precise meaning of terms such as ‘corpus-based’ and ‘corpus-driven’ are debated in the literature (Baker, 2010a), the current investigation is perhaps better described as ‘corpus-assisted’ (a term used by Partington, 2006). Although there is extensive quantitative and qualitative analysis of corpus data (see sections 3.1 and 3.3), other forms of data are used alongside this, as described in 3.1.2. The existence of an annotated corpus allows for several kinds of analysis, such as concordancing, collocations, keywords and dispersion (Baker, 2010a). These analyses will undoubtedly be important in future, but the use of the corpus is restricted here to answering the research questions stated in section 1.6.⁴⁹ This entails looking at frequencies and, more generally, at which variants occur for the target variables.

It is important to be aware of the limitations that a corpus has. In particular, complete paradigms of target structures do not always occur, even in large corpora of spontaneous data (Palfreyman, forthcoming). As Johnston (2014b:2) notes:

a corpus can only disprove claims that a phenomenon is categorical, obligatory or even typical; it cannot prove that some phenomenon does not or cannot occur, if such a claim were to have been made.

Additionally, while the analysis of empirical data from real life language use is essential for sociolinguistic studies (3.1.1), target structures in a sign language corpus are rarely straightforward, and the multiplicity of indeterminate contexts may be difficult to analyse (Johnston, 2014a). This is related to another point: the analysis of some contexts in a corpus may be complex enough to require introspection. This becomes especially relevant to the current investigation when dealing with the sub-functions that forms may express, and in section 5.6 it is noted that corpus methods must be supplemented by introspective judgements from deaf Indonesians who are proficient in the varieties in question before the analysis of completives can progress much further. That said, Johnston (2014b:23) suggests that the sociolinguistic situation of signers provides another reason to prioritise sign language corpora. Spoken languages tend to have ‘idealised native speakers’ who can provide judgements that reflect their linguistic competence with some reliability. However, the unique transmission patterns of sign languages,

⁴⁹ Indeed, a keyword analysis of datasets from the two urban varieties currently included in the Corpus of Indonesian Sign Language Varieties, to examine similarities between their relative frequencies, would be highly informative.

and the fact that the vast majority of signers were not exposed to the language from birth (1.3), may call into question the advisability of analyses that are based heavily on introspection alone. The insights afforded by corpora may therefore be even more crucial than for spoken languages.

2.4. Chapter summary

In chapter 2, several important issues are covered, beginning with the notion that a ‘language’ may be regarded as a linguistic and/or social construct (2.1.1). The delineation of languages along linguistic grounds is complicated by the fact that languages and dialects exist along continua, and are used as social constructions: the linguist, the politician and the language user may all have different perspectives motivated by different concerns. The linguistic arguments for delineation have often been considered in terms of mutual intelligibility – a useful concept but, for many reasons, a highly subjective one (2.1.2). In particular, sign languages have often been named with no attention either to mutual intelligibility or to the perspectives of signers themselves; in many cases sign languages have simply been named after the country in which they are found (2.1.3).

Studies that focus on sign language delineation have often surmised that the quantification of linguistic similarities and differences is a suitable proxy for mutual intelligibility, and have usually used lexical comparison. However, with some notable exceptions, these studies have applied – and in many ways, misconstrued – lexicostatistical methods created in the 1950s, while disregarding both internal (socio)linguistic variation and the views of signers. Even though lexicostatistical methods have been discredited by many spoken language linguists, a number of sign linguists have persisted in using them, and very recently these methods have been applied to Indonesia (with predictably conflicting results).

This investigation uses a model which sign language linguists can employ to make inferences that support the delineation process, using conceptual and methodological approaches from Variationist Sociolinguistics (2.3.1) and linguistic typology (2.3.2). The use of a corpus of natural data (2.3.3) supports both approaches, making it possible to identify different variables and quantify the ways in which they are realised. As noted at the beginning of section 2.3, however, neither Variationist Sociolinguistics nor linguistic typology can resolve the delineation question directly. Rather, the findings from this research can be cross-checked with qualitative evidence concerning the perceptions of signers themselves. Only a combination of all methods can provide a sufficient approximation, assuming that the results from different methods support each other. On the one hand, the mutual intelligibility of a (sign) language variety can be inferred from the application of Variationist Sociolinguistics and linguistic typology. On the other hand, the views of sign language users can be discerned with the use of techniques from perceptual dialectology; and identities created by and expressed through language can be assessed. Ultimately, these results can then be ‘offered’ to the sign community for an informed ‘decision’ by its members, according to principles of language ownership (Andersson, 2001; Parmegiani, 2008).

The model shown in Figure 2.6 is an alternative to the predominant lexicostatistical approaches which, while somewhat discredited as a tool for spoken language delineation, have been applied extensively to sign languages (see 2.2). With this in mind, while the proposed delineation model is likely to be familiar to many linguists of spoken languages, this model is innovative when it comes to the study of sign languages, for two reasons. Firstly, Variationist Sociolinguistics and typological analysis have not been applied to sign language research with the aim of making inferences about intelligibility. Secondly, sign language linguists have seldom considered social definitions of sign languages by using perceptual dialectology or by considering the expression of language identity. While it might be helpful to think of linguistic and social definitions of sign languages separately, these various components are not isolated blocks, and linguistic and social definitions of language are not in fact separate entities. Figure 2.6 reflects the interconnected nature and dynamic interaction between the approaches to language delineation discussed here.

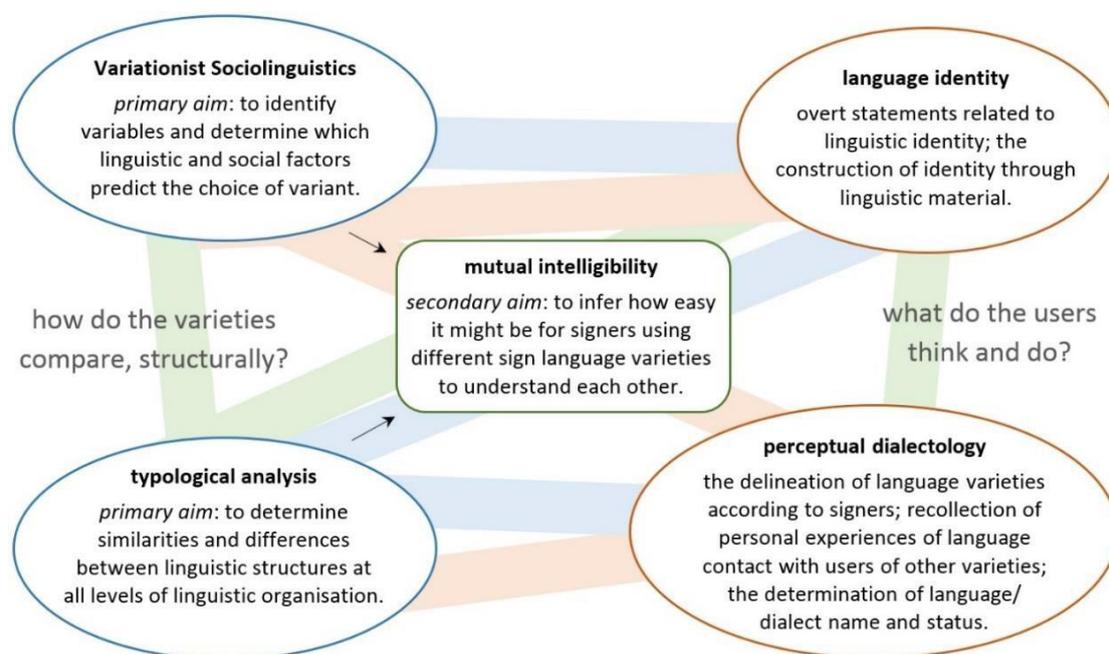


Figure 2.6. A model for investigating linguistic and social definitions of sign language, with a view to empowering users to make informed choices about language delineation.

While the analysis of data on perceptions and linguistic identity lies beyond the scope of the current investigation, in the remainder of section 2.4 I briefly discuss the two ways in which such analysis may be undertaken.

Perceptual dialectology is a branch of sociolinguistics that seeks to collect the attitudes and beliefs held about language varieties by non-linguists (Pearce, 2012). Several techniques have been developed to capture the actual perceptions of language users confronted by variation (Preston, 1999:xxxiv), and to my knowledge, perceptual dialectology has not yet been applied to sign languages. However, its techniques have much to offer to sociolinguists who are striving to uncover how sign language users perceive the differences between individual signers. In particular, perceptual dialectology is known to complement the more objective focus that linguists bring to the comparison of language varieties on structural grounds (Meyerhoff, 2006:65), and

the use of qualitative data can generate insights into intelligibility and variation more generally (Preston, 1989, 1999; Long & Preston, 2002). In January 2013, signers from Solo and Makassar were introduced and filmed in conversation in order to see how similar their varieties are. In post-hoc interviews, they were asked about the perceived degree of difference between the two varieties. These qualitative data, which are currently being analysed, shed light on the two varieties from the perspectives of signers themselves, and the interviews also enabled questions of sociolinguistic identity to be addressed directly.

Several other analytical practices have emerged for examining variation, in contradistinction to the Variationist Sociolinguistics paradigm outlined in 2.3.1. These are framed by Eckert (2000, 2012) as ‘second-wave’ and ‘third-wave’ practices, with Variationist Sociolinguistics as ‘first-wave’ practices. ‘Second-wave’ practices employ an ethnographic methodology and examine correlations between variation and local categories defined by participants (Tagliamonte, 2012:37), while ‘third-wave’ practices have emerged from social constructionism, and are concerned with language users as agents who actively construct their identities through language (Coupland, 2010). Conversely, first-wave practices are based on an essentialist approach, and hold that language use *reflects* macro-social categories such as age, gender, or social class; that is, we possess identities, and these are reflected in the use of language (ibid.).

The corpus of data collected for this investigation is used here to gain an insight into the linguistic structures of each variety, but these data also contain incidental expressions of identity. On these occasions, signers implicitly or explicitly express ideological attitudes about sign languages, and there are instances where they actively use variation as a means of creating identity (Palfreyman, 2014). Analysis of these qualitative data is underway, which – along with the perceptual dialectology analysis – will ultimately reveal a clearer picture of the perspectives of signers themselves concerning the delineation of Indonesian sign language varieties.

CHAPTER 3

METHOD AND RESEARCH DESIGN.

Chapter 3 is concerned with the method that is used to conduct the investigation presented in chapters 4 to 6. In particular, it is necessary to limit the focus of (socio)linguistic analysis both geographically and theoretically, and decisions concerning the selection of fieldsites and target domains are explained and justified in this chapter. Following on from the methodological discussion in chapter 2, I begin by explaining the conceptual and empirical frameworks in which the research takes place (3.1). The four types of data used are then discussed, along with the motivation for the choice of Solo and Makassar as fieldsites (3.2). Section 3.3 presents details of the collection of linguistic data, and the identification of variables and variants in the target domains is deliberated in section 3.4. The transcription and analysis of linguistic data are dealt with in sections 3.5 and 3.6 respectively. The chapter concludes with discussion of a topic that is of crucial importance: the ethical considerations that have been central to the research design and implementation of the investigation (3.7).

3.1. Conceptual and empirical framework

3.1.1. Conceptual and methodological approaches

The research questions for this investigation (section 1.6) require the use of multiple perspectives, and this thesis is located at the intersection of two academic sub-fields of linguistics – typology and sociolinguistics. This theoretical orientation is motivated by the need to adopt a holistic view of language: as one of the most complex phenomena known to humankind, language cannot be best described solely within the confines of any one field (Shuy, 1981; Searle, 2007). While it is true that all approaches have shortcomings, and that there is little benefit in using an overwhelming number of different approaches, it is a central contention of this thesis that reference to notions from several disciplines can offer useful insights into the sign language varieties of urban sub-communities across Indonesia.

Just as linguistic perspectives alone cannot shed light upon the social meaning of language, nor can sociolinguistics function without reference to linguistics, and sociolinguists must rely upon a rigorous knowledge of linguistic theory in order to uncover the ways in which a language is being used (Tagliamonte, 2012). The overlap that exists between linguistics and sociolinguistics is exploited in this investigation to understand how signers use language. Since the varieties of Solo and Makassar have hitherto been undocumented, chapters 5 and 6 begin with analysis of constructions in two grammatical domains according to a corpus-assisted, typological approach. Once the range of lexical and grammatical expressions has been analysed, and linguistic variables identified, I turn to consider sociolinguistic factors that motivate the realisation of variables.

The research design for this investigation can be characterised in three ways: it is empirical, inductive, and exemplifies the use of mixed methods (that is, both qualitative and quantitative methods). For reasons induced by the research questions (1.6), an empirical approach is taken, since this allows linguists

to make statements which are objective and based on language as it really is rather than statements which are subjective and based upon the individual's own internalised cognitive perception of the language (McEnery & Wilson, 2001:103).

That some subjectivity remains is not in doubt – see 3.1.2 on interpretative frameworks – but analytical practices that are rooted in real language data offer a degree of objectivity not afforded to analyses that rest upon introspection alone. Specifically, McEnery and Wilson (2001:103) note that empirical data allow for the study of varieties of language such as dialects, ‘for which it may not be possible to use a rationalist approach’. Such empirical approaches are clearly well-suited for an analysis that is focused on documenting and explaining sociolinguistic variation.

This analysis is primarily inductive, using a data-driven approach that starts from observations of patterns in the data and moves on to the formulation of hypotheses, ultimately arriving at broader generalisations and theories (Larsen-Freeman & Long, 1991). For example, the analyses presented in chapters 5 and 6 begin with observations made during the process of transcribing the data, on how completion and negation are expressed grammatically in the corpus data. This leads to the identification of variables, and the testing of different hypotheses concerning the linguistic and social factors that affect the realisation of these variables. By the end of this process it is possible to draw conclusions not only about the target domains, but also about sign language variation in Indonesia more generally – yet this process began with the data, and was underpinned throughout by qualitative and quantitative analysis.

Mixed methods are employed in many areas of social research (Sandelowski, 2000a; Bryman, 2006; Angouri, 2010), and the analysis of sociolinguistic variation in the literature often draws upon qualitative and quantitative methods, although the particular mix may depend upon which research practices are used. For example, using Eckert's classification to categorise the analytical practices that have been used by sociolinguists (see 2.4), the first wave is primarily concerned with quantitative methods, exemplified by Labov (1963) and Trudgill (1974). On the other hand, qualitative methods also have considerable value (Sandelowski, 2000b), and second and third wave practices employ qualitative methods such as ethnographic description and text-based analysis (e.g. Eckert, 2000; Finnis, 2013). From a sociolinguistic perspective, therefore, this investigation is not unusual in incorporating both quantitative and qualitative methods.

Quantitative methods that are used to answer RQ1 and RQ2 include the distribution of the variable – highlighting the frequency of the variants by which a variable is expressed – and the cross-tabulation of dependent variables with possible independent variables. Through the use of these techniques, patterns in the data become apparent (Tagliamonte, 2012:121). Multivariate analysis

enables the detection of imperceptible patterns, and establishes the influence that different factor groups have on the realisation of the variable by applying a standard cross-disciplinary measure of statistical significance (see 3.6 for further details of the multivariate techniques that have been used).

Qualitative methods are used both to document the target domains and in a complementary fashion at several stages of quantitative analysis for RQ1 and RQ2. This includes the identification, interpretation, and coding of variable contexts; and the substantiation of the arguments that accompany the discussion of quantitative findings – in 5.4 and 5.5.3, for example. In addition, RQ3 can be answered only by making qualitative links between the sociohistorical evidence presented in chapter 4, and the findings presented in chapters 5 and 6.

The use of language reflects both the social situation and the period of time in which it is used (Tagliamonte, 2012:6), and this particular epistemological view of language in social context is one of the essential precepts for this investigation. In particular, these differences can be observed at different levels of social organisation. As a starting point, the phonological, lexical and morphosyntactic realisation of certain variables of one and the same individual may shift, for example, according to social situation (Tagliamonte, 2012:34). Then there are differences between individuals. Zgusta (1971:164) notes that

if we observe language very minutely, we shall see that no two persons, even if they are speakers of the same language, speak it in an absolutely identical way.

Many studies show that variants may differ according to social groups, as discussed in section 2.3.1. Finally, typologists identify variation between languages, where different notions are expressed variably at the lexical or grammatical level (2.3.2).

Accordingly, sociolinguists may investigate variation at different levels of social organisation – from idiolectal differences to cross-linguistic ones. In a paper on ‘dialectal flexibility’ in African sign languages, Serpell and Mbewe offer the following thoughts on the division between idiolect and dialect:

The notion of an ‘idiolect’ recognizes that the linguistic usage of each individual speaker (or signer) has unique characteristics that are tolerated by his or her audience and indeed used by them as a basis for discriminating his or her utterances from those of others. A ‘dialect’, on the other hand, specifies a distinctive subset of usage features shared by speakers who also share some other social characteristics such as geographical residence (a local dialect), ethnicity (a tribal dialect), class membership, etc. (Serpell & Mbewe, 1990:276).

The neo-Kantian philosopher Wilhelm Windelband marked a distinction between two different kinds of methodological tendencies: nomothetic approaches seek to generalise and identify patterns, and idiographic approaches seek to specify and consider the world in terms of individual perspectives (Thomae, 1999). The social sciences, including linguistics, have been influenced by both, and theories and analytical frameworks used by the many branches of linguistics exist on a

continuum between the two. To adopt a metaphor used by Szmrecsanyi (2014:89), it is possible to look at forests, or at individual trees, or both.

The tension between idiographic and nomothetic perspectives can be seen by comparing the methods used in chapter 5 to analyse variation in the grammatical domain of completion. Idiolectal differences are recognised in the way that signers may express completion in different ways during the same stretch of data, while macro-social categories such as ‘region’ and ‘gender’ are used to draw conclusions that inform a contrastive analysis of two entire urban sign language varieties. Far from being problematic, this creative tension allows for variation at the level of the individual to be acknowledged, while reaching conclusions at the level of the urban sign language variety that have a general application.

3.1.2. Empirical data and data interpretation

Before moving on to discuss the data that have been collected in order to conduct this investigation, it is necessary to delineate the interpretive framework within which decisions concerning the research design are made, and data are analysed. This is particularly so given that the fieldsites for the investigation are located in a different country, and the culture of the target communities is distinct from my own. Branson and Miller (2004:15) argue that foreign academics have a tendency to

bring with them a large amount of cultural baggage, an epistemological orientation, and cosmological premises that redefine the world in a Western image.

Further, they suggest that, previously, the condition of the Indonesian deaf community has deteriorated as a result of external input. In response to this, I seek to acknowledge both the internal and external sources of knowledge that shape the interpretive framework of this investigation.

Several internal sources are relevant. First, my knowledge of deaf culture and sign language, as a deaf sign language user, shape this investigation in many ways. Having observed the ways in which language documentation has improved the situation of deaf people in the UK, I am keenly aware of the need for such documentation, and the ethical considerations presented in 3.7 are a reflection of my views of the way in which such documentation should be conducted. Secondly, as a fluent user of BSL with knowledge of other sign languages, I am able to make recourse to introspection when analysing sign language data, in the same way that spoken language linguists – consciously or not – use their understanding of one or more spoken languages (Talmy, 2007). I also acknowledge and refer to my own identities, as a deaf sign language researcher, and as a user of spoken languages, when considering questions of language identity.

Thirdly, I rely upon linguistic and cultural knowledge acquired during my time as a volunteer working with Indonesian deaf communities for two years from 2007, which includes my proficiency in Indonesian sign language varieties. I have regarded this knowledge as both useful

and incomplete, to which further knowledge and insights must be added, and misconceptions supplanted – for example, through observation during the course of fieldwork. As a means of facilitating this process, I have kept a field diary, which has been used as a methodological tool to capture observations and reflections on data collection and transcription. The use of such a diary incorporates elements of linguistic ethnography, which includes ‘interpretive approaches from within anthropology, applied linguistics and sociology’ (Creese, 2008:229).

External sources of knowledge have been acquired and developed through several means, the most important of which has been an ongoing dialogue with my three research consultants, Muhammad Isnaini, Jayeng Pranoto, and Oktaviani Wulansari. The research design was created and revised continually in light of discussions with the three consultants, who have been an invaluable source of ideas, feedback and constructive criticism. In particular, the use of a reflective transcription process (see 3.5) has prompted many questions, insights and observations, and many hypotheses have been explored and developed further – or rejected – through discussion with research consultants. Another important external source of knowledge is the academic community. Engagement with this community has been facilitated through the presentation of different parts of this thesis at conferences, and through my own network of academic contacts, which includes my supervisors and peers (see the Acknowledgments for further details).

In line with the approaches described in 3.1.1, and in order to meet the aims of the investigation as expressed through the research questions (1.6), four types of data have been collected: spontaneous linguistic data; elicited linguistic data; sociohistorical data; and metadata. The bulk of the analysis for this investigation, presented in chapters 5 and 6, are based on the analysis of spontaneous data, and with that in mind, most of chapter 3 is concerned with the collection and analysis of those data. An overview of the four types of data is given below.

i) Spontaneous linguistic data

Most of the Corpus of Indonesian Sign Language Varieties (CISLV) comprises spontaneous data, where informants are filmed in dyads, triads or tetrads discussing topics that occur naturally. These data were used to gain an insight into the linguistic structures of each variety.

ii) Elicited linguistic data

Some of the data in the CISLV have been elicited, notably for target domains where whole paradigms do not occur in spontaneous conversation. In particular, data have been collected for the semantic domains of numerals and colour terms. For these domains, data were elicited using games devised as part of the Sign Linguistic typology Project (2010-2014) conducted by the

iSLanDS Institute (Zeshan & Sagara, forthcoming).⁵⁰ Findings from the analysis of these data have been written up separately for numerals and colour terms (Palfreyman, forthcoming) and are referred to as appropriate in chapter 4.

The corpus includes another kind of elicited data. A 53-minute session was conducted where three Solonese signers reflected on mouth gestures that they routinely use. The decision to do this was made after it became apparent that some informants were not using mouth gestures as freely as they usually do when not being filmed (see section 3.3 on the Observer's Paradox). The mouth gestures data are part of the CISLV, but are not central to the investigation presented in this thesis, and so these data are not described further here. It is intended that further research will be conducted in the future using this dataset.

iii) Sociohistorical data

In addition to the collection of linguistic data and metadata, sociohistorical data have also been collected, with a view to documenting the historic development of the Indonesian sign community. This is the central concern of chapter 4, and the findings presented in that chapter inform the answer to RQ3, which makes a link between sociolinguistic findings and the history of language contact between sub-communities across Indonesia. The sociohistorical sources that have been used for this analysis are introduced in section 4.1.

iv) Metadata

The collection of metadata, or 'structured data about data' (Duval et al., 2002), is necessary if linguistic data are to have sociolinguistic value; linguistic data alone precludes the possibility of conducting sociolinguistic research, and Burnard (2004:5) argues that

the social context ... within which each of the language samples making up a corpus was produced or received is arguably at least as significant as any of its intrinsic linguistic properties – if indeed the two can be entirely distinguished.

Descriptive metadata were collected systematically from all informants through interviews covering details of their upbringing and sociolinguistic background. This includes the following:

- name
- sex
- age
- place of birth
- school(s) attended
- other parts of Indonesia where they have lived or visited
- details of any other deaf family members
- current employment
- deaf organisational membership

The main reason for collecting metadata by means of an interview rather than in written form was to obviate the need for signers to engage with text, given that many signers have a low level of

⁵⁰ See www.uclan.ac.uk/research/explore/projects/sign_language_typology.php for further information (accessed 12 June 2014).

literacy skills. Some interviews were conducted on film – which provided additional linguistic data, as informants responded to questions freely – but in Makassar it became necessary to record metadata directly into a computer file due to the large numbers of informants who came forward.

The metadata have been used in several ways. First, once a signer's background was known in full, it was possible to exclude from analysis those texts produced by signers who had recently moved into the region in question – Solo, or Makassar – on the grounds that these data are unlikely to be representative of that area. Secondly, metadata were used in order to select texts for transcription and annotation, ensuring that the resulting sample is as balanced as possible (see 3.3.3). Thirdly, the metadata enable the inclusion of social factor groups in the quantitative analyses presented in chapters 5 and 6, where the possibility of a correlation between dependent linguistic variables and independent social variables is investigated.

More generally, descriptive metadata enable a researcher to build up a picture of the community of informants. For example, the metadata show that none of the Makassarese informants have deaf parents, but that 10 out of 20 have one or more deaf siblings. It is also clear from the metadata that most of the Makassarese informants attended one of two schools, in Cendrawasih and Pembina. Crucially, the collection and storage of metadata alongside linguistic data makes it possible to pursue other lines of enquiry in future. Further details based on the metadata are given in sections 3.3 and 3.5.

3.2. Fieldsites and fieldtrips

The choice of the right field-site is crucial for effective research (Bower, 2007), and requires careful justification. In particular, the selection of a second fieldsite with which to compare the first was made only after deliberation, in order to substantiate and optimise the element of contrastive analysis. The two urban sign language varieties were chosen on the basis of four criteria. First, it was necessary to choose field-sites where the sign language variety is thriving, and used by a well-connected urban sign community, in order to ensure as far as possible that there would be enough informants from which to choose and, importantly, that the sign language variety is used regularly by older and younger signers in a variety of settings.

Secondly, the communities had to include signers who use indigenous signs. The introduction of signs from ASL and from SIBI have had a stronger influence on some sign communities than others (4.4.1). Research is needed on this, but while the right of signers to use whichever signs they wish is fully respected, an analysis that compared signers in different regions who largely use signs borrowed comparatively recently from the same source – SIBI – would produce misleading conclusions.

The third criterion is that the sign communities in each location are willing and able to support the researcher, and in a position to benefit from the research. It is not necessary for signers to have

an understanding of linguistics, but it is important that a handful of signers are willing to help the researcher find potential informants, and identify a suitable location in which data can be collected. In order to benefit from the research, it is preferable that a sign community is already active in other ways, and shows commitment to improving access for deaf sign language users. While this criterion may not be important for all researchers, it was a crucial consideration for this investigation (see section 3.7).

Finally, to increase the chances of an informative analysis, the varieties must be considered maximally distinct by members of the sign community. While it is useful to know which varieties are regarded as similar by signers who have encountered more than one variety, there is relatively less value in comparing two such varieties. At the outset of this investigation, given what little was known about the similarities between varieties, it was considered more desirable to choose varieties that are reported by signers to be distinct from each other.

Solo was a logical first field-site because I already had a strong working relationship with sign community members, having worked with them as a volunteer prior to the onset of this research. On the basis of my observations from 2007 until 2009, it was clear that the sign language community in Solo is active, well-connected, and able to support a visiting researcher. Further, Gerkatin Solo had started to advocate for the rights of its members to use sign language, and in an interview, its board members expressed an understanding of the need for research (3.7.3).

The choice of a second field-site was taken in July 2011 following my acquaintance with members of the Makassar sign community.⁵¹ Prior to this, two members of the national board of Gerkatin in Jakarta, who have visited regional boards in several provinces across Indonesia, suggested that Makassar would be a good choice on the basis that the sign language variety used there was ‘different’ from varieties used in Java. This suggested that the Makassar sign language variety would meet the fourth criterion (the ‘maximally distinct’ criterion outlined above). A brief interview with a sign community leader from Makassar at the 2011 Gerkatin Congress suggested that there are lexical differences with Javanese varieties in some semantic domains. On visiting the Makassar sign communities in July 2011, I was able to confirm that the sign community is thriving, with plenty of potential informants, and members who use what seemed to be a robust indigenous variety. Furthermore, the sign community was able to support my research, and showed signs of wanting to become more active in terms of applied linguistics.

There were three other compelling reasons to suggest that the Solo and Makassar varieties are particularly suitable for a contrastive analysis. First, there were no ties between the two sign

⁵¹ I met sign language users in Jakarta, Bali and NTT between 2007 and 2009. Banjarmasin was considered, on the basis that the sign community in Jakarta had comparatively little contact with Banjarmasin signers. Manado was also considered, but signers there appeared to use comparatively more signs from SIBI.

communities at the outset of the investigation. The only known example of direct contact is a deaf Makassarese woman whose husband came from Solo. Secondly, deaf schools were established in each city at about the same time (1958 in Makassar, and 1960 in Solo – see section 4.2). This does not mean that the time depth of each variety is the same, but it does confirm that successive cohorts of deaf children have gathered together and had the *opportunity* to use sign language in each city for at least 50 years. Thirdly, while some signers in each city use variants that originate from SIBI/ASL, a few signers also have a strong sense of the signs that originate from their own city, and referred without prompting to certain variants as being ‘the Solo sign’ or ‘the Makassar sign’ respectively. This was not taken as implying that only one sign is used for a given concept in each city, but that these signers know of variants that have been used in their city for longer than other, more recent variants, which indicates that these varieties are relatively vital. The location of the two fieldsites can be seen in Figure 3.1.

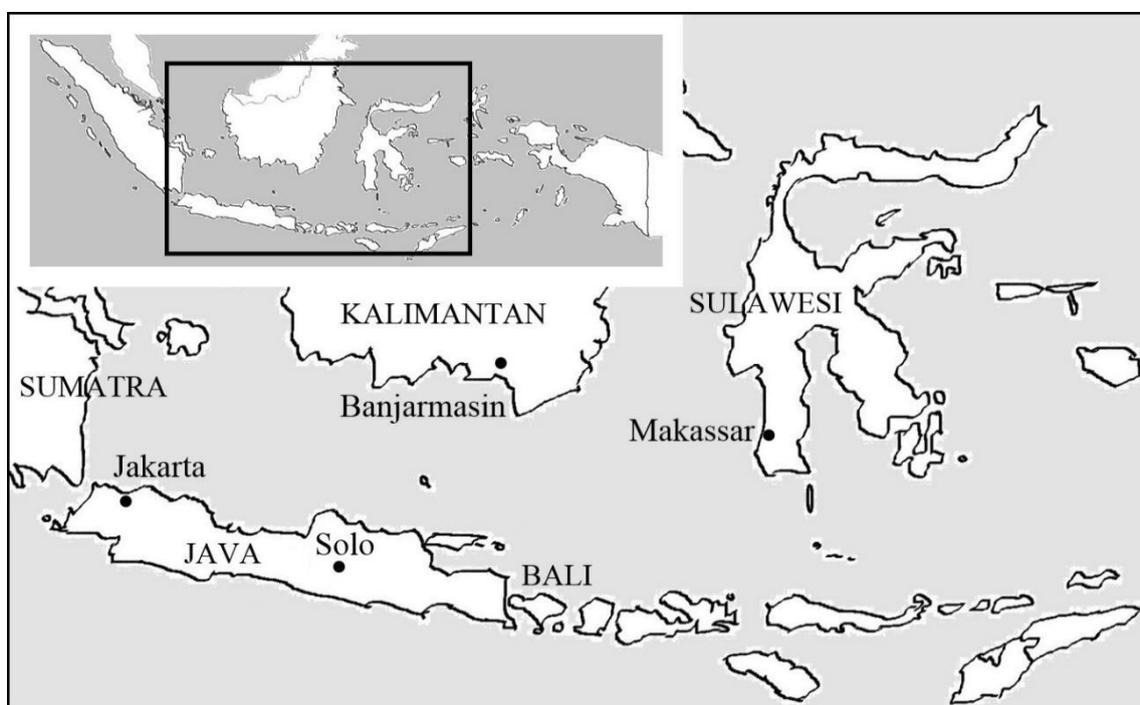


Figure 3.1. A map showing the location of the two fieldsites, Solo and Makassar.

Five fieldtrips have been made during the course of this investigation (that is, between April 2010 and September 2014). Data collection took place on the first three trips. Later fieldtrips were primarily undertaken to continue supporting sign community members in Jakarta, Solo and Makassar (section 3.7) – thereby maintaining a strong relationship with them – although these trips also presented an opportunity to check details, elicit further examples, test hypotheses and begin to disseminate findings informally. Details of each fieldtrip – including the duration, locations visited and activities conducted – are presented in Table 3.1. The fieldtrips were actively

Table 3.1. Fieldtrips, locations and activities.

fieldtrip	locations and activities
fieldtrip 1 October 2010 (eight weeks)	Solo Spontaneous data collection and glossing (with Gerkatin Solo)
	Jakarta Discussion with the national board of Gerkatin Meetings at the University of Indonesia Presentation to Gerkatin DKI Jakarta on sign language linguistics
	Banjarmasin Visit to Banjarmasin in Kalimantan – possible second fieldsite
	<hr/>
fieldtrip 2 June 2011 (11 weeks)	Malang Presentation at International Symposium on Languages of Java (ISLOJ)
	Jakarta Application for Research Permit and associated documentation Gerkatin Congress VIII (sociohistorical interviews, archive search)
	Bandung and Wonosobo Visits to the earliest deaf schools founded in Indonesia
	Makassar Collection of spontaneous data, and glossing
	Manado Sociohistorical interviews, observation (comparison with Makassar)
	Solo Further glossing and data elicitation on numerals and colour terms
fieldtrip 3 January 2013 (three weeks)	Jakarta Catch-up meeting with the national board of Gerkatin Participation in a meeting about deaf education
	Solo Activities with Gerkatin Solo and hearing volunteers Further data transcription work
	Makassar (with two deaf research consultants) Recording of language contact data, further data transcription Meeting with staff at the State University of Makassar (UNM)
	<hr/>
	Bali Presentation at Gerkatin's RaKerNas (national work meeting) and funding/planning meetings with Gerkatin
fieldtrip 4 September 2013 (two weeks)	Solo Presentation to students at the UNM Sharing findings with research consultants/follow-up on analysis
	Jakarta Planning for DRF-funded project on organisational development
	<hr/>
fieldtrip 5 May 2014 (three weeks)	Solo Hub development workshop Informal sign language teacher training
	Makassar Presentation of findings to staff and students at the UNM Sign language teacher training and evaluation
	Jakarta Two-day workshop on organisational development Visit to staff at the newly-established Sign Language Research Team
	<hr/>

planned to include both (socio)linguistic research activities and other community capacity-building and networking activities. Further details of the partnerships that have been developed during this investigation, and the benefits for each community, are provided in section 3.7 on ethical considerations.

3.3. Linguistic data collection and sampling

The process of collecting, transcribing, annotating and analysing linguistic data, which is described in sections 3.3 to 3.6, is shown schematically in Figure 3.2.

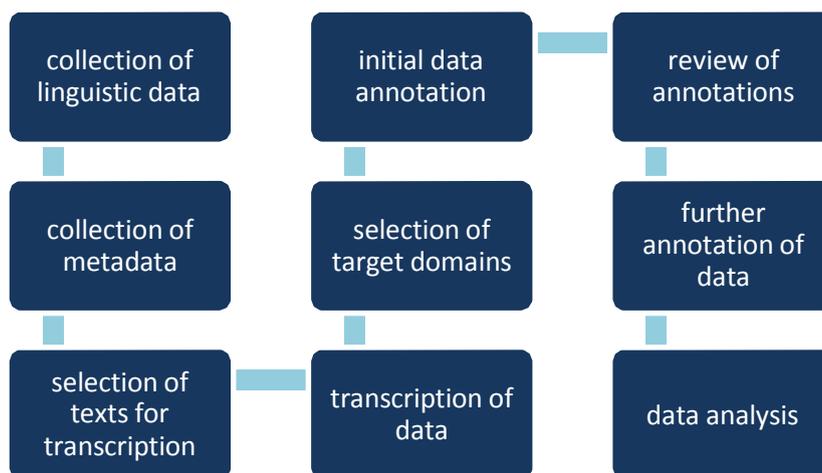


Figure 3.2. The process of data collection, glossing, transcription and analysis.

The sampling method entailed two steps – convenience sampling, and then balanced sampling. To do this, a large amount of raw data were collected from a diverse group of informants; a sample balanced for region, age and sex was then created by selecting texts for transcription (Figure 3.3).

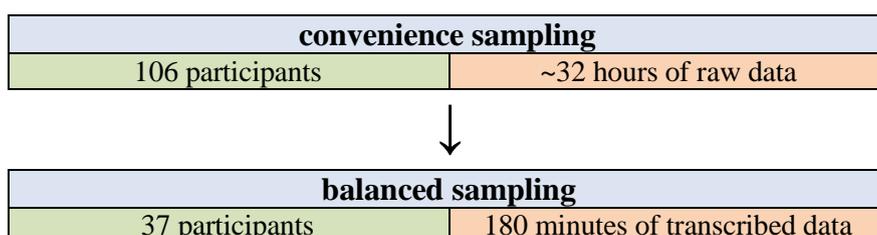


Figure 3.3. The two-step sampling method.

This method of sampling is motivated by three concerns. The first is to exclude from analysis any data where the underlying grammar is effectively that of a spoken language (see 3.3.2 for an explanation of how this was determined). The second is to create a sample that is broadly balanced for the region, age and sex of the signer (3.3.3). Thirdly, creating a balanced sample at a later stage means that, in the field, the data collection process can be dictated by practical and ethical considerations, including the principle that nobody should be excluded from being filmed (3.7.2).

3.3.1. Convenience sampling

Many empirical studies of sign languages have something to say about the use of ‘native’ signers. Informants may be referred to as ‘native signers’ who acquired a sign language from deaf, signing parents (Schembri & Johnston, 2013:517), or ‘near native early learners’ (Johnston, 2008a) who acquired sign language from a young age, usually around six or seven years old (ibid.:9; Stamp, 2013:53). The justification for this is the notion that ‘the object of study, language, is manifest in its most natural state in the language production of a native speaker’ (Costello, Fernández & Landa, 2008:78). For neurolinguistic research, for example, findings may be highly sensitive to the age of language acquisition, and so neurolinguists may choose only those who learned sign language from signing parents in order to reduce the effects of those with a later age of acquisition (for example, MacSweeney et al., 2002; Petitto et al., 2000).

There are two practical problems with applying the notion of ‘nativeness’ to the Indonesian data. First, the proportion of sign language users who have deaf parents seems to be lower than in countries such as the US and UK (see 1.3). Secondly, sign language users generally have a hazy recollection of when they were first exposed to sign language. Such difficulties have been recognised by some other linguists, such as Costello, Fernández and Landa (2008). For the object of their study – the sign language variety used in the Basque Country – it is debatable whether there are any native users at all:

at best we have a few second generation signers who learnt their sign language from birth, from their non-native parents (Costello, Fernández & Landa, 2008:84).

Apart from these practical problems, there are also theoretical reasons to question the suitability of using only ‘native’ signers for a sociolinguistic study. What, to a neurolinguist, is an informant with a late age of acquisition who produces data that are ‘anomalous’, should be of great interest to a sociolinguist. Given that the majority of Indonesian sign community members have hearing parents and have not acquired sign language at a very early age, it does not seem representative of the population as a whole if the sample is restricted to only ‘native’ signers. For studies that seek to examine the informant’s age of acquisition, or the hearing status of their parents, as factors that may influence the occurrence of variation, it is necessary to select informants accordingly. For the current study, however, decisions as to which data to include in the analysis were usually taken based on the data, rather than the informants. Only if an informant had spent prolonged periods of time elsewhere (3.1.5(v)) were data excluded on the basis of the informant.

For the convenience sampling stage, potential informants in Solo were identified with the assistance of my three deaf research consultants, Jayeng Pranoto, Muhammad Isnaini Nur Hidayat (aged in their mid-30s at the time of data collection), and Oktaviani Wulansari (in her early 20s). Jayeng was chair of the deaf association, Gerkatina Solo, and the others were members of the board, which meant that they had an extensive network of potential informants on which to draw.

They were asked to recommend people that they thought would be appropriate for filming. As time went on, it became clear that few older signers had been filmed, and so these signers were contacted to see if they were interested in being involved in the project. Conversational data were collected at the site of an office complex that Gerkatin Solo was using at the time (Figure 3.4) or, when it was more convenient for the informants, in their homes.



Figure 3.4. A screenshot from data collected in Solo, showing Oktaviani, Desy and Jayeng in conversation.

In Makassar, the initial contact person was Haji Ramlah, the chair of Gerkatin South Sulawesi, who I had met in Jakarta a few weeks previously.⁵² Ramlah and a few of her colleagues were shown a short section of data from Solo, in order to give a concrete, easily-understandable example of what ‘data collection’ entails. They were then asked to suggest appropriate people for filming. Many deaf people were curious about the data collection activities, and news of the research spread through the community, with many people coming to take part. Data were collected on the first floor above the donut café that Ramlah runs, which serves as the social base of Gerkatin South Sulawesi (Figure 3.5).



Figure 3.5. A screenshot from data collected in Makassar, showing Judi, Wana and Bima in conversation.

⁵² As explained in 3.7.2, if they have given permission to do so, individuals are referred to by name, rather than anonymised, in order to recognise their contribution to the research.

Overall, spontaneous data were collected from 106 informants in the two cities, totalling around 32 hours. The number of Makassarese informants is larger because deaf people continued to show up at the venue where data were being recorded.

Informants have been identified through a single deaf organisation in each city, and so it is important to ask how far these data represent the sign language varieties of Makassar and Solo as a whole. Undoubtedly, the dataset is not as representative as it could be. For example, there is at least one other deaf association in Indonesia besides Gerkatin. One such organisation, *Persatuan Tuna Rungu Indonesia* ('Indonesian Deaf Association') or *Pertri*₂ has branches in several Indonesian cities, including Makassar. Members of the Makassarese branch of *Pertri* were neither expressly invited nor excluded from taking part in data collection, but few of its members took part in data collection due to rivalry between the two organisations. Similarly, it was difficult to find older signers from whom to collect data, seemingly for three reasons. The pool of older deaf people who are fluent sign language users is smaller, older deaf people belong to different social networks that were harder to locate, and some older people are perhaps more suspicious of video cameras, laptops and the like. Consequently, the convenience sample for each city is slightly skewed towards younger signers.

These kinds of issues mean that the data are not representative of all social groups of sign language users in each city, but this is in any case inevitable. While recognising that these data do not represent each variety in their totality, it is possible to find shortcomings for almost any sample. It is argued that valid inferences can still be made from the data, for the following reasons. First, the size of the convenience sample – 63 active members of the sign community in Makassar, and 43 in Solo – means that individuals from many different places and backgrounds within each city are represented. Secondly, the creation of a smaller balanced sample from the convenience sample can mitigate bias in the latter. Finally, any variation found in the sample can be taken as a *minimal* indication of variation that exists in each sign community as a whole.

3.3.2. The selection of spontaneous, natural texts

Linguistic data were collected using a hand-held Canon Legria HV40 Mini-DV Video Camera, and a mini tripod that was no taller than 30cm when fully extended. As well as being easier to carry, the small size of the equipment helped to limit as far as possible any intimidating effects that it may have had on informants. All cassette tapes were immediately labelled clearly after filming, and stored securely both in the field and at the university. A catalogue was created to log the content of each tape, including the location of filming, the names of participants and the length of the clip.

In most cases, participants were asked to talk among themselves about anything they wanted. Sometimes, especially when visiting an informant's house, one of the research consultants took

on a prompting role, to keep the conversation going. The initial request made of informants to sign in front of a video camera was a novel one, and generated a range of responses: some informants became engaged in animated conversation more or less immediately, while a few formally introduced themselves to the camera, and one triad had prepared a scripted conversation. The effects of being formally observed on the nature of the data collected – referred to as the Observer’s Paradox (Labov, 1971) – are well-known, and have been noted by many linguists (Preston, 1996; Cukor-Avila, 2000; Tagliamonte, 2006, 2012; Gordon, 2013). In addition, the situation was judged by some SL users to be formal, which led to data with more hyper-correction and features from the grammar of Indonesian.

In a bid to try and reduce the effects of the Observer’s Paradox, a range of techniques were used. After placing the participants and starting the filming, I showed no interest in watching the informants, and engaged any other people in the area in a separate conversation some way away, to prevent them from ‘watching’ those being filmed. Informants were encouraged to chat freely, since early attempts to prescribe a particular topic evoked additional expectations that made informants stilted and unsure of what they had to say. Thirdly, triads and tetrads were used in addition to dyads, in accordance with advice from Dikyuva (2011), who collected data from TID signers:

group activities involving three or more participants were found to be far more effective in realising natural data that includes a fuller range of non-manual expressions, as these situations were more typical of situations in which Deaf people frequently interact, and drew attention away from the presence of the camera (Dikyuva, 2011:54).

Finally, as explained above, not all filmed texts produced by the convenience sample were selected for transcription, and this meant that examples of more ‘natural’ discourse could be selected.

As explained in section 1.2.1, the language that signers use may be strongly influenced by the grammar of a spoken language – in this case Indonesian – but this is a continuum feature, and it is not possible to measure how far a text diverges from sign language grammar. In order to determine whether a text should be included in the data analysis, I looked at the mouthings that a signer uses in that text. Mouthing is exhibited by all signers to some extent, but if a text includes a signer who is speaking or mouthing entire sentences in Indonesian and ‘adding’ signs to this – so that, without the manual component, the utterance would still be grammatical in Indonesian – the text was excluded.

Further to this, in order to identify texts that comprise data that are more natural, and hence most suitable for transcription, I created a list of features that appear to typify ‘natural’ and ‘unnatural’ discourse, based on observation of the data. Many of these features are indications of how at ease or how nervous the informants are, which has a strong influence on the naturalness of the language that they produce (Trask, 2007:83). Features of ‘unnatural’ discourse include informants signing

more slowly than they do off camera; informants signing *at* the camera; and regular, obvious examples of self-correction. In addition, instances where informants ask each other questions to which they already know the answers tend to occur in sections of text that are stilted. Texts that exhibit these features were not deemed suitable for analysis.

Conversely, there are plenty of indications that discourse is more ‘natural’ and hence suitable for analysis. These include natural turn-taking strategies and discourse features such as interruptions, requests for clarification, use of interjections, and so on. Informants who do not show an awareness of the passing of time tended to be more involved in the conversation, and hence use more natural language. Inevitably, after a period of time, some informants became tired or bored, but the most natural conversations went on for over 15 minutes, and some of the more animated conversations exceeded 30 minutes. In contrast, more ‘unnatural’ conversations could last for just three minutes, after which typically one informant would announce that the exercise had ended. Another indication that discourse is more ‘natural’ is the occurrence of animated behaviour, where informants engage in heated debates – and even throw a cushion at their interlocutor in mock umbrage. The use of humour is another valuable indicator that participants are at ease and using language naturally.

It was not always possible to know in advance whether the members of a dyad, triad or tetrad were great friends who would engage in playful conversation, relatively unknown to each other, or somewhere in between. I take the view that all eventualities are of value, but in future it would be useful to have a more accurate idea of the relationship between informants who are filmed together, simply to control for this more, and perhaps include it as a factor in sociolinguistic variation if appropriate. There is also a mix of informants of different sexes and ages. Generally, informants came forward as same-sex groups, although a few texts feature informants of mixed sex, such as M-F and F-F-M.

3.3.3. Balanced sampling and the selection of texts

The selection of texts and the creation of a balanced sample went hand-in-hand. From the 32 hours of raw data in the convenience sample, short sections of between two and 10 minutes in length were selected, in the field, for transcription. Altogether, 90 minutes of data were selected for each sign language variety. Some texts were excluded for reasons outlined in section 3.3.2; apart from this, texts were selected randomly. Meanwhile, a sample stratification was kept to show the number of informants included in selected texts according to region, age and sex. Once 180 minutes of data had been transcribed, the balanced sample contained 37 informants, and the sample stratification is shown in Figure 3.6. Although the statistical software that is used for quantitative analysis is capable of dealing with imbalances between social categories in the sample (see 3.6), the use of a broadly balanced sample makes the data analysis more robust (Tagliamonte, 2006).

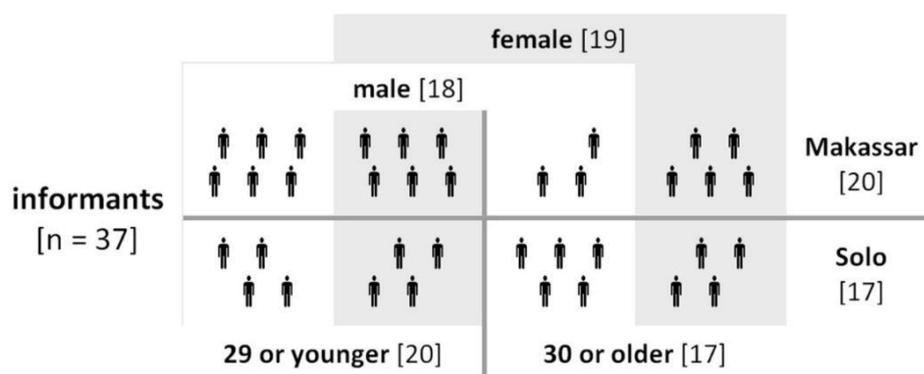


Figure 3.6. A stratification of the balanced sample for region, age and sex.

The need to retain a balance for region is motivated by the central aim of contrasting the sign language varieties of Makassar and Solo (see 3.2). Sign languages have been reported to vary along gender lines in some respects (Lucas, Bayley and Valli, 2001; Zeshan, 2001; Leeson and Grehan, 2004), and there is ample evidence to suggest that, as with spoken languages, linguistic variables may correlate with the sex of the language user. Using similar numbers of female and male signers not only helps to prevent any gender effects from skewing the data *per se*, but also enables the sex of the signer to be included as a potential factor to see if it predicts the realisation of the variables explored in chapters 5 and 6.

Age can also be a significant factor in sociolinguistics, not least because it can indicate diachronic language change (Labov, 1994). Schembri, Johnston and Goswell (2006:131) decided to place informants in two groups – 50 and younger, and 51 and older, in line with a key change in education policy. For my data, the age groups that have been chosen are ‘29 and under’, and ‘30 and older’. These categories reflect changes in education policy, since members of the former may have been exposed to the Indonesian Signed System (SIBI) at school (see 1.2.2). The SIBI dictionary has been distributed to some schools since 1994, and so while younger signers may have had direct contact with SIBI, it is less likely that informants aged 30 or over at the time of filming (2010-11) will have had such direct contact.

It is well-attested that schools are a significant factor in fomenting sign language variation (Deuchar, 1984; Lucas, Bayley and Valli, 2001; Leeson and Grehan, 2004; Quinn, 2010; Stamp, 2013). The selection of many more participants from one school than another may not only skew the data, but can fail to produce data that are representative of the urban deaf community, and therefore metadata have been collected on the schools that informants have attended. However, there are not enough informants in the balanced sample to stratify the sample according to school(s), and metadata on schooling has only been used to ensure that participants from the schools in Makassar (Cendrawasih, Pembina) and Solo (YAAT, YRTRW, SLB-N) are included.

3.3.4. Text types and the comparability of texts

A key aim of this investigation is to compare the varieties of Makassar and Solo, and so it is important to check the text types that occur in each dataset, and question how comparable the two

datasets are. When collecting spontaneous data with no given conversation topic, one has very little control over the data that are generated. In order to try and limit the differences that arose in each sign language variety, the process for collecting data in each place was identical, as were the instructions that informants were given.

Most of the topics that occur in conversation fall into one of the six areas shown in Figure 3.7, and remarkably, several conversations occur in both Makassar and Solo on exactly the same sub-topics, including money problems, discussion about candidates for forthcoming elections of Gerkatin, romantic developments, and problems that informants have with employment.

- | | |
|--|---|
| <ol style="list-style-type: none"> 1. issues prompted by the filming process <ul style="list-style-type: none"> ○ what should we talk about? ○ how I arrived here today ○ how do we know each other / when did we first meet? 2. recent happenings in my life <ul style="list-style-type: none"> ○ what I did earlier today/yesterday ○ opinions about school life ○ a football match in the neighbouring town 3. the deaf association <ul style="list-style-type: none"> ○ who should stand in the next Gerkatin election? ○ what was it like in the early days of Gerkatin in this city? | <ol style="list-style-type: none"> 4. natural disasters/local occurrences <ul style="list-style-type: none"> ○ a volcano erupting ○ a power cut after a big storm ○ a local river flooding 5. money/employment problems <ul style="list-style-type: none"> ○ problems finding money/dealing with debt ○ how I ended up in my current job ○ problems in my last job / current job 6. family/relationship problems <ul style="list-style-type: none"> ○ when will I marry? ○ finding a boyfriend/girlfriend |
|--|---|

Figure 3.7. *Topics that arise in the spontaneous, conversational data.*

There are some notable contrasts arising from the different circumstances in which data were collected. Filming in Makassar took place during Ramadan, and so the sign PUASA (‘Ramadan’) occurs frequently in the Makassar dataset, but does not occur at all in the Solo dataset. Filming in Solo took place while the nearby volcano, Merapi, was erupting, and volcanic ash was falling in villages near Solo; unsurprisingly, the eruptions and volcanic ash feature several times in the Solo dataset, but not at all in the Makassar dataset. However, such differences surface in any corpus, and are not problematic for the target domains that are chosen for analysis in chapters 5 and 6.

Each dataset contains examples of the use of language for a range of different functions. These include sharing information, negotiating, persuading or challenging, asking questions, and making jokes. In particular, informants in each place sometimes negotiate a narrative known to more than one party in the conversation; this then leads to additions and factual corrections, as well as the expression of (dis)agreement about what actually happened. The Solo and the Makassar datasets are also similar in terms of text type, including some sections where one signer holds the floor, and others that are conversational, with rapid turn-taking. Yet other sections contain a mixture of the two, with monologue and dialogue-like text.

3.4. Identifying target domains, variables and variants

The two grammatical target domains for this investigation are completion and negation. A full discussion of these domains can be found in chapters 5 and 6 respectively, but it will be helpful to begin with some justification for the selection of each domain. The remainder of section 3.4 is concerned with the method used to identify variables in the target domains.

The time constraints of the research degree did not allow for a comprehensive survey of more than two domains, especially given the aim of analysing variation in addition to typological description. While studies of other domains – such as interrogatives and word order – will undoubtedly add to the overall understanding, and are likely to generate equally intriguing findings, completion and negation are found to be highly compatible target domains for the detailed examination of the data. The prevalence of variation in the two domains at the level of morphosyntax was immediately apparent on viewing the data, and thus these domains are well-suited to an analysis of grammatical variation. Some of the variants are also formally unusual from a cross-linguistic perspective, which enlarges the contribution of these analyses to the fields of sign language linguistics and language typology. Importantly, morphosyntactic variables in each domain exhibit similar properties, including the use of mouthings and the use of free and cliticised particles. These parallels are both interesting and useful, in that they provide a base for the identification of similar sociolinguistic phenomena, and the results of analysis for each domain become more closely comparable. Illuminating similarities and differences in the expression of these domains in the Solo and Makassarese data also add depth to this comparison.

Once a domain has been selected, the process of identifying variables in that domain is a significant one, and requires a ‘long series of exploratory manoeuvres’ (Labov, 1969:728-9). The process for research in each target domain follows well-established principles of investigation used in the field of variationist sociolinguistics (Tagliamonte, 2012). As mentioned above, for each domain, variation is observed, and linguistic variables are identified. The questions of whether and where each variable occurs is determined through reconnaissance, and exploratory observation is used to examine the inventory of forms, the patterns that occur, and the circumstances in which variation occurs (ibid.:7). Observations and hypotheses are then tested using quantitative analysis, enabling the interpretation and explanation of linguistic and social patterns in the data.

The examination of *where* the linguistic variable varies is referred to as *circumscribing the variable context* (Poplack & Tagliamonte, 1989:60). The principle of accountability requires that the data are circumscribed to only those contexts that are equivalent (Tagliamonte, 2012:10). In sections 5.4.1 and 6.3.1, I circumscribe the target variables and explain which tokens are excluded from further analysis and why. However, an important difference must be noted relating to the current state of knowledge concerning spoken and sign language variables. Many – though certainly not all – of the studies conducted by variationist sociolinguists focus on variables in the English language (see Tagliamonte, 2012:400 for examples), on which exists a vast body of research in the field of historical linguistics. This means that much is known concerning the linguistic profile of these variables both synchronically and diachronically. In comparison with spoken languages such as English, it is hard to overemphasise the lack of linguistic research on sign languages. Circumscribing the context of sign language variables is much harder because so

much remains unknown about those variables. A lot more work is needed before the quantitative analysis of the kind conducted in this investigation can become anything more than exploratory.⁵³

In order to identify instantiations of completion and negation, I have referred to both form and function. On the one hand, having observed which forms in the corpus express the target function, I then looked at other signs with the same form, to see whether they also exhibit this function. On the other hand, having looked at which clauses feature completive or negative meanings, I then identified how these meanings are expressed formally. While some tokens are relatively easy to categorise phonologically, others are difficult to categorise. Effectively, the determination of variants is an inseparable part of the process of glossing tokens, and both are explained further in section 3.5.1. The remainder of this section is concerned with the functional equivalence of variants – that is, the criteria used to ascertain whether two or more forms (at whatever level of linguistic organisation) are variant realisations of the same linguistic variable.

Variationist sociolinguistic techniques were originally applied to phonological variables, but have since been transferred *above* the level of phonology to morphosyntax (Sankoff & Thibault, 1981:208; Wolfram, 1993:195) and discourse features (Pichler, 2010). According to Sankoff (1973:58), the jump from the phonological level to the morphosyntactic level is ‘not... conceptually difficult’. In a landmark paper on this issue, Lavandera (1978) argues for the use of functional comparability as the criterion for defining non-phonological variables. Even the challenges posed by the multifunctionality of discourse markers are not insurmountable (Pichler, 2010), and this is important given that one of the target variables for this investigation – completive markers – functions at the discourse level, among others (see 5.3.2).

Functional equivalence is demonstrated by finding contexts where different, variant forms are used to exhibit the same function, and two different types of comparison are found. The first, supertokens, are alternations of variants ‘by the same speaker [or signer] in the same stretch of discourse’ (Tagliamonte, 2006:96). The second, parallel contexts, show the variable in similar environments. For each variable, examples of supertokens and parallel contexts are used to support the argument that the items in question are variant forms of one and the same variable.

In accordance with the principles mentioned above, and further criteria posited by Sali Tagliamonte (2006), six linguistic variables are investigated in chapters 5 and 6 on the basis of their frequency, robustness, and implications for (socio)linguistic issues. Of the variables on which multivariate analysis is conducted, one is lexical, four are grammatical, and one is lexical and grammatical (see Table 3.2). The attention given to grammatical variables is important because, as mentioned in section 1.1, grammatical variation has received very little attention in the literature on sign languages. Above all, the transparent formal variation found for the domains

⁵³ I am grateful to Adam Schembri for pointing out the exploratory nature of multivariate research on sign languages, especially compared to the application of quantitative techniques to spoken languages.

of completion and negation and the array of functions that these forms have (5.3) mean that the relationship between form and function is not straightforward, but asymmetrical.

Table 3.2. *The status of variables explored in chapters 5 and 6.*

domain	variable	status	cross-reference
COMPLETION	manual expression of completion	lexical	5.4 (Analysis 1)
	type of completion	grammatical	5.4 (Analysis 2)
NEGATION	presence of basic clause negation	grammatical	6.4
	paradigm of negation	lexical and grammatical	6.5
	syntactic slot of clause negator	grammatical	6.6
	presence of headshake	grammatical	6.7

This is classic territory for sociolinguistic enquiry, since form-function asymmetry is ‘the major focus of variation theory’ (Poplack, van Herk and Harvie, 2002:88). It is the variation in forms and functions that enables insight into the ways that different factors influence language use, and hence the ways in which language varies. Then it is possible to consider the linguistic and social factors that are statistically significant in determining how the variable is realised (5.4).

3.5. Transcription and annotation of linguistic data

The transcription and annotation of linguistic data are necessary in order to bridge the gap between raw data and linguistic analysis. In readiness for transcription, the data on cassette tapes were converted into digital video files. The content of each cassette tape was captured as an AVI file, segmented into shorter clips – usually with a maximum length of around 10 minutes per clip – exported as MPEG-1 files (with a resolution of 720 x 576, and a frame rate of 25 frames per second), and labelled using a file name that shows the date and the participants (see Figure 3.8). These files are stored in a folder according to the location, year, and recording date, and all have been backed up in two different locations. I plan to deposit these files, along with annotation files, in a digital archive such as the Data Archive at the Max Planck Institute for Psycholinguistics.⁵⁴

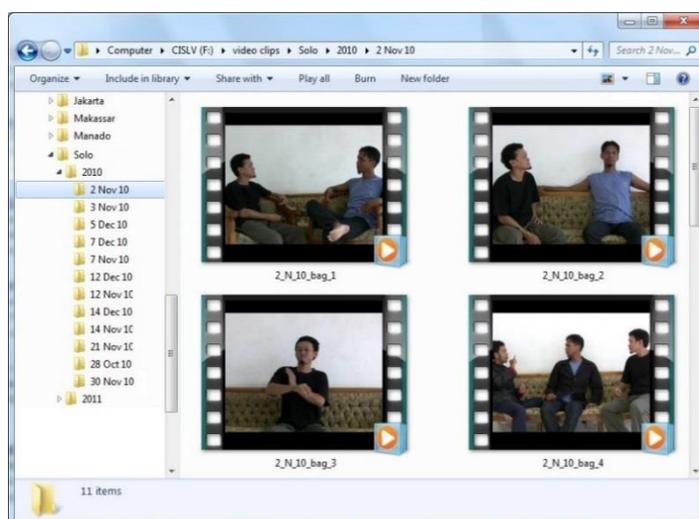


Figure 3.8. *An example of file organisation for spontaneous linguistic data. In the file names, ‘bag’ is short for bagian, Indonesian for ‘part’.*

⁵⁴ See <http://tla.mpi.nl/resources/data-archive/> (accessed 12 June 2014).

Linguistic data have been annotated using digital video annotation software called ELAN (Wittenburg et al., 2006).⁵⁵ ELAN allows for the annotation of a video stream using multiple tiers that can be created freely by the researcher (Figure 3.9). An annotation can be time-aligned to the video stream or it may refer to another existing annotation.

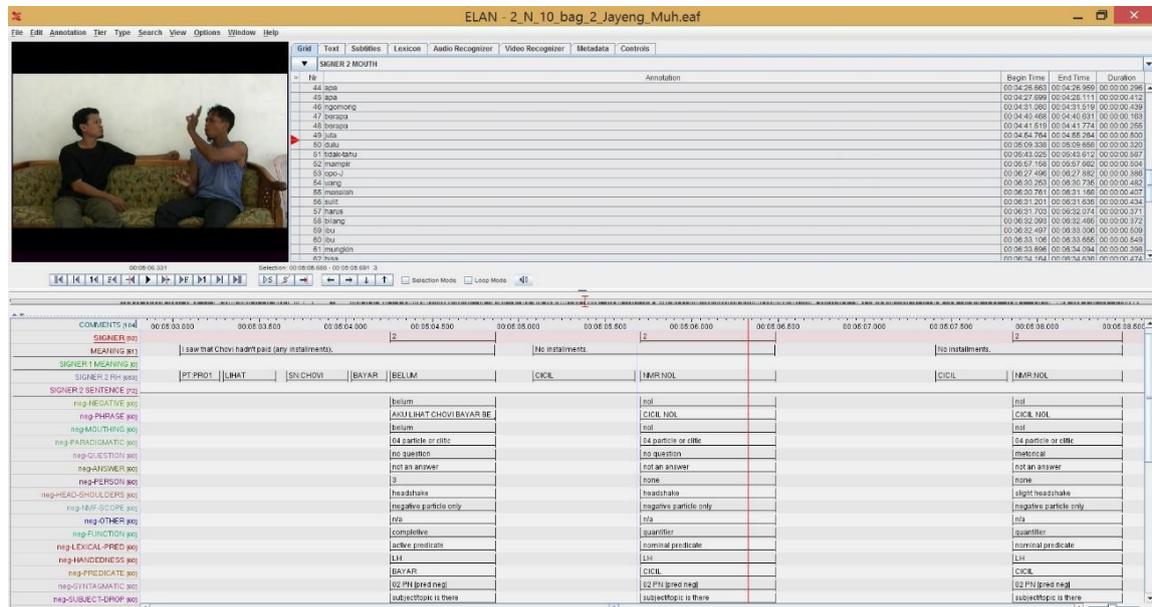


Figure 3.9. A screenshot showing the viewing window for ELAN, with annotation tiers at the bottom of the screen.

The tiers of ELAN Annotation Files (or EAFs) are fully searchable both horizontally and vertically (see Johnston, 2014), and multiple EAFs may be included in a single search. Annotations from different tiers can also be exported into Microsoft Excel, where they can be further examined and translated into different file formats ready for quantitative analysis (section 3.6). All EAFs have been named after the M1V files that they correspond with, and stored in a parallel folder to the video file.

3.5.1. Glossing and the identification of variants

The transcription of sign language data entails ‘segmenting and tokenising the text into individual signed units, and then glossing these units’ (Johnston, 2014:4). Once the selected text had been segmented and tokenised, the glossing process was undertaken with input from the consultants, and other sign community members who showed an interest in doing so. This proved to be an exceptionally valuable opportunity to reflect on the data, and to garner the opinions and insights that consultants had (see 3.1.2). It also had important implications for the development of the consultants’ metalinguistic awareness (3.7.3).

⁵⁵ ELAN stands for EUDICO (European Distributed Corpora Project) Linguistic Annotator. It is open-source software and can be downloaded from <http://tla.mpi.nl/tools/tla-tools/elan/>.

The question of how to refer to a sign form is an important one. Several systems have been developed to describe forms phonologically using symbols, including Stokoe Notation (Stokoe, Casterline & Croneberg, 1965), SignWriting (Sutton, 2012) and the Hamburg Notation System (Hanke, 2004), but these are not used here since they would require the reader, and the researcher, to acquire a working knowledge of whichever system is chosen. Signs can be described using text – whether written or filmed – and images, but the question remains of how to refer to signs in shorthand form.

Rather than allocating a random series of letters or numbers for each sign, labels or glosses are commonly used: words from a meta-language that make possible the analysis of a sign language corpus (Johnston et al., 2011:12). The meta-language is usually a written language with which the sign language has contact (Lucas, 2013), and for this reason, the meta-language for glossing and free translation is Indonesian. Although this may limit the accessibility of the corpus to researchers who work in English, it enhances the accessibility for the research consultants and for future deaf researchers from the Indonesian sign community – most of whom will not have a good command of English, but will have a good working knowledge of Indonesian. This is an important way of establishing the corpus as a resource that can be used by the sign community itself.

The concept of the ID gloss means that each sign form is given a unique gloss, so that a particular sign form can be identified easily (Johnston, 2008a, 2010; Johnston et al., 2011). However, not all corpora have begun by using ID glosses (Crasborn & Meijer, 2012). The use of ID glosses from the start relies upon the existence of a lexical database that can be employed for reference purposes (Johnston, 2014:5), and in the case of Indonesian sign language varieties, basic lexicological research has not yet been conducted, and the initial lexicon remains undocumented. Consequently, although 180 minutes of data have been glossed (3.3.2), only signs linked to the target domain – which have been analysed to some degree – have been given an *ID gloss*. The remaining signs have been glossed tentatively, and maybe inconsistently, and these glosses await revision. Once a burgeoning lexical database is established, it will be possible to build a reference lexicon from scratch, on the basis of annotations themselves, and a similar process has been used for the BSL corpus (Johnston, 2014:6).

Once tokens in the target domain have been glossed – on the basis of a sign's manual form – the relationship between forms and relevant functions can be investigated. The initial attribution of an ID gloss to a sign is a tentative decision, and the glossing process is circular (Johnston, 2014), especially when a language is being documented for the first time. Decisions about a gloss may need to be re-visited in light of analysis concerning the functions that the sign performs. Glossing is a necessary but imperfect process, because glosses cannot capture the complexity of the sign language data.

In addition, caution must be taken, because

[the] use of words of a spoken language to transcribe sign language data may result in a researcher (unconsciously) *transferring* characteristics of the words to the signs. A simple example is word class: using a Dutch preposition to gloss a VGT sign does not necessarily mean the VGT sign is also a preposition, but it appears to be very tempting to think it is (Vermeerbergen, 2006:173)

In addition to glossing, once target forms were identified, a free translation has been added to the clause in which the target form appears.

i) Phonological categorisation of forms

The glossing process implicitly requires the categorisation of tokens according to their phonological parameters. One problem when doing this is that phonological features are often gradient in nature (Crasborn, 2012:15). To give an example, a prototypical ‘thumbs up’ handshape might be defined as having a fully-extended, selected thumb and tightly-closed, unselected fingers. Yet in actual instantiations of this handshape, the precise specification of the position and articulation of thumb and fingers may vary considerably. Given the potential degree of variation in dimensions such as the angle and straightness of the thumb, the degree to which the fingers are bent and embedded in the palm, and so on, when exactly does a ‘thumbs up’ handshape cease to be a ‘thumbs up’ handshape? This challenge may be even more pronounced for other phonological parameters such as movement and location, where the number of dimensions is even greater. For example, movement includes the dimensions of path, speed, movement that is internal to the sign, and so on.

A second issue is that signs in spontaneous data are not isolated citation forms, but occur in strings – usually between two other signs – and as such they are part of a specific phonological context (Crasborn, 2012:15). The way that a signer chooses, or is compelled, to move into and out of a sign has a major effect upon the way that the sign is articulated, along with a whole host of other phonological and prosodic considerations such as rhythm, stress and intonation (Crasborn, 2006; Sandler, 2012). Encounters with phonological indeterminacy are unavoidable when conducting linguistic analysis, yet when faced with a vast range of gradationally different forms, it is requisite to categorise the data to facilitate their analysis.

These issues have been dealt with by looking at phonological oppositions and salient differences; forms are grouped according to essential features in order to identify distinctive, prototypical forms.⁵⁶ This process results in an inventory of phonological or lexical variants with phonological descriptions that may be under-specified in order to facilitate categorisation (see section 5.2 for

⁵⁶ That this process is somewhat subjective is unquestionable, given the need for discretion, but there is really no alternative.

examples). The consideration of whether or not a form is cliticised can also account for the precise appearance of a form (3.5.2(i)). Having created a tentative inventory of forms, tokens in the data can be considered in light of this.

Despite further challenges created by the gradation described above, there are other elements that can aid with the classification of variants. For example, where a token is articulated as a one-handed sign, and its phonological parameters are indeterminate – for example due to assimilation with the previous or following sign – it is useful to look at what the non-dominant hand is doing lower in the sign space; in such cases, the non-dominant hand sometimes makes a (usually weaker) movement which reveals the underlying form of the sign in the dominant hand.⁵⁷

ii) Variation at different levels of linguistic organisation

Variants in sign languages occur at different levels of organisation, as is the case for spoken languages. Over the past few years, distinctions have been made by sign language sociolinguists between phonological and lexical variants (Cormier et al., 2012), and having categorised the phonological forms of the tokens (section (i), above), decisions must be taken as to whether members of these categories constitute phonological or lexical variants. As explained below, the status of an item as a lexical or phonological variant may also be reflected consistently in the choice of ID gloss. The use of the terms ‘phonological variant’ and ‘lexical variant’ in the literature is described in Palfreyman (forthcoming), and summarised here as follows.

Phonological variants are usually different from each other in a single parameter – handshape, movement, location or handedness – and share several formal elements. This implies that phonological variants have either derived from each other, or derive from a common origin through processes related to morpho-phonological variation and change. Lexical variants differ from each other in several parameters, with few if any common phonological parameters, and ‘either derive from different sources or have diverged from each other beyond recognition due to an accumulation of phonological changes’ (Palfreyman, forthcoming). Variants are labelled in ways that highlight their identity. Their status as phonological variants is shown with lower-case letters in the variant code to the right of the gloss (SIGN:a, SIGN:b). For lexical variation, in cases where signs have the same gloss, the status of ‘lexical variant’ is indicated by numbers in the variant code (SIGN:1, SIGN:2).

The determination of variants as lexical or phonological is not always clear-cut, and ambiguous cases arise because the difference depends on the *degree* of similarity between forms. Nevertheless, the process of identifying lexical and phonological variants should be motivated by

⁵⁷ Using such methods, it transpires that the vast majority of completive forms can be considered members or allophones of this inventory (see 3.5.1), and only nine out of 264 tokens are judged to fall short of these specifications. These are provisionally glossed as SUDAH:other.

structural and semantic principles as far as possible. It is common for variants to be categorised firstly as lexical and then as phonological. For example, Lucas et al. (2001:181) find four lexical variants meaning ‘cake’; the first of these has nine phonological variants. Another sign, meaning ‘faint’, has 11 lexical variants, of which three feature considerable phonological variation, with between four and six variants each.

3.5.2. Annotation

At the annotation stage, linguistic constructions are sub-categorised, and this adds ‘phonological, morphological, syntactic, semantic, pragmatic and discourse information about semiotic signs and linguistic forms, depending on the purpose of the analysis’ (Johnston, 2014:10). It was by no means clear at the outset as to which information would be needed for the final analyses, and this developed as I became more familiar with the data through observation and preliminary analysis. The lack of studies using a quantitative approach to examine grammatical variation in these domains meant that creative thinking was required in terms of what to code for, and I approached this both deductively, using a brainstorming method; and inductively, looking at tokens in the data to see what might be interesting and/or significant. The literature for each target domain was a useful source for ideas (sections 5.1 and 6.1), as well as studies that have applied multivariate analysis to sign languages (2.3.1). The amount of data also had to be considered, because where a certain characteristic occurs infrequently, quantitative analysis is not usually possible (see 3.6).

Annotation took place both in the field and at UCLan. By conducting part of the annotation in the field, I was able to test my own instincts and interpretations against those of my consultants. The position was taken that neither myself nor my consultants had a full understanding of the data; the aim of working together was to benefit from the sum of the researcher’s theoretical understanding and the consultants’ knowledge of the target language. In practice, discussion and argumentation were frequently used to settle upon agreed interpretations of target structures. Where annotation took place at UCLan, complex contexts were noted and discussed with fellow linguists and/or later with consultants in the field.

For the 180 minutes of data that have been transcribed, contexts where the grammatical domains of completion and negation are expressed in the data have each been annotated using a sub-set of tiers, shown in Appendix 2. All of the tiers are explained further in the relevant section of the thesis (for completion, 5.4.2 and 5.5.1; and for negation, 6.3.2). There is some overlap between the two domains in terms of the factors that are coded for, particularly social factors (the sex, age and region of the signer, and an individual signer code). The following sub-sections focus on three types of linguistic annotation that have been necessary for both domains: (i) the identification of clitics and affixes, (ii) the identification of clause boundaries, and (iii) mouthings. These sub-sections are included because coding for these elements is associated with particular challenges.

i) Identifying clitics and affixes

In chapters 5 and 6 it is shown that both completion and negation may be expressed by means of cliticised particles, or clitics.⁵⁸ Further, there is also a negative affix (\equiv JELEK) through which a small number of predicates are negated (6.2.6).⁵⁹ Clitics are ‘morphological elements that do not have the full set of properties of an independent (phonological) word’ (Aikhenvald, 2002:42). They lean towards, or attach to, a morpheme with which they form one phonological unit. This morpheme is referred to as the host, and clitics can attach to the preceding or following word (enclitics and proclitics, respectively). Clitics and affixes often emerge as part of a process of grammaticalisation, whereby the functions and meanings of words or signs slowly change over time (Hopper & Traugott, 2003), and ultimately clitics may turn into affixes. It is therefore helpful to conceive of a cline, or continuum, that runs from full-fledged phonological word to affix:

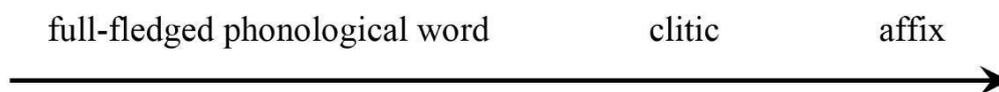


Figure 3.10. *The grammaticalisation cline from phonological word to affix.*

Clitics occupy an intermediate position on this cline, and may indicate changes that are taking place as a full-fledged phonological word becomes grammaticalised and increasingly behaves like an affix. Clitics have been identified in several sign languages to date, notably as pronominal indexical locative forms (Sandler & Lillo-Martin, 2006:7) and negatives (Zeshan, 2004).

On the cline from phonological word to affix, signs may be more or less attached to their hosts, and this means that the distinction of a clitic from a free form, and from an affix, is not always clear-cut. Completive and negative particles in the CISLV show wide-ranging degrees of attachment or boundedness to their hosts. Cross-linguistically, the heterogeneity of behaviour exhibited by clitics is notorious (Haspelmath, 2010:198), and it is necessary to explain why some tokens are categorised as clitics, rather than free particles, on the one hand, or affixes on the other.

First, prototypical clitics do not bear their own stress (Haspelmath, 2010:196) and are free to select any host (ibid.:198). They can also attach to material already containing clitics, whereas affixes cannot. As part of an exploration of morphological negation across sign languages, Zeshan (2004:49) compares the characteristics of a negative clitic that occurs in TĪD, and a negative affix that occurs in Finnish Sign Language (FinSL). This is reproduced in Table 3.3.

⁵⁸ A brief theoretical overview of clitics and affixes is presented here; see sections 5.2.2 and 6.2.2 for examples of cliticised particles in each domain, and 6.2.6 for a discussion of the negative suffix \equiv JELEK.

⁵⁹ The attachment of a clitic to its host is denoted using (=), and affixes with (\equiv); see the Transcription Conventions on page xiv.

Table 3.3. *Characteristics of a negative clitic and affix (from Zeshan, 2004:49).*

negative clitic	negative affix
- co-existing free form	- no co-existing free form
- variation between free form and clitic form	- no variation between free and bound form
- comparatively more productive	- comparatively less productive
- form more fully specified	- form less fully specified
- often two separate reduced movements	- one main movement
- no handshape assimilation	- handshape assimilation possible
- full compositionality of meaning	- changes in meaning possible
<u>- no formational changes other than reduction</u>	<u>- formational changes in stem and affix</u>

Several of the characteristics in Table 3.3 are relevant to the identification of clitics and affixes in the CISLV, and the distinctions between the two are used as loose criteria to guide the identification of clitics and affixes – although it is not considered necessary for a potential clitic or affix to meet all of these criteria. For example, all of the completive clitics described in 5.2.2 and 6.2.2 may (and often do) occur as free forms, and there are many instances where a signer uses both the free form and the reduced form in a single conversation. These clitics are also productive in terms of the hosts that they may attach to. There is also no handshape assimilation, although the location of the form may assimilate to the location of the previous sign. Conversely, \equiv JELEK is less productive, attaches to only a small number of hosts, and does not occur with these hosts as a free form.

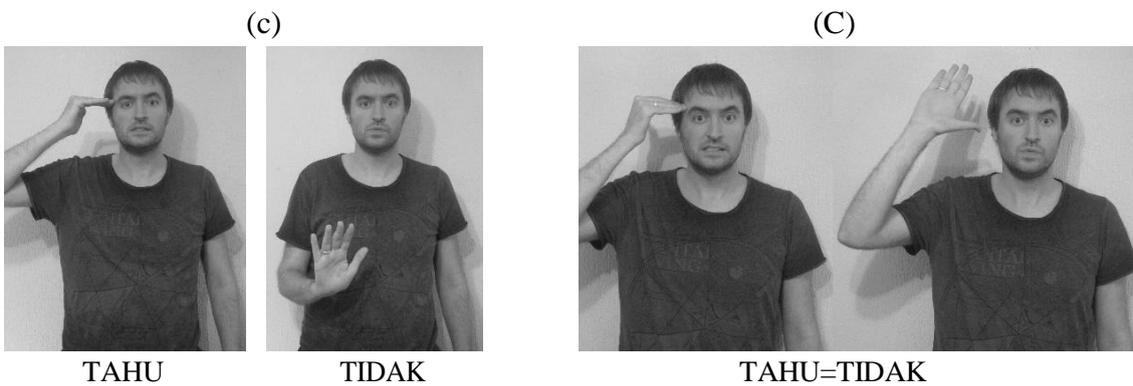
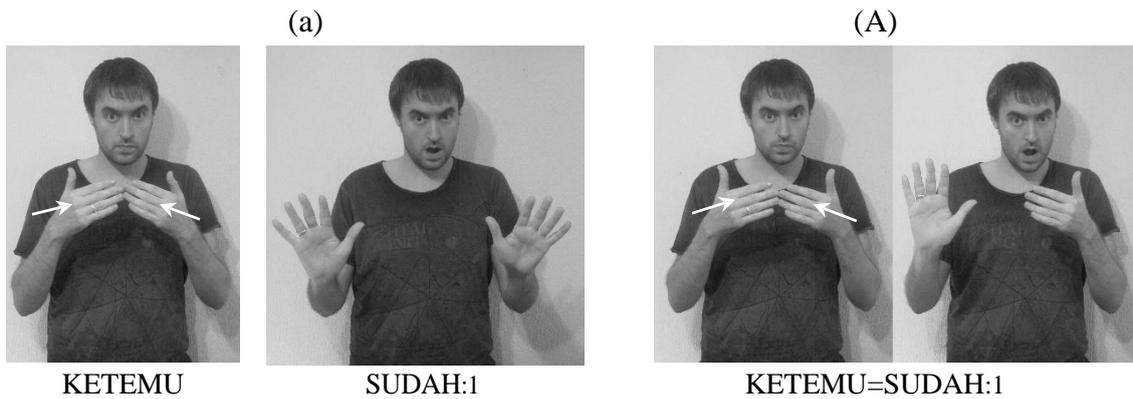
Categorisation of clitics is arguably more difficult at the other end of the cline, where reduced forms (clitics) must be distinguished from free forms. Decisions are made on the basis of characteristics observed in the CISLV. Four guiding criteria are used:

- | | |
|--|---------------------------|
| i) elision of a phonological segment; | example (B) below |
| ii) assimilation with the location of the previous sign; | (C), (D), (E) |
| iii) holds by the non-dominant hand; | (A) |
| iv) a mouthing spreads and binds the clitic to the host. | any (see 5.2.3 and 6.2.3) |

These are illustrated below in (A)-(E) using examples from the data. Each context is shown twice in order to highlight the difference between the cliticised particle and its full-fledged counterpart. Upper-case letters denote examples containing a clitic that actually occurs in the data, and references are provided to the relevant example later in the thesis (see Table 3.4). Lower-case letters denote corresponding examples, to show what the utterance would look like with a free particle, rather than a clitic. (A) and (B) are completive clitics (see 5.2.2) while (C) to (E) are negative clitics (6.2.2).

Table 3.4. Details of clitics presented in examples (A)-(E) below.

example	type	host form	gloss for clitic	reference
(A)	completive clitic	KETEMU ('meet')	=SUDAH:1	(59)
(B)	completive clitic	PT:PRO1 (first person pronoun)	=SUDAH:2	(55)
(C)	negative clitic	TAHU ('know')	=TIDAK	(134)
(D)	negative clitic	DATANG ('come')	=TIDAK-ADA	(133)
(E)	negative clitic	LIHAT ('see')	=PALM-UP	(130)



(d)



DATANG



TIDAK-ADA

(D)



DATANG=TIDAK-ADA

(e)



LIHAT



PALM-UP

(E)



LIHAT=PALM-UP

ii) Identifying clause boundaries

Sign language linguists have paid attention to the delimitation both of clauses (Johnston & Schembri, 2006) and of sentences (Crasborn, 2007; Fenlon et al., 2007). It is necessary to identify clause boundaries so that annotations can be added pertaining to the position of the target structure in the clause. However, identifying the whole clause is not necessary in every case: if it is clear that the target structure is clause-final, then the position marking the beginning of the clause is irrelevant for the analysis. Clauses in spoken languages do not have to include a verb; instead, they may include an adjective or a nominal of some sort (Van Valin & LaPolla, 1997:26). With this in mind, and given the general difficulty of attributing parts of speech to constituents in sign languages (Schwager & Zeshan, 2008), I refer to predicates rather than verbs. Target structures

for each domain are coded for their relation to the predicate, as pre-predicate, post-predicate, or – in cases where there is no obvious predicate – as a one-sign clause. The post-predicate category is used to account for the fact that some tokens, both for completion and negation, are not clause-final but still occupy a slot that follows the predicate.

The onset and offset of clauses are identified primarily by changes to non-manual features. Sandler (1999:206) notes that intonational phrase boundaries, which may indicate the limits of clauses, are signalled by an ‘across-the-board change in all facial articulations’, and holds and pauses are also useful indications to consider. Building on an initial notion proposed by Johnston and Schembri (2006), Hodge, Ferrara and Johnston (2011:10) define a clause-like unit as ‘a possible language-specific grammatical construction containing a universal semantic structure’, and identify candidates for clause units with a semantic approach, identifying the elements that operate as predicate(s) and argument(s) (ibid.:5). The expression ‘clause-like units’ is used several times in this investigation as a reminder of the provisional nature of the unit.

iii) Transcribing mouthings

One of the shortcomings of an ID gloss tier is that it only accounts for manual forms, and this has important implications for corpus linguistics: for a discussion of these, see section 7.3. For now, it should be noted that transcribing mouth patterns in the corpus is particularly tricky for several reasons. First, the use of only one camera makes it impossible to circumvent certain visual difficulties: participants often face each other, and may be in profile to the camera; lip movements are generally small and the consequent lower quality image is hard to interpret; and the hand sometimes obtrudes between the mouth/face and the camera during the course of communication. Second, mouthings may be based on spoken words featuring sounds that are not externally visible, and the degree to which this is reflected in a mouthing is very difficult to establish.

Third, the expression of parts of words leads to uncertainty regarding the onset and offset of a mouthing. The replication of sounds as mouthings allows for much idiosyncratic variation depending on factors such as knowledge of the spoken word in question, and individual styles. Where a mouthing conveys the same semantic content as a manual sign, the co-articulation of manual and non-manual is intuitive, but it is far from the case that these always coincide. Fourth, the coder’s own instincts for what words or mouthings are ‘expected’ in a certain context can colour the interpretation of the form that is actually produced. Fifth, the fact that a mouthing may (be) change(d) into a mouth gesture creates yet another example of indeterminacy: how far must a mouthing alter before it is no longer a mouthing? These challenges inevitably lead to differences of opinion concerning the correct transcription of a mouthing. An example from the data of transcription for mouthed forms in ELAN, taking into consideration the challenges described above, can be seen in Figure 3.11.



Figure 3.11. An example of transcription that seeks to capture asynchrony between mouthed forms (shown in the upper tier) and manual forms (in the lower tier).

This kind of transcription is used to show the variable expression of mouthed forms in negative constructions (see section 6.2.3).

3.6. Quantitative analysis of linguistic data

This investigation uses variable rule analysis, which employs generalised linear models that enable the formal mathematical evaluation of the relationship between a binary dependent variable and several independent variables (Tagliamonte, 2012). According to Sankoff, who developed the first such programme in the 1960s, variable rules are ‘the probabilistic modelling and the statistical treatment of discrete choices and their conditioning’ (Sankoff, 1988:2). In other words, they determine whether a pattern is statistically significant, or merely occurs by chance. Three lines of evidence may be used to create an argument that explains variable phenomena: statistical significance, effect magnitude, and the constraint hierarchy (Poplack & Tagliamonte, 2001:92; Tagliamonte, 2002:731).

A factor is statistically significant if the probability (p) of its correlation with the dependent variable is 0.05 or less ($p \leq 0.05$). This means that the observed result would be very unlikely to occur under the null hypothesis, if there were no relationship between the dependent variable and the factor in question. It is necessary to find out not just which factors are statistically significant, but also which factors are not, since both are useful indications of how variation operates (Baker, 2010b). The effect magnitude or effect size is concerned with the strength of factors; factor groups with a larger range are more significant than factor groups with a smaller range. Finally, the constraint hierarchy shows factor groups in the order of their statistical significance, and hence shows the direction of effects.

This investigation uses *Rbrul*, a version of the variable rule programme, to conduct multi-effect logistic regression analysis.⁶⁰ *Rbrul* was developed by Daniel Johnson (2009) and has an important advantage over its predecessor, *Goldvarb*, in that it can conduct mixed-effect models (Tagliamonte, 2012:138). This means that *Rbrul* assigns each signer/speaker a value, or random intercept, based on how much unexplained variance there is for each signer/speaker in the model. It is then possible to abstract away from individual variation and generalise to a population:

we can test whether there are differences among groups that are robustly present across the dataset, and we can be more confident that the trends are not carried by one or two individuals (Drager and Hay, 2012:60).

⁶⁰ *Rbrul* is an open-source programme that can be run from www.danielezrajohanson.com/Rbrul.R and uses R software (<http://cran.r-project.org/>).

The dependent variable must be binary (Johnson, 2009:359), although independent variables may include many factors.

There are several points to be aware of when using *Rbrul*, since these affect the design of the analyses conducted in chapters 5 and 6. While several independent variables, or factor groups, can be included in an *Rbrul* model, the viability of the model depends on how many tokens are included. Factors that occur only a small number of times are unlikely to produce a viable model, and models that include too few tokens for the number of factor groups are also unworkable. Although it is possible to check for interactions between different factors (see, for example, Clark and Watson, 2011), this again requires enough tokens to render the model viable, and when interaction effects were included, the models failed to converge due to the size of the N values. The annotation of more tokens in future will make this more feasible. Finally, independent variables may be discrete or continuous, and age is treated as a continuous variable for all runs of *Rbrul*.

The tables in sections 5.4 and 6.4 to 6.7 that show the findings of *Rbrul* runs begin by stating the deviance, degrees of freedom (DF) and grand mean of the variable. The profile of the binary dependent variable is shown on a *p* scale from 0 to 1, and it is important to note the variant that corresponds to the *application value* in order to see which variant is favoured, or preferred, by a given factor. This is necessary for interpreting the Centred Factor Weight (CFW), which gives information about the effect size of each factor. For example, if a variable can be realised as *x* and *y* – with *x* as the application value – and the factor weight for female signers was 0.8, this would suggest that female signers strongly favour *x* and disfavour *y*. Conversely, if *y* were the application value, the same findings would suggest that female signers strongly favour *y* and disfavour *x*.

The log-odds (L-O) are also shown, since these may be more familiar to those working in other fields. Log-odds give similar information to the CFW, but on a scale that is centred on 0. A positive value (such as 0.255) shows how strongly a factor *favours* the application value, while a negative value (such as -0.255) shows how strongly a factor *disfavours* the application value. In keeping with the way in which such findings are described in the literature on sociolinguistic variation, the analyses in chapters 5 and 6 focus on the centred factor weights, but the log-odds are also reported for the benefit of practitioners from other fields.

Where enough factors are found to be significant to make it viable to create a constraint hierarchy, this is established by using the range of effect sizes. The range, which is shown in the findings tables for all factor groups, is calculated by subtracting the smallest factor weight from the largest, multiplying by 100, and rounding to the nearest whole integer. The constraint hierarchy presents statistically significant factor groups in order from those with the largest range to those with the smallest (Tagliamonte, 2012).

3.7. Ethical considerations

Language documentation and description has been described as ‘the core activity for sign language vitalisation and community empowerment’ (Hoyer, 2013:43), and my own experiences of documenting and describing sign language varieties support this notion fully. Indeed, it was ethical concerns that provided the initial motivation for this research. Ethical issues have been considered at length and in depth from the outset, and ethical approval was sought and granted by the Ethics Committee of the International School for Communities, Rights and Inclusion at UCLan in October 2010, following revision, and prior to the first fieldtrip.

Many linguists have stressed the role that research can play in empowering the community or revitalising languages that are endangered. In Indonesia, for example, Florey makes the case for linguistic activism as a means to document endangered languages (Florey and Himmelmann, 2010; Florey, 2007). Sociolinguists have also emphasised the ethical obligations that researchers have to the communities in which they conduct research. Labov (1982:172) notes the obligation to correct erroneous ideas or practices that are widespread in the community (*Principle of Error Correction*) and his *Principle of the Debt Incurred* states that sociolinguists are also obliged to use data-based knowledge ‘for the benefit of the community, when it has need of it’ (Labov, 1982:173). This notion is underlined by Wolfram’s *Principle of Linguistic Gratuity* (1993).

Dikyuva et al. (2012) and Dikyuva (2013) contrast the notion of ‘giving back to the community’ with one of ‘continuous community involvement’. According to the former model, deaf communities are objects of research, which is conducted about and for deaf people; research output to the community is often a final step at the end of a process that includes research and academic research output (Dikyuva, 2013:7). Conversely, the continuous community involvement model requires that the ‘deaf voice’ is active throughout the process, from the initial research idea through to a range of research outputs – academic, educational, policy changes and community-based. It is contended that

researchers have to engage deeply with ‘deaf identity’, ‘deaf individuals’, ‘deaf culture’ and ‘deaf community’ ... [they] can adapt the cultural flow of deaf communities into their research throughout the research process rather than make a direct translation of final research outputs (Dikyuva, 2013:9).

Furthermore, a range of research outputs for different groups can be planned from the beginning of a project. In the remainder of section 3.7, I begin with issues pertaining to entry into the community (3.7.1), and with practical issues such as informed consent, anonymity, data protection and storage (3.7.2). In section 3.7.3, I explain how the research has been conducted in a way that matches the continuous community involvement model proposed by Dikyuva et al. (2012) and Dikyuva (2013).

3.7.1. Working with and through the community

Before the onset of this investigation, I had been engaged with sign communities in Solo, Yogyakarta and Jakarta as a volunteer with *Voluntary Service Overseas*, and this engagement enhanced the participatory and community-driven nature of the investigation. Although I am not a member of the Indonesian sign community, I have worked with members of that community, who are in a position – during and after the investigation – to lead on projects related to their community. I was also able to build upon long-term friendships and use my existing cultural and linguistic knowledge, which is an important prerequisite for ethical research (Dikyuva, 2013).

Prior to the first fieldtrip, I thought carefully about how to manage the change in my role from volunteer to linguist/fieldworker, and I used pictures of the University of Central Lancashire to emphasise that I was now a student rather than a volunteer. I also brought samples of academic writing to show what I was aiming to produce, and how this might be of benefit. Inevitably these were in the English language, and in order to make this more accessible, I chose samples with visual images, such as an Arabic fingerspelling chart and signs for possessive constructions in different sign languages.

Much has been written about the role of hearing researchers in the field, and the need to mitigate potential power imbalances that may arise when they conduct research on deaf communities (Harris, Holmes & Mertens, 2009; Hoyer, 2013; Fischer, Ramirez & Rathmann, unpublished). As a deaf researcher, some of these issues are no longer applicable, but being deaf does not preclude the possibility of working in an unethical manner, and it is just as necessary to consider and follow robust, ethical practices. In particular, whether deaf or hearing, there is still much potential for an imbalance between the researcher, who usually hails from a university background, and a sign community that, in the case of Indonesia, has few or no connections with that context.

Czaykowska-Higgins (2009:22) notes that ‘in the most traditional version of a linguist-focused model the linguist tends to be in a position of intellectual power with respect to the language-users’. Such a linguist-focused model is unacceptable because it establishes and perpetuates an unequal relationship. My aim was to share information and create respectful relationships based on the premise that my role involves both teaching and learning. Although I was already fluent in the local sign language variety, my research consultants have a much better command of this variety, and can make recourse to introspection in a way that I cannot. At the same time, there is a profound advantage in sharing as much knowledge as is appropriate, taking into account the level of desire to learn. It was easy to do this by emphasising my role as a student who was new to linguistic theory, and I was extremely lucky to have three consultants who had a deep reciprocal desire to share and to learn.

A benefit of being a deaf researcher is the opportunity to be a deaf role model, which is an important element of sign language community empowerment because it assists with the development of a positive cultural and linguistic identity (Hoyer, 2013:51). Of course, this has its own responsibilities, and as a volunteer and then a linguist, I quickly became aware of the potential influence that I have in the field on the views of others – as a user of a Western sign language – in the way that I behave and answer questions.⁶¹ For example, informants would sometimes assert that my own signing skills were superior to theirs, or that BSL was a ‘better’ language than Indonesian sign language varieties.⁶² I took this opportunity to emphasise that all language varieties are equally acceptable, and that my own signing is in no way superior.

Other examples of situations where it was necessary to identify and discourage false or unhelpful assumptions concerned professed attitudes towards deaf people who do not use sign language, and attitudes towards signers who use signs from ASL rather than indigenous ones. In many situations, linguists have to strike a balance between sharing information that can empower deaf people to be confident in their use of sign language (promoting the linguistic right to use sign language) and reaffirming the rights of individuals (such as the right of deaf people to choose how they communicate). It is also necessary to avoid expressing a purist ideology by balancing an emphasis on the right to use and promote indigenous variants with an emphasis on the acceptability of those signers who use non-indigenous signs.

Although I have been proactive in fostering positive relationships with urban sign community members across Indonesia, Gerkatin and the research consultants had a crucial role as intermediaries. Harris, Holmes and Mertens (2009:115) maintain that researchers

should ensure that the views and perceptions of the critical reference group (the sign language group you work with) is reflected in every process of validating and evaluating the extent to which Sign Language communities’ terms of reference have been taken into account.

Working with community members who could mediate between the researcher and the community helped to promote more effective communication, and also to flag up any potential problems at an early stage. I am quick to acknowledge that, in so many ways, users of a target sign language can communicate messages much more effectively than me, given their linguistic knowledge and in-depth understanding of the local culture.

⁶¹ Branson and Miller (2004:15) also comment on the risk inherent in intervention from abroad, and note that a hearing Australian educationalist was involved in the introduction and design of SIBI (1.2.2).

⁶² Perceptions that some sign language varieties are ‘better’ than others have been expressed by signers in other contexts too; some participants in the Black ASL project (McCaskill et al., 2011) made comments such as ‘white signing is better than black signing’ because ‘white signing is more advanced, more complex’ (Lucas, 2013:298). Researchers clearly have a responsibility to challenge these views.

3.7.2. Practical ethical issues associated with data collection and storage

Informants were initially identified, approached and recruited through the local branch of Gerkatin, using the method of convenience sampling described in section 3.3.1. Once data collection started in Makassar, the news spread and many turned up to take part. All of those who wished to participate were encouraged to do so, and nobody was turned away; deaf people in Indonesia already face a lot of rejection, and I considered it an important principle that all who wished to take part were able to.

Informed consent was obtained from all participants, although the conventional method for obtaining this consent – reading an information sheet and completing a consent form – was not used, for the following reasons. First, it was difficult to explain to the informants what they were consenting *to* before they had actually taken part in data collection, because they had no prior experience or existing conceptual understanding of the notion of ‘research’. Secondly, handing out an information sheet saturated with text is oppressive and inappropriate for a community that has a low literacy rate. Thirdly, an explanation of the research prior to the collection of data would have made it harder to obtain natural data, since this would have prompted unwarranted expectations on the part of informants regarding what was required of them (see 3.3.2, and Schembri, 2008).

With these points in mind, informants who wished to take part were filmed first, and informed consent was obtained afterwards using the form in Appendix 1, with explanation in sign language as to how the data would be used. In some ways this was also preferable because participants now had a clearer understanding as to what they were consenting to. It was difficult to explain to participants about the right to withdraw, because they had just given their consent to take part. I therefore informed local deaf community leaders that those who took part in the research could withdraw at any time if they later changed their mind or felt uncomfortable, and that the leaders should let me know if anyone expressed any concerns about their involvement.

All informants were given a one-off payment of 20,000 rupiah (around US\$2.30 at the time) for being filmed, to thank them for their time, and for sharing their linguistic knowledge.⁶³ I also wanted to underline the principle that their sign language is valuable (see 3.7.3). This remuneration had been planned from the beginning of the fieldtrip, but was issued at the end, once all data had been collected. At the point of data collection, informants were not aware that they were to receive any financial recompense; this was to make sure that informants took part out of interest, or because they wanted to, and not simply for financial gain. Research consultants, and others who sat with me and assisted with the glossing of the data, received 20,000 rupiah per hour

⁶³ While this looks a small sum in US dollars, in Indonesia it was enough at the time to buy a meal for two at a *warung*.

in recognition of both their time and the knowledge that they were sharing.⁶⁴ Informants were also asked if they would like to be recognised by name for their contribution to the corpus. All participants agreed to this, and their names are listed with my gratitude on page xiii. Further, informants are referred to by name throughout the thesis in relation to the data, unless sensitive issues are being discussed.

Given the importance of facial expressions in the grammar of sign languages (1.1), it is not feasible to record filmed sign language data in a manner that preserves the anonymity of those who take part. All informants gave their consent for their data to be included in publications and video segments, and this means that technically the corpus could be opened for public viewing. However, Crasborn (2010) questions how far it is possible for informants to understand in a real way how sign language data may be used, especially given the rise of open-access sign language corpora: once information is online, for example, it is impossible to withdraw it from the public domain (*ibid.*:286).

In particular, there are several sections of data where informants gossip about other community members, or talk about sensitive topics such as money and delicate family situations. This is a very human phenomenon, and careful judgement is required on my part to ensure that the dignity of all concerned is retained. It is imperative that researchers take responsibility for the data that they collect, using it sensitively. This goes beyond the written agreement that is represented by the consent form, and is linked to the trust that informants have implicitly afforded the researcher at the time that data are collected. Although it is hoped that the corpus will eventually be available as an online resource, restrictions will be applied in order to ensure that the rights of informants are respected. Any material that is open access will be made available only after express permission is given by the informants concerned.

From the time that they were recorded, hard copies of all data have been securely protected in a locked cupboard at the iSLanDS Institute, UCLan. Soft copies of the data and annotations were stored securely in several locations in accordance with the UK Data Archive guidelines, and the principles of the Data Protection Act (1998). Metadata and consent forms have also been stored securely for future reference.

3.7.3. Actual and anticipated research outputs for the sign community

The main motivation for this investigation is the potential impact of its findings for the Indonesian sign community, as realised through the actual and anticipated outputs described in section 3.7.3. Plans for many of these outputs have been in place from the onset of research, though the outputs

⁶⁴ On the first field trip to Solo, the three research consultants put in around 85 hours between them. They were recruited by dint of their enthusiasm, interest and knowledge.

themselves vary in terms of implementation time – some will only be realised after several years, and hence are referred to as anticipated outputs.⁶⁵ For example, by sharing research skills and (socio)linguistic knowledge with sign community members and deaf leaders in the short-term, and making links with Indonesian universities in the medium-term, it is hoped that academic research activities and applied linguistics work will continue in the long-term with deaf sign language users at the helm. Many of the outputs described here are linked, and are concerned with the metalinguistic awareness of sign communities. Relatively little has been written about this (though see Hoyer, 2013; Kaul, Griebel & Kaufmann, 2014) and at the end of section 3.7.3 I present a summary of the term, along with examples based on my observations in the field.

In her discussion of the Kosovar sign community, Hoyer (2013) makes an observation that is equally true of the Indonesian sign community: prior to the onset of research, even sign language users themselves did not regard their signed language as a natural language that is equal to spoken languages. However:

as they received linguistic training, the sign language users began to reflect on their own and others' language use and learned to talk about language (Hoyer, 2013:44).

An interview with my research consultants at the end of the first fieldtrip (December 2010) shows that, even over a period of a few weeks, they learnt a great deal from reviewing the sign language data that had been recorded:

(1) **Nick (off-camera)**

What do you think about what we have done over the last few weeks?

Jayeng

I was pleased to have ELAN, especially to slow the sign language down and look at it. It was good to exchange thoughts about sign language.

Muhammad

It was good, I was happy. We were able to look at the sign language in depth, through repeat viewings. Watching sign language normally is too confusing, but with ELAN we can watch it slowly.

...

I realised that older signs are used here in Solo, as well as newer ones. I didn't know about some of the older ones, so I had to find information about them.

Interview with Jayeng Pranoto, Oktaviani Wulansari and
Muhammad Isnaini, 12/12/10 (00:20–01:22, 02:45-03:55)

Muhammad's comment in (1) concerning the coexistence of older and newer signs is also revealing for what it suggests about the role of research in highlighting the existence, validity and acceptability of variation. Looking at the language that sign community members use helps to

⁶⁵ The two other motivations for this investigation are the opportunity to continue meeting and working with my deaf friends in Indonesia, and the pleasure that I take in academic research.

promote descriptive views of sign language varieties, as opposed to prescriptive ones. The availability of knowledge from observing sign language data is attested by Kaul, Griebel and Kaufmann (2014), who report on transcription as a tool for increasing metalinguistic awareness, but for learners of German Sign Language as a second language. My own observations suggest that transcription is also a powerful tool for raising the metalinguistic awareness of deaf sign language users themselves.

As mentioned in 3.3.2, the experience of being recorded signing on camera was a novel one for most if not all informants. Given the relatively low prestige of sign language (1.4.4), and the tendency of some signers to switch to the grammar of a spoken language in formal situations, the collection of natural language forms for a research project is powerful symbolically because it emphasises the respectability of sign languages. In a couple of cases in particular, I have observed changes that point to the emergence of linguistic pride and an increase in signers' self-confidence. Additionally, some informants appeared to be proud to be filmed, and where filming took place in informants' homes, hearing family members sometimes seemed surprised that I wanted to film their deaf relative. This is tentative evidence for positive changes – small but incremental – in attitudes concerning sign language held by non-signers and by signers themselves.

The research has numerous practical applications for the sign community, including the creation of materials for teaching sign language to hearing people, such as friends and family members; the training of deaf sign language teachers; and the training of sign language interpreters. Although further transcription work is needed, the sign language corpus is also a valuable resource for applied linguistics work, and has the potential to increase the effectiveness both of teaching and of the knowledge and understanding of deaf sign language teachers (Jones & Palfreyman, 2014). Some of this work is already underway, including a sign language class for students at a local university in Solo, and one of the benefits of successive fieldtrips is the opportunity to share further information while giving community leaders the space for implementation and avoiding dependency on the researcher; a similar observation is reported by Karin Hoyer (2013:108).⁶⁶

One of the aims of this investigation has been to conduct research in a way that delivers multiple benefits. For example, I hosted a six-week visit to the iSLanDS Institute at UCLan for Muhammad Isnaini in the summer of 2012.⁶⁷ During his stay, Muhammad had contact with several other sign

⁶⁶ While conducting this investigation, and with the support and involvement of the deaf community, links have also been made with universities in Jakarta, Makassar and Solo. It has also been possible to work with sign community members on advocacy, organisational development, and funding applications.

⁶⁷ The visit was possible due to funding from a separate research project conducted at the iSLanDS Institute, and I am very grateful to Ulrike Zeshan for masterminding the visit, and also to Keiko Sagara and Paul Scott for their support. Muhammad has since shared new skills and knowledge with several hundred deaf and hearing Indonesians in universities, NGOs and deaf organisations.

languages, and learnt some International Sign.⁶⁸ As well as responding to my queries related to data analysis, he also took part in a programme of activities, including visits to deaf organisations, discussions with sign language interpreters, and the chance to participate at an international workshop on capacity building for sign communities. The South→North orientation of the visit thwarted the common conventions of fieldwork – where the researcher visits the fieldsite, and the informants stay where they are – and enriched the investigation as a whole in many ways.

Although research exists on linguistic awareness (see for example James & Garrett, 1992; James, 1996; Carter, 2003; Bolitho et al., 2003), this literature is restricted to the benefits of linguistic awareness for language acquisition, and little has been written about the benefits of such awareness in other domains. Given the observable impact that increasing metalinguistic awareness has on sign language users (Hoyer, 2013), I define ‘metalinguistic awareness’ as knowledge about language(s) and understanding of the implications of this knowledge for language users. As the metalinguistic awareness of sign language users increases, they gain more confidence about the parity of sign languages with spoken languages, and a better understanding of the linguistic rights that deaf people have, developing stances that reflect the complexity of the linguistic situations that deaf people face. In Figure 3.12, I report some of the indicators of metalinguistic awareness that I have observed in the field.

Figure 3.12.
Indicators of metalinguistic awareness observed during the course of fieldwork.

	linguistic insights	implications	rights
	sign languages exhibit variation, as do spoken languages	variation is not problematic; variants have an equal value	all have the right to use their own variety of sign language
	signed and spoken modalities each have their own ‘affordances’	spoken languages can be interpreted into sign languages, and vice versa	deaf sign language users have the right to accessible information
	sign languages are acquired by deaf children naturally	early acquisition of sign language supports cognitive development	deaf children should have contact with the sign community
	people can have different levels of sign language proficiency	knowledge of sign language is valuable, and can be shared	sign language should be taught by deaf people who are proficient users
	sign languages have their own linguistic structure	the structure of sign languages is not the same as spoken languages	sign languages should be recognised as languages, and not be stigmatised

The increase in the metalinguistic awareness of sign language users, the documentation of sign language varieties, and the development of a community skill-base in research and applied linguistics are important conditions for the vitalisation of sign language varieties (Hoyer, 2013), the recognition of sign language (WFD, 1987; Ladd, Gulliver & Batterbury, 2003), and ensuring language acquisition for deaf children (Humphries et al., 2014). The latter is relevant in Indonesia given the large numbers of semilingual and non-lingual deaf children, especially in rural areas (1.3). As noted by McKee and Woodward (2014), deaf people need information in order to rebuild

⁶⁸ International Sign is a contact variety that has emerged and developed in settings such as international meetings of deaf people (Supalla & Webb, 1995).

their confidence and self-worth, yet this information is often systematically inaccessible. Through careful planning, ongoing partnership and accessible practices, sign language research has the potential to transform the situation of deaf signers.

Now that the research design is clear, the process of presenting and analysing data begins in earnest. In chapter 4 I draw upon sociohistorical evidence to sketch the history of contact between sign language sub-communities across Indonesia. This encompasses aspects such as deaf education, the development of the sign community, and the effects of language policy and planning. This analysis contextualises the linguistic and sociolinguistic investigation of chapters 5 and 6, and enables links between the Solo and Makassar varieties to become clear.

CHAPTER 4

A HISTORY OF CONTACT BETWEEN SIGN LANGUAGE SUB-COMMUNITIES ACROSS INDONESIA.

Chapter 4 covers the sociohistorical situation of the urban sign community in Indonesia, and focuses on connections that have emerged between sub-communities in different parts of the country. As well as providing contextual information for the chapters that follow, some examples are given to illustrate how these connections can lead to language contact. It is contended that the existence of networks *between* sign language sub-communities in Indonesia – and sometimes elsewhere – may help to explain similarities that occur in Indonesia’s urban sign language varieties. The literature currently offers very few details of this sign community, and details are presented here concerning the emergence and development of the sign community based on evidence from various sources, described in 4.1. The subsequent sections of this chapter are organised thematically, and deal with the development of deaf education (4.2), the sign community (4.3) and developments that have affected sign language directly (4.4).

One of the key findings in chapter 4 is that groups of sign language users in urban centres across Indonesia have not existed in isolation; on the contrary, there has been considerable contact between them. When viewing such groups on a national level, therefore, it makes sense to refer to an urban sign community that comprises several sub-communities:

the shared experiences of deaf people in different urban centres, and the language contact between them... are good reasons for referring to the existence of a single Indonesian sign community that comprises a network of sub-communities of sign language users in most, if not all urban centres across Indonesia (Palfreyman, forthcoming:3).

Of particular importance are the opportunities for language contact between different sub-communities of deaf sign language users, and these are identified throughout the chapter. In particular, the emergence and reinforcement of networks can be seen through practices as diverse as deaf education and migration, sports activities and chatting online. By the end of the chapter, it will be possible to draw conclusions about the likely origins and development of urban sign language varieties in Indonesia.

4.1. Sources of sociohistorical data

The data discussed in chapter 4 derive from three main types of sources collected during the field-trips: a sociohistorical mapping exercise; written documents obtained from the archives of schools, deaf organisations and individuals; and interviews with deaf individuals and Dutch missionaries who worked in deaf schools. The sociolinguistic mapping exercise was conducted in Jakarta with three members of the national board of Gerkatin – Bambang Prasetyo, Juniati

Effendi and Agus Subroto – over a period of three hours on 15 December 2010. I asked them about the following:

- i) the location and foundation dates of major residential deaf schools;
- ii) regional branches of Gerkatin and their foundation dates;
- iii) provinces that the three interviewees had visited themselves;
- iv) meetings of the national congress (and dates);
- v) national sports organisations and events;
- vi) any other known examples of contact between deaf people in different parts of Indonesia, including examples of movement within Indonesia.

Different coloured pens, along with lines and arrows, were used to capture this information on a map of the Indonesian archipelago which I had sketched on paper (80x110cm). This map is shown in Figure 4.1. These findings are built-upon and corroborated where possible by evidence from other sources.

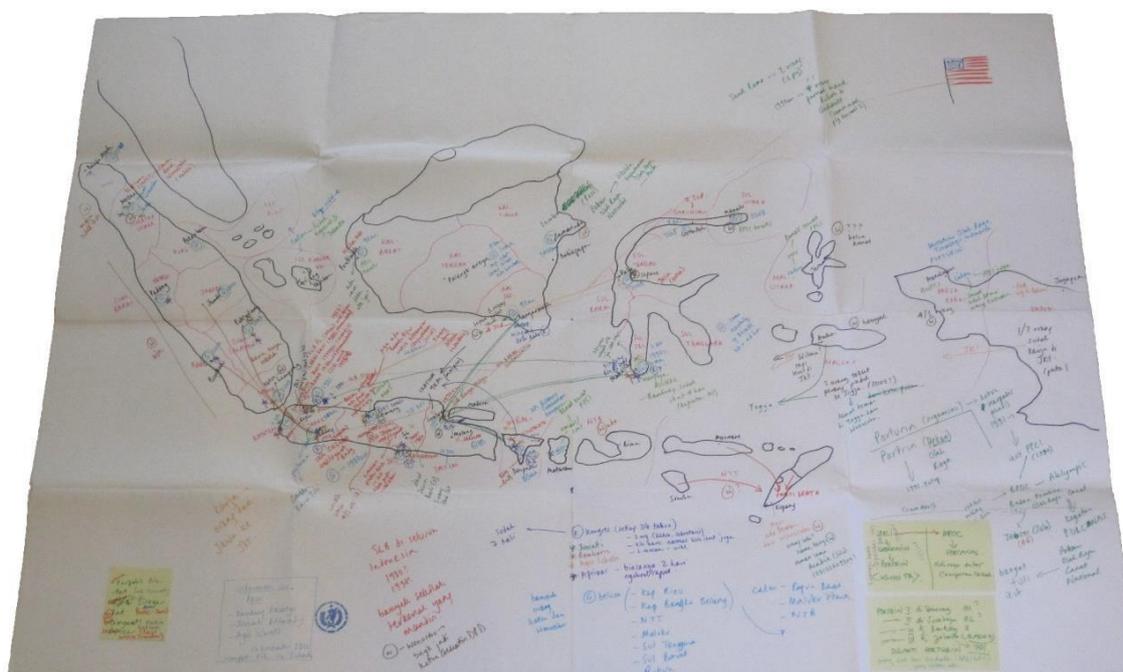


Figure 4.1. The outcome of the sociolinguistic mapping exercise, conducted 15 December 2010.

Copies of relevant written documents connected with the history of the sign community were made during visits to different schools and organisations on each field trip. Documents held in Gerkatin’s archive in Jakarta include details of the regional deaf organisations that predated the foundation of Gerkatin, and the provinces that participated in the eight meetings of the national Gerkatin Congress. Other sources obtained through my connection with Gerkatin include photographs from sports competitions and the autobiographical writing of Pak A.N. Siregar, one of the former leaders of the deaf community (Figure 4.2).



Figure 4.2. Pak Siregar (1938-2013), a key figure in early deaf organisation in Indonesia.

Schools that I visited in Bandung, Wonosobo, Solo, Makassar and Jakarta often had documents that provide a brief outline of their history, alongside their aims, and Brother Martin De Porres at Don Bosco school in Wonosobo kindly let me access his collection of newspaper cuttings and school alumni books relating to the Indonesian sign community, during a visit in August 2011. Sadly, most pupil registration books were unavailable, either having gone missing or having been damaged by floods, making it difficult to draw conclusions about the origins of pupils in the early days of the schools. Other organisational literature includes details of disability sport organisations, details of a census of deaf Indonesians from 1999, and newspaper clippings concerning SIBI (1.2.2). An online search for relevant material resulted in further information, such as a request made in 1930, in a magazine for Dutch expatriates, for donations to establish a deaf school in Bandung, and a blogpost that describes the history of the deaf school in Medan.

During all field trips, I conducted filmed interviews with members of the sign community, and these data have been triangulated with findings obtained from the mapping exercise and documents. Examples of topics that were covered in interviews include:

- experiences of schooling from the 1950s to the 2000s, including the attitudes of teachers to sign language;
- practices linked to SIBI, such as participation in a SIBI competition;
- the origins and subsequent trajectories of deaf organisations;
- gatherings of deaf people for art, cultural, scouts or sports events;
- experiences of migration within Indonesia; and
- the use of information and communications technology to meet other deaf people (for example on Facebook and via 3G mobile phones).

Interview extracts presented in chapter 4 have been carefully translated and, in the interests of concision, questions and prompts have been omitted in most cases. In addition to interviews that I conducted, I also draw briefly upon a collection of oral interviews with missionaries entitled *Missie Verhalen* ('Mission Stories') held by the Catholic Documentation Centre at Radboud University. According to the summaries of these interviews (Prent, 1989), three refer to working

with deaf people in Indonesia (KMM47, 321 and 615), and these have been checked for references to deaf education.⁶⁹

In order to improve the reliability of the analysis presented in this chapter, findings from one source have been corroborated as far as possible with other sources. For example, details reported in interviews and during the mapping exercise have been validated by checking documentary sources, and my observations have been tested using interview questions. Information gleaned from documentary sources has also been cross-checked where possible, and secondary sources have been corroborated using primary sources where these are available, although in some cases the documentary record is silent, fragmented or non-existent, and reports from community members are the only remaining sources of evidence.

4.2. The development of deaf education

4.2.1. Foundation of private deaf schools (1930s onward)

It is difficult to know whether the emergence and use of an indigenous sign language predates the foundation of the first deaf schools in Indonesia. Although it is very rare for deaf Indonesians to have deaf parents (see 1.3), it is more common for them to have older deaf siblings, and where a family has two or more deaf members, homesign may develop (Frishberg, 1987; Van Deusen-Phillips et al., 2001). Homesign is a gestural communication system that develops in the absence of linguistic input from other signers (Senghas, 1995; Coppola & Newport, 2005). Additionally, where multiple deaf individuals in a rural area are in sporadic, unsystematic contact with each other, ‘communal homesign’ can emerge, and these incipient deaf communities may lead to the emergence of new sign languages (Zeshan, 2011:228). The existence of homesign and communal homesign is highly likely, but there is no evidence to indicate whether and how deaf individuals had contact with each other, or what forms were used for communication. The starting point for section 4.2 is therefore the foundation of deaf schools.

The first schools for deaf children in what is now Indonesia were founded by the Dutch. The origins of colonial initiatives aimed at providing an education came from a benevolent ‘Ethical Policy’ implemented from 1901 by the Dutch, who had been persuaded that the Netherlands owed the people of the Dutch East Indies a ‘debt of honour’ (Vickers, 2005:17). The earliest residential schools for deaf children in Indonesia are shown in Table 4.1, along with their foundation dates. All schools were founded by private means, and notably all but two of these schools are in Java. There is sometimes a delay between the onset of teaching activities and the opening of the first building(s), and in such cases, the date for the former is shown in brackets.

⁶⁹ I am greatly indebted to Mirjam-Iris Crox and Connie de Vos for listening to over eight hours of interview audio files, making notes on comments relevant to deaf education.

Table 4.1. Early schools established to teach deaf children (based on various sources such as school documentation, Gerkatın’s archival material, and information available online).

date	city/province	(original) school name	founders
(1930) 1933	Bandung/W Java	Doofstommen Instituut	Dutch
1938	Wonosobo/C Java	Dena Upakara	Dutch
1953?	Wonosobo/C Java	Don Bosco	Dutch
(1954) 1977	Surabaya/E Java	Karya Mulia	Dutch
(1952?) 1958	Makassar/S Sulawesi	YPPLB	Indonesian
1960	Solo/C Java	YAAT	Indonesian
1965	Medan/N Sumatra	Karya Murni	Dutch
1971	Yogyakarta/DIY	Rintisan	Indonesian
1975	Jakarta/DKI Jakarta	Santi Rama	Indonesian

The first school to be established was the *Doofstommen Instituut*, founded in Bandung in 1930 by C.M. Roelfsema-Wesselink, whose husband was a Dutch otorhinolaryngologist. She became aware of the lack of educational opportunities for deaf children through contact with her husband’s patients, and began to teach them informally (Siregar, 2011:5). Figure 4.3 shows an appeal for funding that Roelfsema-Wesselink placed in *Neerlandia*, the monthly magazine of the *Algemeen Nederlandsch Verbond* (an expatriate association in Bandung). This appeal makes it clear that blind children were already able to receive formal education in Bandung at this time. In April 1931, two teachers from the Netherlands arrived – D.W. Blueminck and E. Gudberg – and Blueminck became the director of the school (Siregar, 2011).⁷⁰

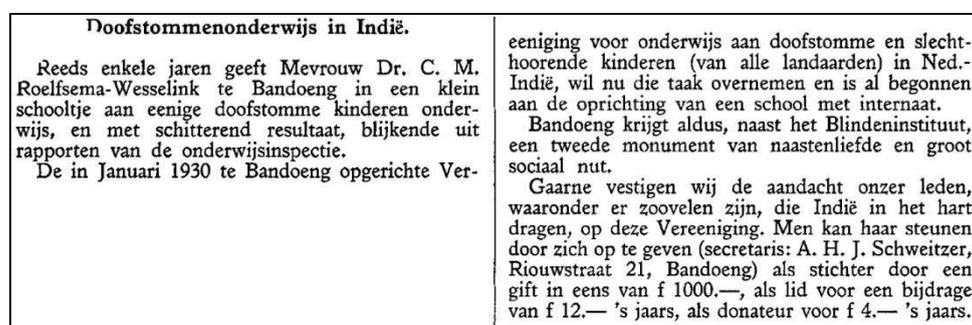


Figure 4.3. An article asking expatriates for donations to establish a deaf school.⁷¹

⁷⁰ *Profil Sekolah Luar Biasa Negeri Cicendo, Kota Bandung*, ‘Profile of the Cicendo State School for Special Needs, City of Bandung’; obtained on 14 July 2011, with thanks to Pak Indy Sahindi.

⁷¹ **The education of the deaf and dumb in the Indies.**

For several years Mrs. Dr. C.M. Roelfsema-Wesseling, who lives in Bandung, has been teaching deaf and dumb children in a little school, and with some magnificent results, according to the reports of education inspectors. In January 1930 the Society for the Education of Deaf-Mute and Hearing Impaired Children (of all nationalities) in the Dutch East Indies, is taking over this task, and has already started the foundation of a school with a boarding house. In this way, Bandung will receive, next to the Institution for Blind People, a second monument of charity that is of great social value. We are happy to draw the attention of our many members in the Indies to this Society. People can support it through a founding subscription (secretary A.H.J. Schweizer, 21 Rouwstraat, Bandung) by donating 1000 guildens at once, as a member by a donation of 12 guilders a year, or as a donator for 4 guilders a year.

In the Netherlands, the Christian church had a significant role in the provision of deaf education (Tijsseling & Tellings, 2009), and its involvement extended to Indonesia from the 1930s onwards. From 1909, the director of the deaf school in Sint-Michielsgestel was Monsignor Adrianus Hermus (Rietveld-van Wingerden, 2003:411). According to Indrawati (1999), many deaf children from abroad attended the Sint-Michielsgestel school, and this led Hermus to the idea of establishing a school for deaf children in Indonesia. As part of his case, Hermus used the findings of the census conducted in 1930 (see 1.4.3).

The appeal that Hermus made to the Bishops of Breda and Bois le Duc led to the first group of missionaries – Catholic Sisters from the Daughters of Mary and Joseph (Figure 4.4) – arriving in Java in February 1938. The nuns stayed in Bandung until mid-March (Koopmanschap, 1994:34; Patricia, 2006:3), and would almost certainly have had contact with the *Doofstommen Instituut*.



Figure 4.4. Sisters of Mary and Joseph in the Netherlands with Msgr. Hermus. From *Utusan*, Vol. 56, No. 11 (November 2006), 2.

Letters written in Dutch and Javanese were circulated across Java, and the nuns began their duties in 1938 with two deaf pupils; Dena Upakara school (Figure 4.5) was officially opened in February 1939 (Koopmanschap, 1994:35).



Figure 4.5. Dena Upakara school in Wonosobo.⁷²

⁷² Available from <http://ivdvariatie2.jouwweb.nl/172-onderzoek-en-internatioale-samenwerking-deel-1> (accessed 12 June 2014).

The Sisters were interned during the Second World War, but returned to Wonosobo in November 1950 (Koopmanschap, 1994:35). After being joined by the Brothers of Charity in 1956, a second school opened, and the schools were segregated along gender lines: Dena Upakara became the girls' school, and Don Bosco, run by the Brothers, was for deaf boys (ibid.).

Where did the children come from? Figure 4.6 is based on data in alumni reunion books for each school, and shows the birthplace of 1,329 pupils who entered the two schools in Wonosobo between 1950 and 1999.⁷³ These are categorised here according to whether the children were born in the same province as Wonosobo (Central Java), a different Javanese province, or a province outside of Java.⁷⁴

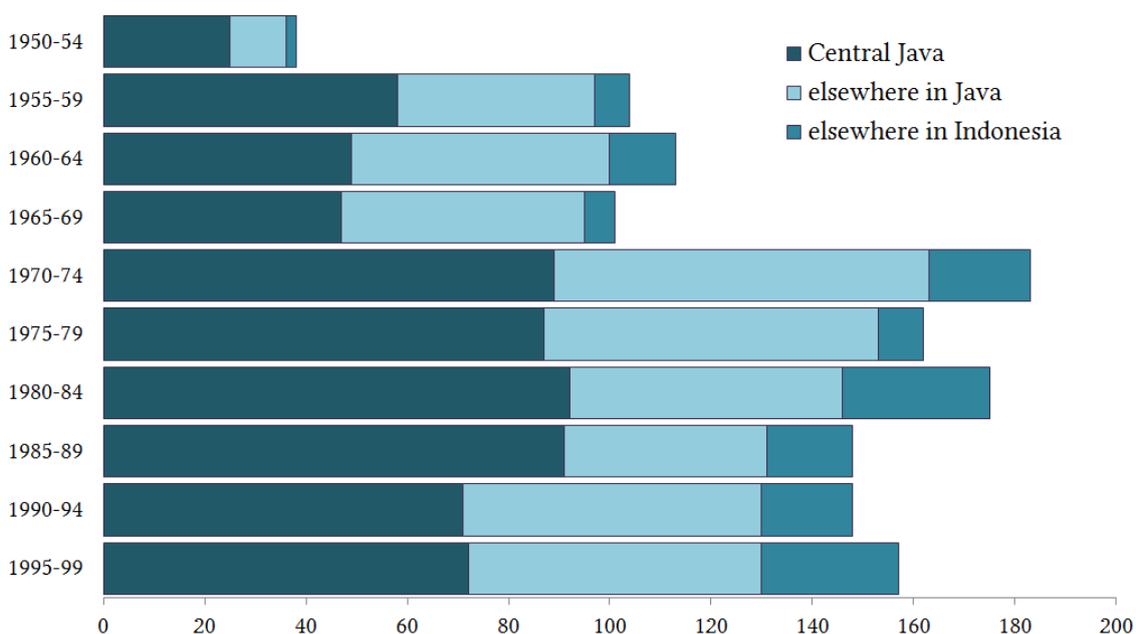


Figure 4.6. A graph showing the birthplace of deaf pupils who entered Dena Upakara and Don Bosco schools in Wonosobo between 1950 and 1999 ($n = 1,329$).

In the first five years after teaching resumed (1950-54), the majority of pupils came from the province where the school was located, with most of the remaining pupils coming from other Javanese provinces. Only two pupils came from outside of Java. Although no data are available for the years prior to the Second World War, it seems likely that these trends also hold true for the years 1936-1939. From 1955 onwards, however, the number of pupils from outside of Java steadily increased, and ultimately 11.1% of the total intake between 1950 and 1999 (around 148

⁷³ The alumni reunion books are entitled *Yayasan Dena Upakara Dalam Kenangan* (1998) and *50th SLB/B Don Bosco, Wonosobo* (2005).

⁷⁴ Note that in a few cases no data are available regarding birthplace, and so a small number of pupils are excluded from this analysis. In equating 'birthplace' with the place where a child spent his/her early years, I am also making an implicit assumption that may in some cases be incorrect. I am very grateful to Muhammad Isnaini and Richard Ariefiandy for their support in analysing these data.

pupils) came from without Java. This includes 66 from Sumatra, 34 from Kalimantan, 21 from Sulawesi and 16 from the eastern part of Indonesia (of whom 10 came from Papua or West Papua).

The teaching methods of the early schools were oral, with no sign language used in the classroom, and this was a direct result of the policies used in the Netherlands at the time. In an interview conducted on 21 June 2011, Pak Siregar recalls arriving at the *Doofstommen Instituut* in 1950, at the age of 11, sitting on the headteacher's knee, and having his speech tested to see whether he could be accepted by the school. The schools in Wonosobo were also strongly influenced by the oral practices of the Sint-Michielsgestel school – its director, Monsignor Hermus, was a staunch advocate of oral education who 'defended speaking as a method of instruction on social, pedagogical and religious arguments' (Rietveld-van Wingerden, 2003:411). Sister Martinetta, who worked at Dena Upakara from 1953, had spent time in Sint-Michielsgestel in order to become acquainted with the work that she would do. She reports that 'sign language was not allowed... we used lipreading' (KMM321/01).

In spite of this, it is clear that sign language was used to some extent by children outside of the classroom. Pak Siregar remembers his first encounter with other deaf children at the *Doofstommen Instituut*, and describes how other deaf children were signing fluently to each other:

- (2) *I went to the school [in Bandung] with my uncle, this was in 1950. There were lots of children there... and they were signing. I was curious, and I watched them. They were signing to each other, and they understood each other, but I didn't understand. The adults [his uncle and the staff] were talking to each other for a long time, but I didn't know what they were saying, so I was quiet...*

The deaf children were brave and tapped me on the shoulder, they pointed at me, and asked what the story was, and if I was deaf. I pointed at my ear, and indicated that I didn't understand sign language. They asked if I could speak, I said no... Once I had registered there, I learnt sign language from the other children.

Interview with Pak Siregar, Jakarta, 21 June 2011.

As with the school in Wonosobo, the running of the *Doofstommen Instituut* was interrupted by the Second World War, and it closed in 1942 when Java was occupied by Japanese armies.⁷⁵ The *Instituut* only reopened on 1 June 1949, yet Siregar reports that deaf pupils were using sign language the following year. Even though sign language was not used in the classroom, therefore, it is clear that it was developing between the pupils themselves. Educative institutions for deaf children have been described as 'forums through which Deaf identities emerged and deaf people could organise collectively' (Cleall, 2013:5), and Gulliver (2008) contends that institutions for deaf people create what he refers to as 'DEAF space', which is unmistakably differentiated from the hearing world, and full of visual voices.

⁷⁵ *Profil Sekolah Luar Biasa Negeri Cicendo, Kota Bandung*, ii.

Several alumni of the Wonosobo schools have described the use of corporal punishment in response to the use of sign language, which has clearly stigmatised sign language in the minds of some alumni. Only in the twenty-first century has the education policy at Dena Upakara and Don Bosco officially permitted the use of sign language (Maria Brons, personal communication, 25 April 2014). The policies implemented by deaf schools have led to a variety of preferred communication methods among their alumni. Although the communication method can depend somewhat on factors such as the setting, the interlocutors, and so on, not all alumni use sign language, and I have observed some deaf alumni using oral methods almost exclusively.

4.2.2. National and transcolonial links in deaf education

There is considerable evidence that points to the connectedness of the early deaf schools. The photograph in Figure 4.7 (from Indrawati, 1999:13) shows Blueminck, the director of the Bandung *Instituut*, with his wife and Monsignor Hermus in Sint-Michielsgestel, in 1937. It was the establishment of *Dena Upakara* in Wonosobo, not the *Instituut*, that was supported by Sint-Michielsgestel, but nevertheless, the fact that Blueminck visited Hermus back in the Netherlands indicates that there were links between the two schools.



Figure 4.7. *Blueminck and his wife with Monsignor Hermus, in Sint-Michielsgestel* (from Indrawati, 1999:13).

Connections between schools sometimes developed between missionaries working in different parts of Indonesia. Karya Mulia in Surabaya and Karya Murni in Medan were also established by Catholic missionaries, and although they were run by different congregations, they sometimes worked together to share expertise. The Wonosobo schools were clearly regarded throughout the country as centres of skills and knowledge on deaf education. The Karya Murni school in Medan (Sumatra) was run by the Sisters of Saint Joseph, and when a father asked them to accept his two deaf children, two sisters were sent to Wonosobo in 1964 to learn about deaf education.⁷⁶

⁷⁶ 'The History of the Foundation of Karya Murni', a post on the Yayasan Karya Murni Medan blog at <http://karyamurni.wordpress.com/2012/08/08/sejarah-berdirinya-yayasan-karyamurni> published 8/8/2012.

Bandung was also regarded as an important centre of expertise in the early years of deaf education, because of the *Doofstommen Instituut*. Pak Siregar describes how hearing people would come to Bandung from Sumatra, Kalimantan and Sulawesi to learn how to teach deaf children, and then return to their own city to establish a school for deaf children. Bandung also had a training centre for special education teachers, the *Sekolah Guru Pendidikan Luar Biasa*, which was founded in 1954.⁷⁷ One of those who trained in Bandung was St. Rahma, who went to Makassar in 1952 and began teaching deaf children, establishing the YPPLB school with 11 deaf pupils in 1958.⁷⁸ Little is known about the early days of the YAAT school (founded in Solo in 1961), but it is highly likely that links also existed between Bandung and YAAT. Certainly, the existence of schools such as YAAT was known outside of Java:

(3) **Jayeng**

In the 1990s, a deaf man from Papua came to study at SD [elementary] level at YAAT in Solo. After that, he went to Kalibayem school in Yogyakarta for SMP [junior high], then he went to a hearing school. I didn't know him at YAAT because I went to YRTRW [a private deaf school in Solo], but I remember he was there at Kalibayem. Another deaf Papuan came here for her schooling. Several people from Papua went to Wonosobo.

Opik

At that time, when YAAT was in the alun-alun [the main square in Solo] deaf people from different parts of Indonesia were sent to YAAT. But once the school had moved to new premises, this did not seem to happen as often.

Interview with Jayeng and Opik, Solo, 17 August 2011.

The national government assumed responsibility for the provision of education for disabled children through SLB-N (*Sekolah Luar Biasa Negeri*, 'State Schools for Special Education').⁷⁹ In Makassar, SLB Pembina was established in 1985, while SLB-N Solo was set up in 1997. As local options for the schooling of deaf children became more available across Indonesia, the intake of the early schools also became more local, as indicated by evidence from the logbooks of the *Doofstommen Instituut* in Bandung, which later became SLB Cicendo. Of 78 pupils who entered the school between 1999 and 2004, 65% came from the same city (Bandung). Just over a quarter came from outside the province of West Java, and only 15% from other islands.⁸⁰ However, many schools for deaf children continue to have dormitories (*asrama*) because even where a province has its own special schools, these tend to be many miles away from the rural areas (*kampung*) where most deaf children live. Furthermore, some private schools continue to take pupils from far away, especially schools that have a strong reputation, such as Wonosobo.

⁷⁷ *Profil Sekolah Luar Biasa Negeri Cicendo, Kota Bandung*, ii.

⁷⁸ *Selayang Pandang SLB-B YPPLB Makassar*, 'An overview of SLB-B YPPLB Makassar', 6.

⁷⁹ I have not used the literal translation, which would be 'Extra-Ordinary State School'.

⁸⁰ This is based on data in the school's pupil registration books. Siregar reports that the proportion of pupils from other provinces and outside of Java was greater in the past, although unfortunately the first six pupil registration books covering the period 1930-1999 are missing, so it is impossible to confirm this.

According to the Indonesian government's *List of Tables of Special School Education 2008/2009*, there are 101 deaf schools in Indonesia, with 1,245 teachers and 5,235 deaf children. The vast majority of these schools are privately run, and only two are run by the government. Eighty-five schools are in Java, and 16 out of 33 provinces have no deaf schools. According to these government statistics, 32.7% are described as being in 'bad' physical condition. There are a further 1,410 schools for disabled children in general, which deaf children can usually attend in the absence of a deaf school, but unfortunately it is not possible to tell what proportion of the 61,247 children who attend these schools are deaf. The Indonesian Health Ministry estimated in the 1990s that there were up to 600,000 deaf children in Indonesia, and stated that only 10% go to school (Wright, 1994); this compares with a national average of 94.1% for children aged 7-12 (BPS, 2014). Most schools that accept deaf children are in or near urban centres, and the majority of deaf children in remote, rural areas do not have the opportunity to go to school.

4.2.3. The likely origins of the two-handed alphabet

Currently, at least two manual fingerspelling alphabets are used in urban sign communities (see Appendix 3).⁸¹ As with other sign languages, these alphabets derive from contact with written languages, and are used to spell names and places letter-by-letter that do not have 'sign names' (Adam, 2012). They may also serve as a source for signs that have become lexicalised. The origins of the one-handed alphabet, which seems to have been used in Indonesia from the late 1970s, are described in 4.4.1. The two-handed alphabet appeared much earlier, and it is possible to substantiate the hypothesis that the two-handed fingerspelling alphabet currently used across Indonesia was introduced by Dutch teachers at the deaf schools in Bandung and/or Wonosobo.

The schools in Bandung and Wonosobo are known to have used oral teaching methods (4.2.1), which forbade the use of sign language and forced deaf children to communicate through lipreading and the use of speech. However, fingerspelling may have been introduced at some point as a means of teaching children to spell – the use of fingerspelling to supplement and reinforce oral teaching methods used in classrooms is sometimes referred to as *neo-oralism* (see Paul, 2009:181). The second edition of Simon Carmel's book of international hand alphabet charts (Carmel, 1982) features the two-handed alphabet shown in Figure 4.8, described as 'German fingerspelling', and this is almost identical to the two-handed alphabet used in Indonesia.

Ostensibly, the letters 'A', 'E', 'H' and 'Z' in the alphabets shown in Figure 4.8 are unrelated, but the German 'A' and 'E' also occur in Indonesia as variants, which means that only two letters ('H' and 'Z') are different. Sometimes similarities arise between alphabets because manual letters

⁸¹ In June 2009, deaf signers in Ruteng (see Appendix 4) told me of a third alphabet which differs considerably in some respects. It is highly likely that other alphabets exist around the archipelago.

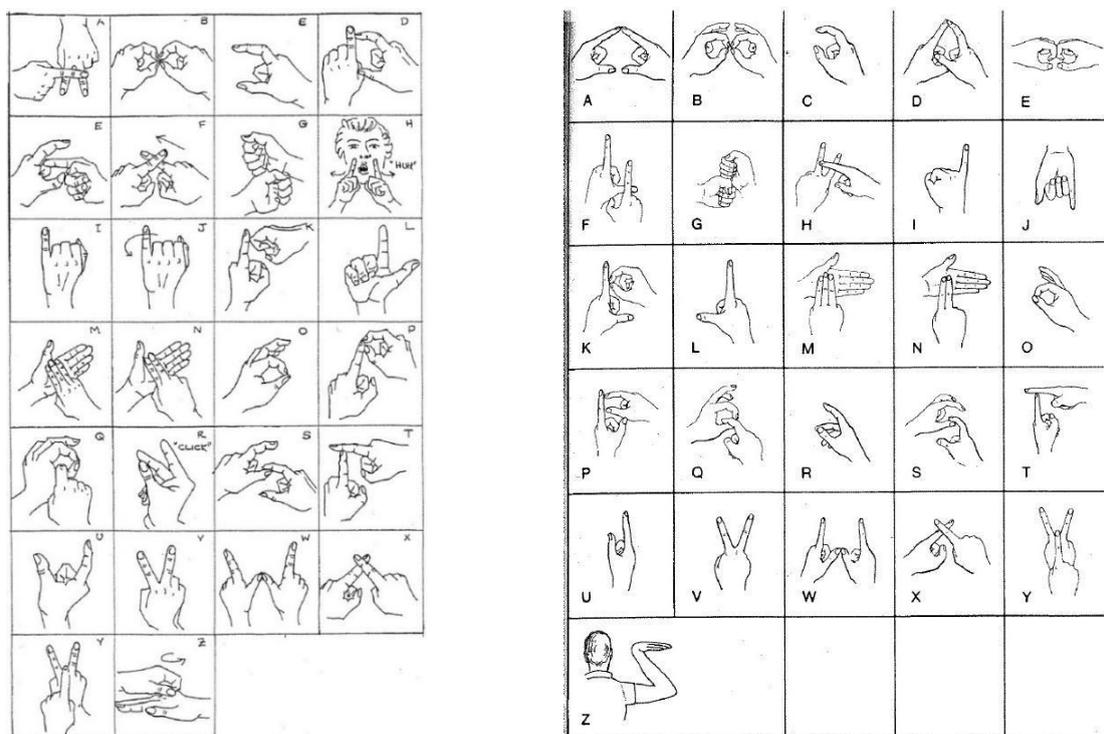


Figure 4.8. Charts showing 'German fingerspelling' (left) and 'Indonesian fingerspelling' (right), from Carmel (1982).

are iconic (Sutton-Spence, 1994:84), but from a cross-linguistic perspective, two of the manual letters that occur in both alphabets are distinctive: 'R', which is articulated by means of a finger click, and 'S', which is articulated with two interlocking hands held with a 'C' handshape.

Sutton-Spence (1994:80) notes that the German alphabet is 'known by many hearing German school children', and it transpires that a very similar alphabet – including 'R' and 'S' – was used by hearing children in the Netherlands in the 1950s (Victoria Nyst, personal communication, 22 August 2014).

That the use of a manual alphabet by hearing children should be widespread across parts of Germany and the Netherlands is not surprising, since fingerspelling 'was originally designed by hearing people as an alternative to speech' (Sutton-Spence, 1994:37). Manual alphabets

were a normal part of *both* hearing and Deaf communication for thousands of years... It is only recently that manual alphabets have become associated primarily and often exclusively with the deaf (Branson et al., 1995:56-7).

Given that most of the expatriate staff who taught in the deaf schools of Bandung and Wonosobo were hearing and Dutch, it seems likely that they may have been responsible for introducing this alphabet into the classroom, and into the sign community more generally. Cleall (2013:9) emphasises the importance of transnational and transcolonial networks in the spread of knowledge that is of relevance to deaf people, and given the global spread of other manual alphabets (Branson et al., 1995; Schembri et al., 2010) it would not be surprising if the two-handed alphabet used by Indonesian sign communities had been introduced to Indonesia in this way.

4.2.4. ‘Schoolization’ and multidialectalism

On leaving school, many – though not all – pupils returned to the area from where they came, and this can account for the spread of sign language varieties across Indonesia. In an interview on 17 August 2011, Jayeng describes moving from Solo to Yogyakarta in 1991 in order to attend junior high school there (interview, 17 August 2011). Once there, he was told by the teachers not to use the two-handed alphabet, but rather the one-handed alphabet which had been in use in some Indonesian schools since the early 1980s (see 4.4.1). On returning to Solo, he and his classmates then spread the use of this one-handed alphabet within the sign community in Solo. This is an example of what Quinn (2010) refers to as the ‘schoolization’ of sign language – the way in which deaf schools enable the emergence and spread, or diffusion, of variants (see also Stamp, 2013; Eichmann & Rosenstock, 2014).

An interview with Siti and Wati, two deaf women in Jakarta, is revealing for what is implied about differences between varieties in deaf schools and those back home:

(4) **Nick**

Do you have friends from other parts of Indonesia?

Siti

Yes! From Bengkulu, and Aceh. I went to school here in Jakarta. They would come to school here, and then when they finished school, they would move back to where they came from. We met at the school in Lebak Bulus.

Nick

Did they used to stay in the school dormitories?

Siti

No, they would stay with relatives. For example, if there was an uncle or aunt living in Jakarta at the time, the parents would ask them to help look after them.

Wati

Deaf people would come to our school (Santi Rama) from Aceh, Makassar, Padang... When they finished, they would go back home again.

Nick

Have you met them since?

Siti, Wati

Yes, we have!

Nick

Was their sign language still the same [when you met them again]?

Wati

No, it was different somehow...

Siti

In the past, at school, we were all together, and our signing was the same. Then we left school and people left Jakarta and went back to where they came from. After a while, when I met them we would be chatting, and I would be surprised because they would use some different signs I had not seen before. I found myself asking them, ‘What does that

*sign mean?’ They would tell me, and I would understand then, but these were different signs to the ones we all used in Jakarta before...
 We would be talking, and someone would be signing. I would watch, and then I would see a sign that I didn’t recognise. So I would ask them what it was, and they would explain ... So there were some different signs. But I’d think to myself, ‘It’s ok, it’s not a problem. I can learn those new signs, and remember them. If I forget them, I can always ask, and learn them again.’*

Interview with Siti and Wati, Jakarta, 21 June 2011

A deaf child’s proficiency in gestural communication on entering school depends upon several factors, such as her age upon entry, and whether she has had any experience of homesign (see 4.2.1), or any prior contact with other signers in the local community. Once at school, as Siti notes in (4), the sign language variety stabilises, as children acquire the signs used by their peers, especially those who are one or two years older. After or (in some cases) during their schooling, children return home and, if they meet with signers who live nearby, are exposed to the local sign language variety, which may or may not be relatively similar to the school variety.

Notably, on meeting her friends again, Siti says that only *some* of her friends’ signs have been replaced by other variants. This suggests that the use of many of the signs acquired at school continues, and/or that her friends switch back to the school variety on meeting her (Palfreyman, forthcoming). In either case, there is considerable, multiple contact between two or more geographically distant varieties, and this process may exert a converging influence on sign language varieties. In Indonesia, the process by which sign language features are diffused, sometimes across large distances, is represented in Figure 4.9.

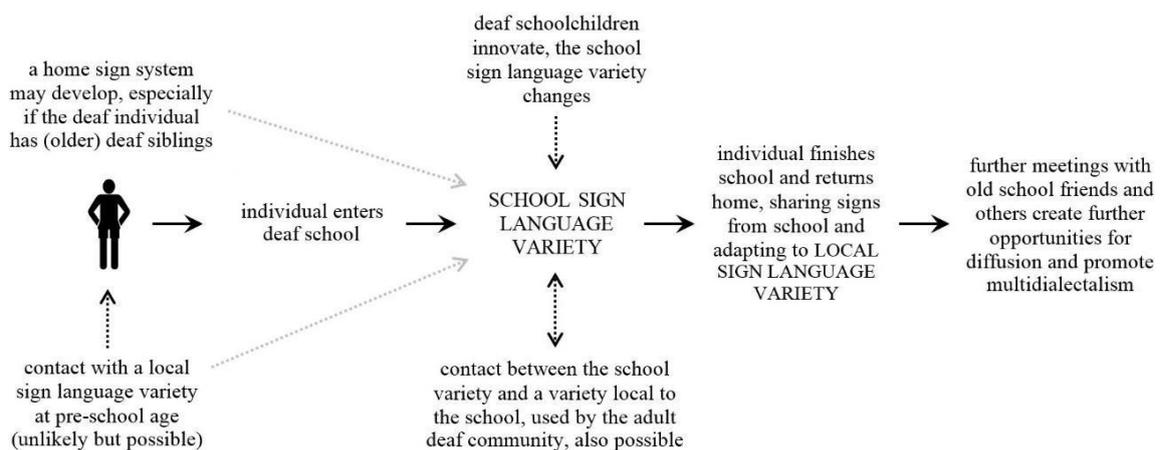


Figure 4.9. The schoolization process by which sign language features are diffused.

Schoolisation produces multidialectal individuals – those who have acquired different features, such as lexical variants, which are associated with different regional varieties (Stanford & Preston, 2009; Carvalho, 2012).

The model presented in Figure 4.9 is particularly appropriate for residential schools in the early deaf schools, where individuals had relatively little contact with other varieties during their schooling. However, as the number of deaf schools have increased, other models have emerged. First, where one city has several different deaf schools, a pool of variants emerges. For example, there are three deaf schools within the city of Solo, and some of these schools have their own lexical variants for numerals (Palfreyman, forthcoming). Some of these have fed the pool of variants known and used by signers regardless of the school that they attended, and this has led to an unusually high number of variants for numerals in Solo (ibid.). A second model is where deaf people from the regencies around a city attend a deaf school in that city, which may lead to the exchange of variants within and without the city (see 4.3.3 for further discussion of this).

4.3. The development of the sign community

4.3.1. Emergence of local deaf organisations in Java (1960s onward)

Attempts to establish local deaf organisations were made throughout the 1960s and 1970s, gradually expanding in terms of the area that they sought to represent. At least initially, organisations were based on networks of deaf people that had been formed at the early deaf schools described in 4.2.1. According to a document in the Gerkatin archives,⁸² the first organisation was named Sekatubi (*Serikat Kaum Tuli Bisu Indonesia*, ‘Indonesian Deaf-Mute Community Association’), and was formed in January 1960, in Bandung.

A conference was held in Semarang from 20-23 May 1961 with 32 people from across Java, and following this it was decided to establish a new organisation. The movement that emerged was called AMKTRI (*Angkatan Muda Kaum Tuli Republik Indonesia*, ‘Deaf Community Youth Movement of the Republic of Indonesia’), and had two branches in West Java and Central Java (it is reported that the East Javanese attendees were not yet ready to set up an organisation). The West Java branch of AMKTRI initially had 78 members, and its activities included securing sewing machines from the government’s Social Department, and supporting small businesses in Bandung. However, the West Java and Central Java branches of AMKTRI soon foundered due to various difficulties, including a lack of defining activities, and members who moved around.

The next organisation to be established was the GKTI, *Gerakan Kaum Tuli Indonesia* (‘Indonesian Deaf Community Movement’), at a meeting held in Jakarta from 14-16 March 1965. Two deaf Indonesians who had studied overseas, Irmin Tjokrohadi-surjo (in the Netherlands) and Adrian Pietersz (in the US), attended this meeting and were elected as board members. A larger meeting followed on 22 May 1966, attended by 99 people from Semarang, Solo, Bogor, Bandung

⁸² *Sejarah Pendirian Organisasi Kaum Tuli*, ‘History of the foundation of deaf community organisations’, 13 (Gerkatin archives).

and Tangerang (all cities in West and Central Java).⁸³ At this meeting, a new acronym – Gerkatin – was adopted for *Gerakan Kaum Tuli Indonesia*. The aims of Gerkatin were to provide vocational training and find employment opportunities for deaf people, to organise sports competitions, and to support deaf victims of natural disasters, such as the flood that struck Solo in 1967.

In the 1970s, a series of new boards for Gerkatin were elected, and the regional scope of Gerkatin began to broaden. In 1974, a meeting in Tretes, East Java, included representatives from Bali, which is the first record of participation from outside of Java. Regional branches of Gerkatin began to be established, the earliest of which were in Jakarta (1971), West Java (1972) and Central Java (1973). Several other deaf organisations were established in the 1970s by other parts of Java, including *Persatuan Tuna Rungu Semarang* (PTRS), *Perhimpunan Tuna Rungu Yogyakarta* (Pertry), *Perhimpunan Tuna Rungu Indonesia* (Pertri) and *Perkumpulan Tuna Rungu Surabaya* (Pekatur), though all but Pertri are thought to have been short-lived.⁸⁴

Two conclusions can be drawn from the emergence of local deaf organisations in Java. First, the meetings held in Semarang (1961) and Jakarta (1966) show that contacts formed at deaf schools endured beyond school age, and deaf people from different parts of Java came together from the 1960s onwards. Secondly, although several of the organisations described in this section claimed to be ‘Indonesian’, their activities and membership were limited to Java, and no evidence has been found to suggest that deaf organisations were forming in other parts of Indonesia at this time. This implies that urban sign communities in the main Javanese cities experienced extensive language contact in the 1960s and 1970s at a time when sign language varieties elsewhere remained more isolated.

4.3.2. Gerkatin, the Indonesian Association for the Welfare of the Deaf (1981–)

The first national congress of Gerkatin was held from 20-23 February 1981, and was attended by members from across Indonesia ‘from Sabang to Merauke’ (see 1.4.1).⁸⁵ In reality, however, the congress was attended by participants from the provinces of D.K.I. Jakarta, West Java, Central Java, East Java and D.I. Yogyakarta.⁸⁶ Over time, successive congressional meetings have come to include more provinces from outside of Java, as shown in Figure 4.10.

⁸³ This meeting took place at the house of Tjokrohadisurjo, whose father had been a government minister under the previous president, Sukarno.

⁸⁴ *Profil Organisasi Gerkatin*, ‘Gerkatin Organisational Profile’, i (Gerkatin archives).

⁸⁵ *Sejarah Pendirian Organisasi Kaum Tuli*, 48.

⁸⁶ *Daftar Riwayat Kongres Nasional Gerkatin*, ‘List of Historic Gerkatin National Congress Meetings’, (Gerkatin archives).

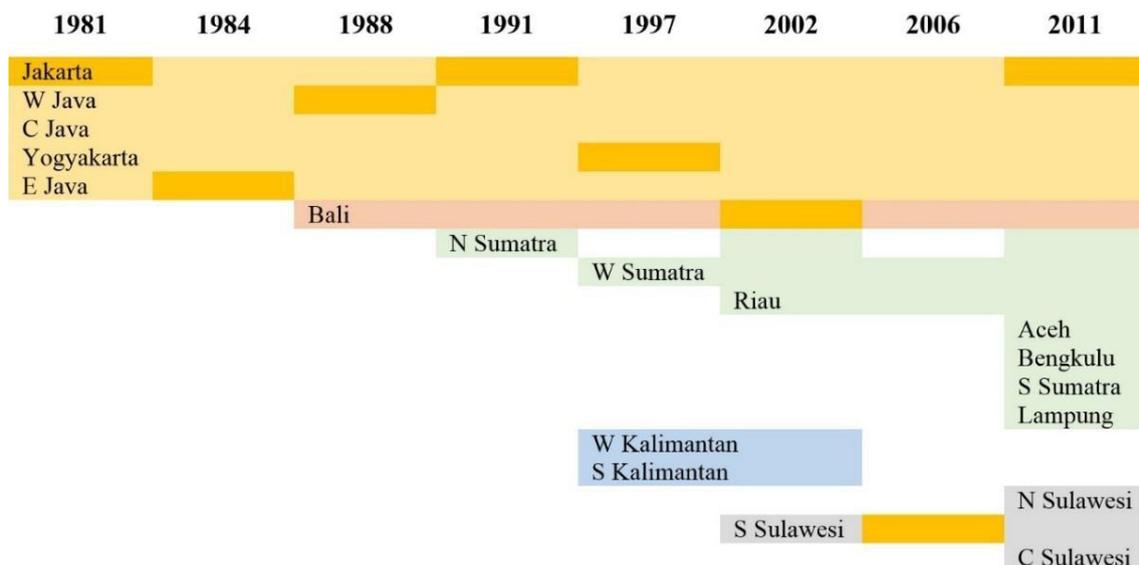


Figure 4.10. Congressional meetings of Gerkatins and the representation of regional Gerkatins, grouped by colour according to island. The province that hosted each congress is indicated with a gold shade. (Based on the Daftar Riwayat Kongres Nasional Gerkatins – see footnote 86.)

Figure 4.10 shows that sign language users from Javanese provinces have been meeting at congress for far longer than those from other provinces, and as of 2011, only 18 out of 34 provinces have ever been represented. However, the number of established regional Gerkatins participating in the national congress has steadily increased to include provincial organisations from other parts of Indonesia, and two of the three most recent congressional meetings have taken place outside of Java. Even though almost half of the provinces have not officially participated in a congress, sign language users from some of these provinces have attended congressional meetings and other meetings that Gerkatins has arranged.

Jayeng Pranoto lives in Solo, but was studying in Bali in 2002, when the sixth national congress took place. He helped out with the organisation of this congress, and describes what he observed:

- (5) *The congress in Bali lasted for about a week, and I met deaf people from different parts of Indonesia, including Makassar and Samarinda (Kalimantan). In congress, people seemed to communicate quite easily, but they tended to follow the Jakarta signs for things, and they also relied quite a lot on mouthings.*

Interview with Jayeng, Solo, 17 August 2011.

Jayeng’s observation about the use of signs from the Jakarta variety as a kind of *lingua franca* corroborates my own observations at the eighth national congress in Jakarta, in June 2011. From the contact that has been identified so far between urban sub-communities of sign language users across Indonesia, what is striking is that at least one of the parties in contact has usually been Javanese. Consequently, Javanese sign language varieties have come to exert more influence over varieties beyond Java. This actually parallels the situation for Indonesian, which has been influenced much more by Javanese than by other spoken languages (Bertrand, 2003:265), and

hence the dominance of Javanese sign language varieties is perhaps not surprising, given the cultural, political and economic strength that the island of Java retains.

As of May 2014, all but a handful of Indonesia's 34 provinces had a regional branch of Gerkatin. It is evident from the sociohistorical mapping exercise that board members from the national Gerkatin have visited many parts of Indonesia, and as of May 2014, 20 provinces had been visited by the current president, vice-president or secretary. Besides regional Gerkatins, the number of *local* Gerkatins is also steadily increasing, and more local Gerkatins are taking part in meetings at national and regional levels.⁸⁷ This promotes further links between local and national communities through which sign language variants can spread, and sign language varieties converge.

4.3.3. Internal migration and social contact between sign sub-communities

Many sign language users have moved around the archipelago, temporarily or permanently, and for several reasons. It is already noted above that deaf people have been brought together by schools and deaf organisations. This section explores some of the other motivations that have led signers to move around the archipelago, including searching for employment, competing in sports, or participating in cultural events such as national scouts meetings. Where possible, this movement is discussed in terms of its impact on language varieties.

Several interviewees moved around Indonesia with their parents when they were younger. Herlina (interviewed in Solo, 12 November 2010) is 20 and was born in Biak, Papua, in the easternmost province of Indonesia. Her father works for the Indonesian Air Force, and because of this the family moved to East Java when Herlina was 10. She attended two deaf schools there, and at the age of 16, she and her family moved to Solo, where she had been attending school for four years at the time of the interview. According to one of my research assistants, Herlina's data contain several 'East Javanese' signs that are not usually used in Solo.

During the mapping exercise it was reported that many marriages have taken place between deaf people living in different parts of Indonesia. In particular, there have recently been several marriages between people in Sumatra and Java. As well as meeting in person – for example at sports events, further education courses or simply travelling – some couples also came to know each other through technology. Santi is 31, and met her Makassarese husband when she was living in Java. Although her parents were born in Sulawesi, her father works for the police, and they moved to Java when she was five years old. She describes how, through communication technology, she came to meet a man from Makassar, whom she then married.

⁸⁷ An example of this is Gerkatin's second National Work Meeting (Rakernas II) held in Denpasar, Bali, 5-9 September 2013.

- (6) *We got to know each other through 3G. He came to know about me through gossip – mutual friends had told him about me. He sent me an SMS, and I didn't know who he was, I didn't know the name. I thought, who is that? I asked, are you deaf or hearing? He said he was deaf, like me. I learnt that he wanted to be my boyfriend.*

He was from Makassar, and we kept chatting on 3G, day after day. Then my mother and I flew over here and talked with him and his family. They asked me if I wanted to marry him... in the end, I said yes, I'll marry him. So we got married in 2008. Then my mother and my older sibling went home, and I stayed here...

When I arrived in Makassar, I found the sign language here confusing. I had to ask them to slow down! Then I knew what they were saying... So now I can use both Java signs and Makassar signs! I can use them both.

Interview with Santi, Makassar, 5 August 2011.

Santi still remembers many of the variants used in Jakarta and Bandung, where she went to school, in addition to those used in Makassar. As is apparent in the interview, the movement of deaf people from one city or province to another creates opportunities for signers to become multidialectal (see 4.2.4).

Another consequence of signers moving around the Indonesian archipelago is that, through language contact, variants from one area can be transmitted to another. In the CISLV, a Solonese informant, Ari, uses a sign to mean 'deaf' that I had not seen before. Ari tells a funny story that he has created about a small group of hearing people who turn up at a shop expecting to buy an exhaust pipe, only to find that the shop sells toiletries. He indicates that the shop is owned by a deaf person, and uses a compound sign (TELINGA^MATI) to do this. This sign literally means 'ear dead', and is formed from a variant for 'dead' (MATI) which is articulated after brief contact with the ear: this variant comprises a selected index finger that bends downwards. One of my research consultants told me that the sign is iconic, and derives from a withering blade of grass.

On further enquiry, it transpires that the sign MATI was introduced to signers in Solo by a man from Pontianak (Kalimantan) who had previously spent some time in Yogyakarta and Solo looking for work. The compound sign TELINGA^MATI has not yet diffused more widely, and there is no indication that it will permanently displace the local variants that are used to mean 'deaf'. However, given that signers often encounter new signs through language contact that remain unassimilated, the sign MATI has already passed the first hurdle on its way to wider usage.

Seeking employment is indeed a common motivation for internal migration, especially for young deaf men. Muhammad, who was 36 at the time of the interview, talks about two periods of time that he spent working in Surabaya, a city 200km from Solo:

- (7) *I worked in Surabaya for the very first time in 1995-7. That was for PT Maspion, a company that makes household appliances. Then I worked in Krian, Sidoarjo [near Surabaya] from 2002-6. There were many deaf people working there. I found out about*

these work opportunities through a friend. I remember that I applied in August 1995, then a letter came through saying that I had been accepted. I worked in a factory that made large metal parts... there were many deaf people working there from the ages of 17 to about 40, and we each lived in a kost [rented rooms] in the same building. Deaf people came from many provinces, such as Kalimantan, Sulawesi, and other parts of Java – Jakarta, Madura... The sign language that we used was a mixture of different signs from different places.

Interview with Muhammad Isnaini, Solo, 6 September 2011.

Another signer in the CISLV, Anton, also worked in Surabaya for several years, but has since married, and now lives and works in Solo. It is clear from the data that, on returning, some of the signs he learnt in Surabaya have lingered, and my research assistants noted that several of the variants he uses – for signs meaning ‘try’, ‘ordinary’ and ‘parents’ – are typical Surabaya variants not commonly used in Solo.

Sports events have been important from the early days of the sign community, and have been organised by groups such as the BPOC (*Badan Pembina Olahraga Cacat Indonesia*, ‘Indonesian Body for the Promotion of Sports for the Disabled’), and by sign community members themselves, with sponsorship from the Ministry for Youth and Sports (Menpora). The first three competitions organised by the BPOC took place in Solo in 1957, 1959 and 1964.⁸⁸ Subsequent events have been held every three or four years, and probably constitute the earliest opportunity that deaf people had to take part in inter-provincial sports competitions. These later became known as the *Pekan Olah Raga Cacat Nasional* (‘National Disabled Sports Week’), or PORCANAS, and since 2003 a second event for deaf school pupils – the *Pekan Olahraga Pelajar Cacat Nasional* (‘National Disabled Student’s Sports Week’), or POPCANAS – has been held every two years.

A deaf competitive swimmer from Makassar, Adam, attended PORCANAS XII in Palembang, Sumatra (2004) and PORCANAS XIII in Samarinda, Kalimantan (2008) – see Figure 4.11. Adam also took part in the POPCANAS in Bekasi, West Java (2007). In Palembang he competed against deaf swimmers from different Indonesian provinces, and describes how, four years later, he met and socialised with several people in Samarinda that he had previously met in Palembang (interview, 31 July 2011).

⁸⁸ This information has been supplied by the BPOC office in Solo.



Figure 4.11. National Disabled Sports Week (PORCANAS XIII), Samarinda, Kalimantan (photo courtesy of M. Adam Malik).

The facilitation of sport has been part of the concept of the deaf organisation in Indonesia from its early days. In section 4.3.1 it is noted that the organisation of sports competitions was listed as part of the remit of Gerkatina as early as 1966. The earliest event organised by deaf people was the Indonesian Deaf Sports Week (PORTRIN I), which took place in Semarang in 1982, and this is recounted in the CISLV by Ida, one of the Solonese informants.⁸⁹ Ida took part in this event, and recounts how Surabaya defeated Solo in the chess competition. Two more events were held in Surabaya (1984) and Bandung (1988) before a separate organisation, *Porturin* (*Persatuan Olahraga Tunarungu Indonesia*, ‘Indonesian Deaf Sports Organisation’), was established by Harpalis Alwi in 1992, to take over the organisation of these events. A list of national sports competitions is presented in Table 4.2. Pak Harpalis reports that, as of 2011, Porturin was active in 11 provinces.

Table 4.2. Indonesian deaf sports competitions organised by the deaf community, based on information supplied by Harpalis Alwi, 21 June 2011.

Year	Location	Event
1982	Semarang	Indonesian Deaf Sports Week (PORTRIN) I
1984	Surabaya	PORTRIN II
1986	Jakarta	Indonesian Deaf Football Championship (Menpora Cup I)
1988	Bandung	PORTRIN III
1990	Jakarta	Indonesian Deaf Football Championship (Menpora Cup II)
2009	Jakarta	Indonesian Deaf Sports Seminar
2010	Jakarta	Indonesian Deaf Badminton Championship

As with sports events, the Scouts and Guides movement has brought deaf people together from different parts of the archipelago. A national meeting took place in June 1981, and Asmah, from Makassar, recounts her participation in this event:

⁸⁹ *Profil Organisasi Gerkatina*, iv.

- (8) *In the 1980s I took part in a national meeting of scouts and guides in Jakarta. I was 17 years old. The teacher picked 20 deaf children – 10 girls and 10 boys – and we went to Jakarta by boat for the national meeting, it took two days. There were also many hearing children with us. We met deaf children from other parts of Indonesia. I remember meeting deaf people from different parts of Java, and from Bali, and Kalimantan. All the deaf scouts were camping in the same area. The event lasted two weeks; we sat in a circle around the camp fire and chatted every evening...*

Communication with signers from Jakarta and Bandung was fine, and Bali; with signers from Yogyakarta it was ok, but it was difficult to understand signers from Kalimantan, I had to tell them to slow down.

Interview with Asmah, Makassar, 31 July 2011.

Asmah reports that signers from some regions are easier to understand than those from other parts of Indonesia. A likely reason for this is that the Makassar sub-community has had more contact with signers from Java and Bali than with signers from Kalimantan.

As noted in section 4.2.4, there is a particular kind of urbanisation that attracts deaf people to the provincial capital, or a similarly large urban centre, from towns and villages in the surrounding area (often referred to by city-dwellers as the *kampung*). This process has been observed in both Solo and Makassar, where large social events organised by *Gerkatin* attract many people from across the province. Deaf schools and schools for disabled children also tend to be located in urban centres, as do employment opportunities, and these act as a strong draw for deaf people. Indeed, of the 63 informants filmed in Makassar, 11 come from the *kampung*. Two informants came from Pinrang and two from Bone; one informant came from the remaining seven locations shown in Figure 4.12.

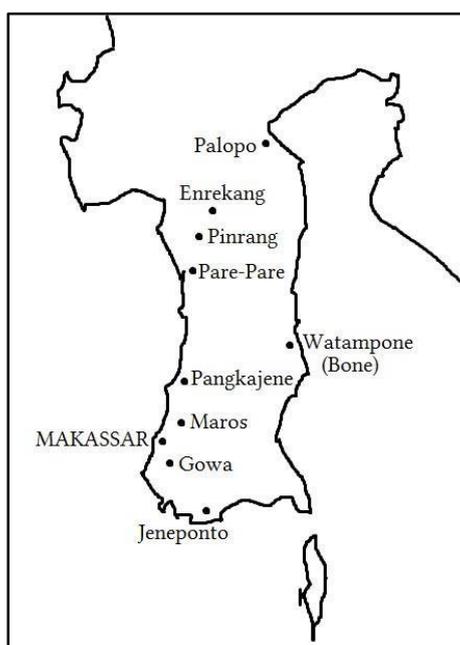


Figure 4.12. Provincial towns in South Sulawesi from whence informants came. The trip from Pare-Pare to Makassar takes around four hours.

Both of my male research consultants grew up in Solo, and have married women from the *kampung*. Muhammad married Dwi, who comes from a village in a neighbouring regency. Jayeng married Utami, who comes from the town of Salatiga, about 90 minutes along the road to Semarang. Both couples met at annual events organised by Gerkatin Solo, which are typically attended by over 100 people from the surrounding area. In an informal conversation, Utami explained how she still uses some signs from Salatiga, even though she now lives in Solo.

On my first fieldtrip in Makassar, I met Audy, a young man from Pinrang who was working at the doughnut café. During the three weeks, he regularly had chats with friends back home using his 3G phone (see section 4.3.4). During the second fieldtrip, Audy was one of a visiting delegation of 18 deaf people from Pare-Pare and Pinrang, who stayed in Makassar for the weekend. This example provides evidence of how social networks in cities are linked to social networks in certain towns and villages in the surrounding area. Through these links, language varieties come into contact with each other. Importantly, those who spend time in the capital typically retain the networks in their home town, and are in a position to become ‘brokers’ of language change (Milroy, 2002). Audy, for example, undoubtedly acquired variants from Makassar not used in Pinrang, and presumably used Pinrang variants in Makassar.

In addition to the internal migration described above, deaf people have sometimes moved to escape conflict. During the mapping exercise, it was reported that three deaf people moved from Maluku to Yogyakarta because of conflict in Ambon in the 2000s. Millions of people have also moved from Java as a result of the national government’s transmigration policy (Adhiati & Bobsien, 2001), and this is another possible reason for the internal migration of deaf people. It should also be emphasised that connections between urban centres, and especially villages, are still very limited overall, and most deaf people who live in rural areas remain unconnected to sign communities (section 1.3).

4.3.4. Transnational language contact

Members of the urban sign community have also had contact with signers from other countries. The sign language that has had the most impact on Indonesian sign language varieties is ASL – although some varieties are relatively untouched by this – and there are several likely explanations for this. In the mapping exercise, it was reported that a small number of deaf people have studied at Gallaudet University in the United States, and ASL was introduced directly to some Javanese schools in the 1980s (see 4.4.1). The Gerkatin archives include copies of ASL manuals with translations of the glosses from English into Indonesian, although these do not appear to have been widely distributed.

There have been at least three other types of contact with ASL. The first is through international deaf organisation events and sports events. Delegates from national Gerkatin have taken part in meetings organised by the World Federation of the Deaf internationally six times, and in the Asia-

Pacific region 12 times, once as host (in 2004).⁹⁰ Deaf Indonesians have also taken part in international youth conferences in the Asia-Pacific region seven times, once as host (in 2008). International sports events in which Indonesian deaf people are known to have participated are listed in Table 4.3.

Table 4.3. *International sports events in which deaf Indonesians have participated (based on information provided by Harpalis Alwi, 21 July 2011).*

Year	Location	Event
1992	Seoul, South Korea	Asia-Pacific Football Competition
1996	Kuala Lumpur, Malaysia	Asia-Pacific Games for the Deaf I
2000	Taipei, Taiwan	Asia-Pacific Games for the Deaf II
2002	Kuala Lumpur, Malaysia	Asia-Pacific Deaf Badminton Championship
2003	Kuala Lumpur, Malaysia	Asia-Pacific Deaf Athletics Championship
2009	Taipei, Taiwan	Deaflympics
2010	Samarinda, Indonesia	Asia-Pacific Deaf Badminton Championship II

Secondly, where international events are held in countries in the Asia-Pacific, such as Malaysia, there is an opportunity for Indonesians to acquire signs from ASL – or related to ASL. It is claimed by several sources that ‘Indonesian Sign Language’ is related to ‘Malaysian Sign Language’ (BIM). One of these sources is the *Ethnologue*, which describes ‘Indonesian Sign Language’ as ‘a blend of Malaysian Sign Language and indigenous signs’ (Lewis, Simons and Fennig, 2014), although this claim is unsupported by research, and is not borne out by observation.⁹¹ However, some deaf people have spent time in Malaysia, usually for employment, and this is another possible source of ASL signs, since many such signs are used in BIM. Thirdly, other deaf organisations have hosted deaf volunteers, notably in Yogyakarta and Central Java, and deaf tourists regularly visit different parts of Indonesia. Indeed, deaf tourism – where deaf tour guides welcome deaf tourists from other countries – has become popular in Bali.⁹²

Given the close links between the Netherlands and the Dutch East Indies, which continued in some ways after Indonesian independence (4.2.1), it seems likely that Sign Language of the Netherlands (NGT) may also have had an impact on Indonesian varieties. It has already been suggested that a two-handed manual alphabet may have been introduced to Indonesia by Dutch teachers, and in 4.3.1 it was noted that Irmin Tjokrohadisurjo studied in the Netherlands before returning to Indonesia, where he was an active member of early deaf organisations in the 1960s. More research is needed to identify the extent of the impact that this contact may have had, but similarities between some of the signs in Indonesia and the Netherlands are striking – such as SUDAH:jkt, a variant for the expression of completion that occurs in Jakarta (see Figure 4.13).

⁹⁰ *Profil organisasi GerkatIn*, iv, v.

⁹¹ Mohamad Sazali Shaari, President of the Malaysian Federation of the Deaf, has confirmed that the two are very different languages (conversation with the researcher, Bali, 6 September 2013).

⁹² For example, see the Bali Deaf Tours website (balideaftours.blogspot.co.uk), accessed 12 June 2014.



SUDAH:jkt

Figure 4.13. *SUDAH:jkt*, a variant for the expression of completion that occurs in Jakarta; this is very similar to a sign meaning ‘ready’ in NGT.⁹³

Although the impact of transnational contact on Indonesian sign language varieties may not be immediately apparent, this has been identified in the sign language literature as a means by which lexical borrowing takes place (Hoyer, 2007), and may exert influence in other ways too. For example, the use of the international one-handed alphabet for communication with international visitors may subtly reinforce the attitude that this manual alphabet is more prestigious than the two-handed one, even though this is not inevitable. Rather than the wholesale introduction of a non-indigenous sign language, transnational contact may facilitate lexical borrowing in a piecemeal fashion. For example, two signers recently attended the First International Forum for Deaf Muslims in Qatar (11-13 November 2013), and subsequently introduced a new variant for ‘alhamdulillah’ (‘all praise and thanks to God’) – shown in Figure 4.14.



ALHAMDULILLAH:Solo



ALHAMDULILLAH:intl

Figure 4.14. Variants meaning ‘alhamdulillah’ in Solo (left) and the recent variant introduced following the attendance of two Indonesians at the International Forum for Deaf Muslims.

4.3.5. The virtual sign community

The flourishing role of new technologies has several linguistic and sociolinguistic implications for the Indonesian sign community, both for the networks of community members and, structurally, for the sign language itself. Sign language users in Solo and Makassar have been

⁹³ I am grateful to Joni Osyerman (personal communication, 7 May 2013) for providing this information.

quick to make use of Facebook, and through social networking sites, many of my informants are in contact with signers in other parts of Indonesia who they have never met in person ('virtual friends'). Social groups have been created, such as *Gerakan 1000 Pengguna Isyarat* ('Movement of 1000 deaf signers'), which as of August 2014 has 1,150 members, and signers can be quick to use SMS to consolidate new contacts. Some signers also have Blackberry Messengers, or use third-generation (3G) phones to chat remotely using sign language, whether or not they have met in person (Figure 4.15).



Figure 4.15. Oktaviani, Audy and Arfan chatting remotely with friends using 3G phones.

Iksan, from Makassar, describes in an interview how he became aware of the potential of 3G phones for himself and his deaf friends:

- (9) *I became aware of 3G when I saw my cousin's phone, in 2006. I realised that it would be useful for deaf people, so I saved up and bought one, but then I couldn't make it work. So I asked my cousin to show me how it works. Then I came to the place where Gerkatin members meet, and told them about it. They bought similar phones, then we could use them to communicate in sign language. Deaf people in other places, like Jakarta and Manado, didn't use 3G phones at this point; it was here in Makassar where deaf people first used 3G.*

Interview with Iksan, Makassar, 7 August 2011.

Metadata interviews reveal that, at the time when data were collected in July 2011, over 63% of informants in Makassar had 3G phones, although the degree to which these were used for remote conversations could depend upon how expensive the tariffs were at any given time. Where the social network of a signer was once commonly restricted to those whom they could meet face-to-face, it is now possible to develop friendships virtually with people who live on the other side of the archipelago. Oktaviani – interviewed in Solo on 17 August 2011 – reports that she has friends in Surabaya (East Java), Bandung (West Java), Balikpapan (East Kalimantan) and Pekanbaru (Riau). She met them on Facebook groups or through mutual friends. The attraction of this, for Oktaviani, is simply to make new deaf friends, and to learn about the culture and tourist attractions in different parts of Indonesia.

Relatively little has been written concerning the effects of technological developments on the structure of sign language – though Lucas et al. (2013) and Mirus (forthcoming) discuss the impact of new technologies on sign language research. My observations suggest that the use of hand-held 3G phones produces interesting innovations at the levels of phonology and pragmatics, and 120 minutes of data have been collected from signers as they conversed using 3G phones with a third party, with the intention of analysing these innovations in future. As sign language users become ever more interconnected, it is likely that the use of new technologies will have lasting implications both for linguistic structures and for linguistic identities. If virtual online practices endure, it may be that the affiliations that signers have with the national and/or international sign community are strengthened at the expense of local identities. These are important questions for sign language linguistics and sociolinguistics, and more research is needed to analyse the impact of new technologies in more depth.

4.4. The effects of language policy and planning on sign language varieties

4.4.1. SIBI: Language contact and language planning

In 1977, Natalie Baron Sutadisastra visited her home village of Rangkasbitung, in what is now the province of Banten, Java. Sutadisastra had moved to the US in 1973 with her husband, a retired Indonesian diplomat, and during her visit she met a deaf boy in Rangkasbitung who had not been accepted for formal schooling (Mardiyati, 2010). On returning to the US, Sutadisastra studied child education and ASL at Montgomery College, Maryland and returned to Indonesia in 1980 with Professor Frances M. Parsons, a deaf professor of art history at Gallaudet University.⁹⁴ Sutadisastra and Parsons, shown in Figure 4.16, met with the Department of Education in Jakarta, introducing the Total Communication method to Indonesia (Gallaudet University Archives, MSS/049).^{95,96} Two schools – SLB Zinnia in Jakarta and SLB Karya Mulia in Surabaya – are reported to have adopted Total Communication in the early 1980s, presumably on the basis of information from Sutadisastra and Parsons.⁹⁷

Although Indonesia had its own indigenous sign language varieties at the time, these had not been researched; deaf people themselves were not aware of the linguistic status of sign language and there were no deaf organisations with the capacity to advocate the use of these varieties. These factors, along with the increasing volume of research on ASL, undoubtedly had a part to play in

⁹⁴ *Yayasan Pendidikan Padesan*, a leaflet published by the Padesan Education Foundation, which was also founded by Ibu Baron Sutadisastra.

⁹⁵ <http://yppadesan.webng.com/founder.htm> (retrieved 12 June 2014).

⁹⁶ What is meant by Total Communication varies considerably: for some uses it is synonymous with talking and signing at the same time; others have used it to refer to a philosophy whereby communication methods are selected depending upon the needs of the child, as assessed in an appropriate manner (Baker & Knight, 1998). In Indonesia, it is the former definition that seems to have been adopted more widely.

⁹⁷ Several sources report that Sutadisastra introduced Total Communication to these schools directly.

the introduction of ASL and Total Communication. Based on an informal conversation with Sutadisastra's daughter, two further possible motivations are noted by Isma (2012:44). First, and from a practical point of view, it was quicker for Sutadisastra to use ASL signs because she had already learnt them. Secondly, the increasing use of ASL in other Southeast Asian countries may have made ASL seem more attractive as a potential transnational *lingua franca*.



Figure 4.16. *Ibu Baron Sutadisastra (left) and Professor Frances M. Parsons (right).*⁹⁸

Signs from ASL were introduced to Indonesia within the Total Communication framework, which was advocated at the time by individuals such as Parsons as a means of acquiring English (Gallaudet University, 1985).⁹⁹ While lexical items were introduced to Indonesia in this way, the grammar of ASL was not, and what is referred to as Total Communication is essentially a manually-coded spoken language (see 1.2.2). Following the introduction of this method, several schools and organisations created their own dictionaries, but the first major attempt to create a mainstream dictionary of signs was called *Isyando*, a shortened form of *Isyarat Indonesia*, or 'Indonesian Signs' (Tangyong & Belen, 1983). Little is known about the background of *Isyando*, but teachers in different parts of Indonesia continue to talk about it, and it is one of the sources from which SIBI was created (Branson and Miller, 2004:14).

SIBI, the Indonesian Sign System, was first published by the Department of Education and Culture in 1994, and is based on a wide range of sources, including dictionaries developed by the Institute for the Development of Total Communication, the Working Group on Special Education, Zinnia school in Jakarta (Gunawan, 1992), Karya Mulya school in Surabaya (Karya Mulya, 1985) and the Curriculum Development Centre.

⁹⁸ Image of Baron Sutadisastra, posted on Facebook by Loeky Simpliciano, 23 August 2014; image of Frances Parsons from <http://languageblog.com/2013/12/20/peggie-parsons-in-trinidad-and-tobago>, taken c.1975 in Trinidad and Tobago.

⁹⁹ Tribute speech on Professor Frances Parsons, by Cynthia Vonne Gulak, Gallaudet University, 1985 (<http://videocatalog.gallaudet.edu/?video=13538>, retrieved on 12 June 2014).



Figure 4.17. SIBI, the Indonesian Sign System (Department of Education & Culture, 2001).

According to the Department of Education and Culture (1995:v), signs were also adopted from ASL, BSL, and Singapore Sign Language, alongside *isyarat temuan* (existing signs used by deaf people) and *isyarat tempaan* (signs created by the Dictionary Compilation Team). The signs were collected by teachers at the largest deaf schools in various provinces, and by ‘several other sign language experts’. To put the dictionary together, a committee of representatives from seven organisations was coordinated by the Primary Education Directorate (*ibid.*).¹⁰⁰

The attempt to introduce a standardised sign system may have been influenced by the relative success of language planning in developing and promoting Indonesian (1.4.2), and the promise of a means by which deaf pupils can become competent in the national spoken and written language is clearly an attractive one. However, one of the criticisms of education policy outlined by Branson and Miller (2004) is that the emphasis on teaching Indonesian to deaf children at boarding school leaves them ill-equipped to cope with regional and local languages on returning home to the village. I am not aware of any large-scale quantitative research on the outcomes of using SIBI, although doubt has been cast on the success of manually-coded languages more generally (1.2.2). Gerkatin has argued that SIBI has failed, and is campaigning for SIBI to be replaced by natural sign language varieties that are indigenous to the sign community (Gerkatin, 2006).

One of the ways in which SIBI was promoted is through a ‘SIBI competition’ which took place every year, but now seems to have stopped.¹⁰¹ Lisa, a deaf interviewee from Manado, describes taking part in such a competition in Surabaya in 2003. The contest was held in a different city every year alongside other events such as drawing and dance competitions. Six participants from

¹⁰⁰ The organisations are the General Directorate for Primary and Middle Education; the Centre for Curriculum Development and Educational Facilities; the Body of Research and Development for Education and Culture; the Centre for the Foundation and Development of Language; the General Directorate for Social Rehabilitation of the Social Department; Zinnia Education Foundation; and the Special Education Working Group at IKIP Jakarta (Department of Education & Culture, 1995:v).

¹⁰¹ According to one of the Solonese informants, the SIBI competition is now no longer held.

Jakarta, Makassar, Bengkulu, Semarang and Manado took part in the 2003 SIBI event, which was judged by a jury of seven people:

- (10) *Someone from the jury would sign a sentence using SIBI, without mouthing the words, and we had to repeat the sentence with mouthed words. We also had to write these sentences down. Then we were tested on affixes – they would sign a word that had different prefixes and suffixes, and we had to write the word down. Finally they would ask us questions... We had to be fluent and confident, and not confused.*

Interview with Lisa, Manado, 23 August 2011

From this description, it transpires that only the final activity requires the *comprehension* of manual signs – the other activities entail the manual coding or decoding of written Indonesian, but do not require comprehension of meaning.

Despite the promotion of manually-coded spoken language through SIBI – and its use of non-indigenous lexical forms from ASL – the impact of this on sign language in Indonesia varies considerably. SIBI has exercised more influence on some sub-communities than others, even on the same island. For example, in the semantic domain of numerals, signers in their 20s and 30s in Makassar have retained several traditional variants. Conversely, I have observed signers of similar ages in Manado using many numeral variants from SIBI (Palfreyman, forthcoming). In many schools, such as the one in Bali where Branson and Miller (2004) conducted their investigation, the SIBI dictionary sits on a shelf unused, and only one teacher has had training to use it. In other schools, such as that attended by Lisa (10), SIBI is used more often, and this is evident in some of the lexical signs that she and her friends use in conversation – though this does not necessarily mean that SIBI has had a similar effect on the *grammar* that these signers use (Palfreyman, forthcoming).

On the one hand, as shown with respect to numerals and colour terms, signs from SIBI are not necessarily adopted wholesale: signers choose some SIBI variants but not others, and may also make formal alterations to SIBI signs (Palfreyman, forthcoming). On the other hand, signers who have not been exposed to SIBI directly may still be familiar with some of the signs from SIBI, whether actively or passively (*ibid.*). In addition:

[in] many urban sub-communities, the one-handed alphabet is readily used as well as, or instead of, the older two-handed alphabet... especially by younger signers (Palfreyman, forthcoming:6).

It does seem that, in some cases, SIBI signs provide an impetus for standardisation, and are supplanting older, regional signs, although in some cases this is being reversed as a result of increasing awareness – a phenomenon explored in section 4.4.2. The existence of an older generation of signers who have had little or no exposure to SIBI, along with the patchy implementation of SIBI in schools, and the selective use of SIBI signs by younger signers, all point to the inconsistent impact of SIBI on Indonesian sign language varieties.

4.4.2. *Bisindo, isyarat lama and the growing awareness of sign language.*

In 2006 Gerkatin passed a resolution at its seventh congress, in Makassar, referring to *Bisindo* (*Bahasa Isyarat Indonesia*, or ‘Indonesian Sign Language’). Although it is not clear from the resolution what *Bisindo* refers to, or who uses it, three ideas on this have emerged during conversations that I have had since 2008 with members of the national board of Gerkatin. The first is that *Bisindo* is used by all deaf Indonesians, and that signs should be taken from different varieties around Indonesia in order to create a single, definitive dictionary of *Bisindo*. The second idea is that *Bisindo* is synonymous with the Jakarta variety, which should be actively promoted across Indonesia.

The third, more recent idea is that *Bisindo* is the name of the sign language used by all deaf Indonesians, and does not need to be standardised, but does feature regional variation, and that the local sign language variety should be used and taught.¹⁰² Although this latter idea is now gaining sway, some uncertainty remains concerning the definition of *Bisindo*, and for this reason I have avoided using it in this investigation. However, the Gerkatin resolution has given the sign community a name with which to refer to their sign language, and since 2006 a growing number of signers have become aware of the fact that they use a sign language, and of the advantages of promoting the use of sign language varieties.

Several small-scale documentation efforts have been conducted by national Gerkatin and the regional Gerkatin that is based in Jakarta, resulting in booklets with photographs of signs for different words and concepts. Regional Gerkatins on other islands, such as Makassar and Kalimantan, are now following suit. Part of this effort seems to be motivated by a desire to document and revitalise the use of *isyarat lama*, ‘old(er) signs’ that have often been displaced by more recent ones, particularly – though not exclusively – from SIBI. Shifts to these traditional variants do not only occur in response to imported or non-indigenous signs; in some cases older variants seem to be preferred by younger signers over newer indigenous variants.

For example, signs used in Java for Javanese cities have changed over time. The older set of signs derives from the system of car number plates, which show where a car is registered – *B* for Jakarta, *AB* for Yogyakarta, *H* for Semarang and *L* for Surabaya (see Figure 4.18). More recently, a different set of variants has emerged within Indonesia that makes reference to notable statues that are found in three of these cities, but lately, a small group of younger signers have begun to emphasise the importance of using the older variants.

¹⁰² In chapter 2 it was noted that research conducted using the lexicostatistical methods promoted at the Asia-Pacific Sign Linguistics department – where three deaf Indonesian students have recently studied – suggests that cities such as Jakarta and Yogyakarta have their own sign languages. This approach seems to present a challenge to Gerkatin’s intention to promote BISINDO.

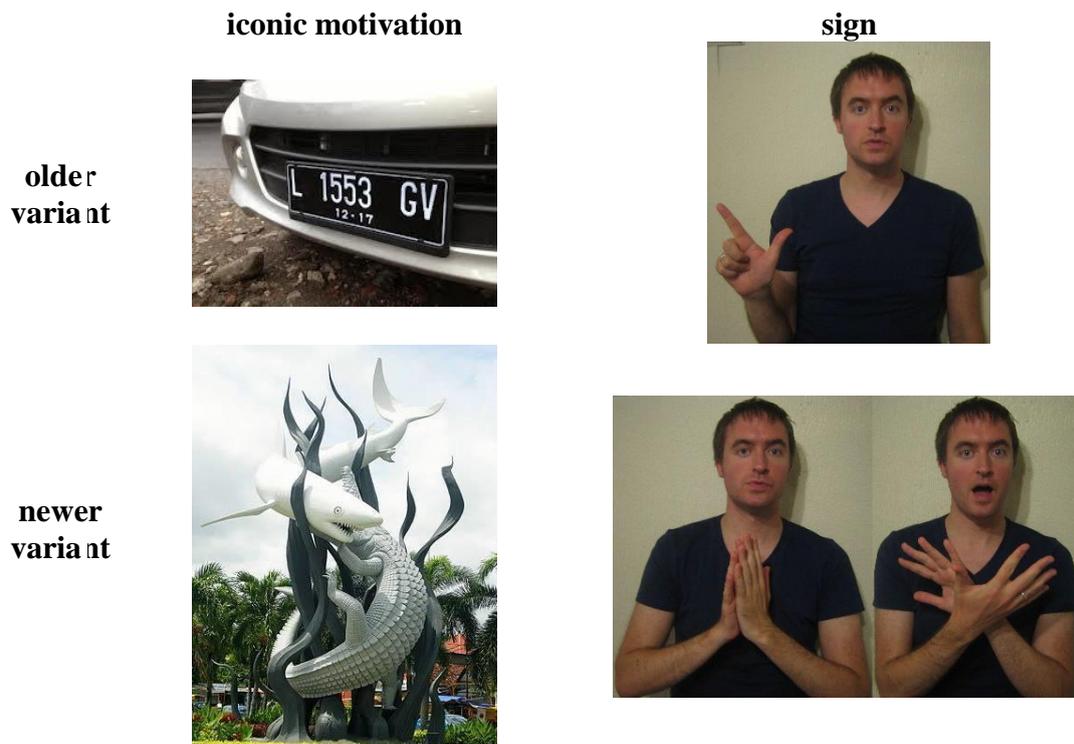


Figure 4.18. Two variants used to refer to the city of Surabaya – one older and one more recent – and the motivation for each sign.

In section 3.7.3, the concept of ‘metalinguistic awareness’ is introduced to refer to the understanding of sign language that some signers have developed. As a result of this awareness, they may become aware of the provenance of certain variants, and this can inform their choice as to which variant to use. They develop a critical awareness of these signs, and of *isyarat lama* that have a longer association with their city or region – see for example interview extract (1) in section 3.7.3. A variant form becomes socially marked when its provenance is clearly identifiable to members of the sign community who are metalinguistically aware. These forms have acquired an indexical value, whereby they may reflect certain social attitudes (Meyerhoff, 2006). For example, use of the one-handed manual alphabet may index the influence of SIBI, while a younger signer using *isyarat lama* can purposefully assert a belief in the value of more traditional variants.

These trends have triggered strong attitudinal responses in some sections of the sign community, and in certain situations a handful of signers now point out when other sign language users produce signs that derive from SIBI or ASL, even though these same signers can often be observed using such signs themselves.¹⁰³ Awareness of socially-marked variants also leads to instances in the CISLV of self-monitoring and heightened vigilance, where individuals correct ‘wrong’ variants that are produced either by themselves or by others. For example, a Solonese

¹⁰³ In the British Sign Language community, those regarded as self-appointed guardians of the language are sometimes jokingly referred to as ‘the BSL police’. Sometimes there is tension where socially marked variants are used by signers who are unaware of the social significance of these variants, or where there is disagreement concerning the social analysis of a variant.

signer uses self-initiated repair (Kitzinger, 2013) to replace a SIBI variant meaning ‘Saturday’ with a local, traditional variant, while a Jakarta informant prompts her friend to introduce herself using the traditional two-handed alphabet, rather than the one-handed one.

4.5. Chapter summary

One of the key remaining questions concerns the origins of the sign community, and the likely time-depth of the sign language varieties used by urban sign communities. Having examined the existing evidence pertaining to the early days of the sign community in sections 4.2 and 4.3, it seems that urban varieties developed in private deaf schools that were established from the 1930s onwards (4.2.1). This is based on the premise that

if language develops primarily out of a need for communication between two or more people, it seems reasonable to assume that [a sign language] developed when deaf people came together in groups (Deuchar, 1984:28).

As a conservative estimate, the interview with Pak Siregar (4.2.1) indicates that urban sign language varieties have been used in Indonesia since at least the 1950s, which suggests a likely time-depth of around 60 years. It is unfortunately very difficult to establish whether sign language was used any earlier than this, because it is not known whether deaf people had extensive contact with each other prior to the foundation of deaf schools. Additionally, there is uncertainty as to whether early varieties derive from, or were nourished by, homesign (see 4.2.1). There are two important, inter-related points that should be borne in mind alongside this estimate. First, the use of sign language in a certain school or urban centre does not mean that sign language was then used everywhere with immediate effect. Secondly, it seems likely that sign language varieties had multiple origins – emerging, for example, in the deaf schools in Bandung and Wonosobo, and then interacting and spreading.

This convergence and divergence has been facilitated in part by the ongoing process of schoolisation (4.2.4), and through networks of sign language users, which began through alumni associations that later became social deaf organisations (4.3.1, 4.3.2). These networks have been further elaborated and strengthened through internal migration and social contact facilitated by the search for employment, and practices as diverse as scouts and guides meetings, marriages and national sports competitions (4.3.3). The use of new communication technologies has fuelled the creation of social networks between deaf sign language users at the national level (4.3.5). The impact of transnational contact has also been felt, in the introduction of the two-handed manual alphabet (4.2.3), the notion of manually-coded sign systems (4.4.1) and more recently through contact with other sign languages at international meetings, sports events, and through deaf tourism (4.3.4).

On the basis of the discussion presented in this chapter, four kinds of linguistic diffusion have been noted: (i) diffusion through schoolisation (school↔urban); (ii) diffusion through urbanisation (rural↔urban); (iii) diffusion through internal migration and social contact

(urban↔urban); and (iv) diffusion through transnational language contact (country↔country). It is becoming increasingly common for deaf Indonesians to participate in sign communities at the local, regional, national and even international level, due to deaf organisations, international development, and new technologies, and this inevitably has consequences for the structure of sign language varieties across Indonesia.

The relative dominance of Javanese varieties, noted in section 4.3.2, seems to have a particular effect on varieties outside Java. In Makassar, for example, some lexical items seem to be in the process of being displaced by Javanese variants. The traditional Makassarese variant SELINGKUH:mksr ('an illicit affair') – shown in Figure 4.19 – has been joined by a Javanese variant SELINGKUH:java, and similar developments have been observed for variants meaning 'male' and 'mother'. In some ways this is unsurprising: sign communities in Java have had an important national role since the early days of the sign community (4.3); the density of the Javanese population has led to a high level of intra-insular connectivity; while its links with other islands have enabled variants to spread more easily.¹⁰⁴ Standardisation, whether forced or natural, may lead to the endangerment or even extinction of certain varieties (Kikusawa, 2012), and this seems particularly likely given the ever-increasing opportunities for contact between sign language users and their sub-communities.

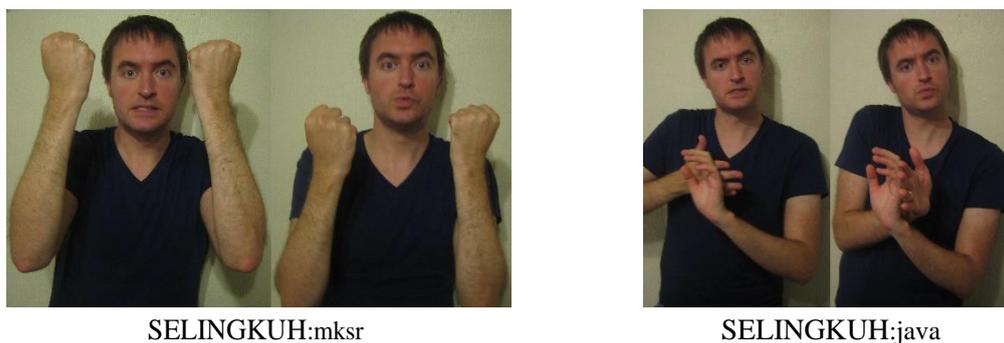


Figure 4.19. Makassarese and Javanese variants meaning 'an illicit affair'.

The evidence discussed in chapter 4 indicates that there is cohesion within the sign community, and examples have been given of some of the different ways in which deaf people are connected. However, any account of variation across Indonesian sign language varieties must balance the extensive connections and social contact between sub-communities, on the one hand, and the consequences of the large distances that often exist between them. This is discussed further in chapter 7, where various factors that favour and disfavour linguistic convergence are considered. Having outlined the sociohistorical context of the Indonesian sign community, I will now investigate variation in two grammatical domains: completion (chapter 5) and negation (chapter 6).

¹⁰⁴ Java has around seven times the population of Sulawesi (Figure 1.4), yet is 20% smaller in area.

CHAPTER 5

VARIATION IN THE GRAMMATICAL DOMAIN OF COMPLETION.

Chapter 5 considers variation in forms that express the completive aspect in the sign language varieties of Makassar and Solo. Completive aspect markers indicate that an event or situation is completed, and have several functions that are associated with completion at different levels of linguistic organisation. The completives that are found in the CISLV indicate anteriority and experience, event order, subordination, and advancement; they can also have pragmatic functions, expressing emphasis, resignation and sufficiency. There is asymmetry between form and function, however, since these functions are expressed formally in different ways, and this asymmetry provides the impetus for the enquiry in this chapter.

The aim of section 5.1 is to define what is meant by the completive aspect, since it encompasses elements of the perfect and the perfective, but is synonymous with neither. Completion is then considered cross-linguistically through an overview of completive markers in a selection of spoken languages and signed languages. Two questions recur throughout this overview: what are the various functions of forms that express completion in different languages, and what is known about *variation* in the realisation of the completive aspect? The responses to these questions provide important context for the ensuing study.

The bulk of Chapter 5 is presented in the sections that follow. Section 5.2 presents a formal analysis of the completive. This includes an inventory of lexical variants, and an analysis of clitic forms, mouthings, and the distribution of forms. The functions of the variable are explored in section 5.3, where the variable is considered from lexico-semantic, syntactic, pragmatic and discourse perspectives. Multivariate analysis of factors that may predict the realisation of lexical and grammatical variables is described in section 5.4, including the circumscription of the variable context, which has been performed in light of everything that is known about the completive aspect variable to date. Multivariate analysis is then extended further in light of the finding that the previous realisation of the variable is a statistically significant factor in predicting the choice of lexical variant (5.5). In section 5.6, the significance of findings from the domain of completion are discussed in light of the research questions.

5.1. Aspect and completion

5.1.1. Perfect and perfective aspects

Languages have different ways of describing situations in terms of time. For example, in Portuguese, verbs inflect to show that speakers are talking about what happened (in the past), what is happening (in the present), or what will happen (in the future), and this is referred to as tense. Language can also show whether a situation has started, is on-going, has been completed, or will be completed, and this is referred to as aspect. Aspect, like tense, relates to the temporal representation of information, and both are grammatical domains.^{105,106} Aspect is quite different to tense, however, because it is concerned not with relating the time of a situation to some other time, but with the ‘internal temporal constituency’ of the situation (Comrie, 1976:3). In other words, aspect relates to information such as duration, frequency or completion, whereas tense does not.

The categories of tense and aspect are marked differently on the grammars of different languages (Hogeweg, de Hoop & Malchukov, 2009:1), and the task of *describing* tense and aspect categories is ‘notoriously difficult’ (Dahl & Velupillai, 2013). As a result, many different classification schemes have appeared to describe aspectual distinctions (Madden & Ferretti, 2009:220), and the task of deciphering the terminology is daunting (Ming, 2010:142); indeed, Medina (2001:1) contends that there is ‘no generally accepted terminology in treatments of aspect’. There is an additional complication when trying to analyse the temporal dynamics of a situation, which is that semantic interpretations are inherently subjective: one and the same situation can be interpreted differently depending on the perspective adopted.

Madden and Ferretti (2009:220) note that there are three ‘language independent’ aspectual categories that are ‘grammaticalised to various degrees in the world’s languages’ – the perfective, the imperfective and the perfect aspects. While chapter 5 focuses on the completive aspect, some prior understanding of notions linked to the perfect and perfective aspects is necessary in order to fathom what is meant by ‘completion’.

The perfect aspect is highly complex (Givon, 1984).¹⁰⁷ It is different from other types of aspect, because ‘it tells us nothing directly about the situation in itself, but rather relates some state to a

¹⁰⁵ It is not always easy to distinguish between those cases where aspect is grammaticalised, and those cases where it is not (Dahl & Velupillai, 2013).

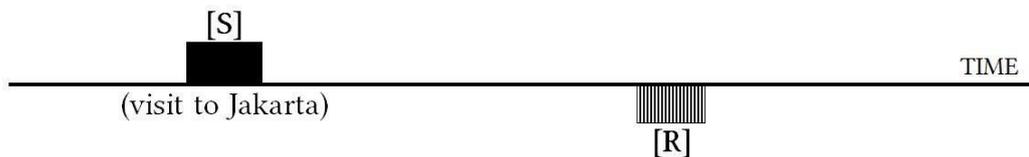
¹⁰⁶ It is possible to consider aspect as a lexical or purely semantic notion (rather than grammatically) as where certain words or signs may have inherent aspectual meanings (Goedsche, 1940:189; Dik, 1997:137; Medina 2001). However, in this chapter I examine how the completive aspect is realised grammatically in the corpus data.

¹⁰⁷ ‘Of all tense-aspects in human language, the so-called perfect is by far the most complex... More than other components of the system, it spans the entire functional range, from narrow scope semantics to discourse scope pragmatics’ (Givon, 1984:278).

preceding situation' (Comrie, 1976:52). In showing the 'present' or 'continuing relevance of a previous situation' (ibid.), the perfect is different from other aspects, since it expresses a relation between two points in time: the time of a prior situation, and the time of the state resulting from this prior situation. Bhatt and Pancheva (2005) identify four types of perfect aspect, based on McCawley (1971) and Comrie (1976): the continuative, or universal perfect; the experiential, or existential perfect; the resultative perfect; and the recent past perfect. Of these, only the experiential perfect is directly relevant to the analysis presented later in the chapter.

The experiential perfect expresses a given situation that 'has held at least once during some time in the past leading up to the present' (Comrie, 1976:58). In the English language sentence in (11), the experiential perfect tells us that Noor has been to Jakarta at least once prior to reference time, but is not in Jakarta at the moment. In other words, Noor has had the *experience* of going to Jakarta. Note that [S] is the time of the situation, and [R] is the time of reference.

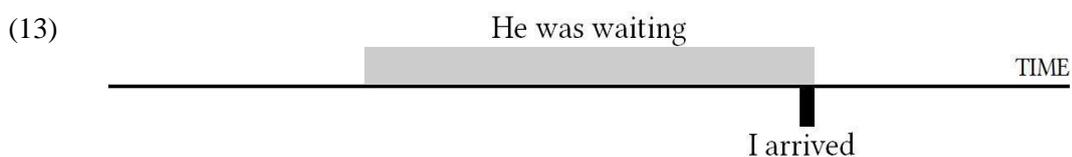
(11) Noor has been to Jakarta.



The perfective aspect is concerned with viewpoint, which is one of the two aspectual components identified by Smith (1997:2). Viewpoint is concerned with how a situation is presented, and the perfective is one of three viewpoint types, the others being imperfective and neutral viewpoints (Smith, 1997:3). The difference between perfective and imperfective viewpoints is illustrated by example (12).

(12) He was waiting for me when I arrived.

In (12), 'was waiting' and 'arrived' both refer to a time in the past (both have the same tense), but the temporal consistency is different for each, since the viewpoints are not the same. The first verb presents the background situation as progressive ('was waiting'), and has an *imperfective* viewpoint aspect; that is, we are told about the duration of this verb. The second verb presents the totality of the situation (my arrival) and has a *perfective* viewpoint aspect; a complete event is shown as an 'unanalysed whole' and 'without regard to internal temporal consistency' (Comrie, 1976:12). Such aspectual information enables a particular interpretation of how these two situations relate to each other, which is shown schematically in (13).



A corollary of this is that the perfective viewpoint indicates that a situation is bounded. In order for a situation to be presented as perfective – complete and whole – it must be bounded by a start point and an endpoint (Smith, 1997:69; Smith & Erbaugh, 2005). If a situation was not closed by an endpoint, it would be open and continue indefinitely, rendering it imperfective rather than perfective. This property explains the role of perfectives in narrative advancement, which is discussed in section 5.3.

5.1.2. A working definition of the completive aspect

There are several overlaps between the perfective and perfect aspects, and both share properties with the completive aspect.¹⁰⁸ Indeed, many linguists have regarded completives as synonymous with perfectives (Dahl, 1985:138; Madden & Ferretti, 2009:220).¹⁰⁹ Although definitions of completive, perfective and perfect ‘can make them sound distinct... the reality is that there is often extensive overlap among them’ (Singler, 2004:880). For example, the perfective aspect presents a complete situation as an unanalysed whole, and ‘ordinarily one cannot present an action as an unanalysed whole until after its completion’ (ibid.). This accounts for the common definitions of ‘perfective’ that refer to their function as expressing completed action (Comrie, 1976:18). Similarly, the perfect relates some preceding situation to a current state, and although the perfect may be used with imperfectives – those which preclude the possibility of a completed event – it is also conducive to use with perfectives, whereby an event has been completed.

One advantage of focusing on the completive aspect rather than the perfect or the perfective is that the central analysis need not be affected by cases where there is ambiguity as to whether a perfect or perfective reading is preferred. In other words, the fuzzy nature of the term ‘completive’ relative to perfect and perfective aspect is helpful where it is not possible to distinguish between the two, for whatever reason. It may be desirable to have an ambiguous term as the core notion, if fine-grained distinctions are not needed. Zeshan (2003b:49) refers to completives as ‘indicating the completedness of an action’, and this is adopted here as a working definition of the completive aspect, on the basis that it may overlap with perfect, perfective, or both. This is in line with an inductive approach, whereby the labelling of a particular variable is not a final attribution, but a working assumption that needs to be re-tested in light of the data.

¹⁰⁸ The terms ‘perfect’ and ‘perfective’ are formally similar, and often used interchangeably in the literature (Zhiming, 1995:183; Dahl & Velupillai, 2013). As can be seen from the definitions above, they are *not* synonymous. However, Dahl (1985:139) presents a cross-linguistic survey of tense and aspect systems in 64 languages, and notes that there is ‘considerable overlap’ in the distribution of perfects and perfectives, and that historically, some perfects have developed into perfectives, which is what has happened in French. Nonetheless, he notes several differences that emerge between perfects and perfectives in the (spoken) languages of his survey.

¹⁰⁹ Overlaps with perfective and perfect aspects are implied in labels such as ‘completive/perfective’ and ‘completive/perfect’ (see Kortmann & Szmrecsanyi, 2004:1170 and 1176, respectively).

5.1.3. Motivation for targeting the grammatical expression of completion

There are three reasons for looking at the grammatical domain of completion: these are the frequency of completive aspect markers (section (i), below); the cultural significance of completion (section (ii)); and the existence of formal variation in the expression of completion (see 3.4).

i) The frequency of completive aspect markers.

Manual forms that express the completive aspect occur approximately 14.9 times per 1,000 forms (14.9‰), which appears to be highly frequent compared with other corpora (see Table 5.1), although the process of comparing the frequency of completive markers across corpora is not straightforward.¹¹⁰

Table 5.1. The frequency of known completive markers across sign language corpora.

language variety	corpus	total number of tokens	known completive markers (n)	frequency of markers per thousand (‰)
ASL	Morford and MacFarlane (2003)	4,111	FINISH	4.9
Auslan	Johnston (2008)	105,000 ¹¹¹	FINISH-related (451), HAVE-aux (36)	4.6
BSL	Schembri et al. (2011)	24,823	BEEN (100), FINISH (56)	6.3
CISLV	Palfreyman	17,698 ¹¹²	manual tokens of completion (264)	14.9
Kata Kolok	de Vos (2012a)	10,106	FINISH#pah (272)	26.9
NGT ¹¹³	Crasborn, Zwitserlood and Ros (2008)	143,522	AF (599), KLAAR-A (568), KLAAR-B (7), KLAAR-C (44)	8.5

It appears that completive markers are more frequent in the CISLV, and even more so in the Kata Kolok corpus. For the former, at least, this may be for cultural reasons (see (ii) below) but such differences can also arise when a form carries a greater functional load (Olsson & Moeljadi, 2014), and I return to this in section 5.6.

The completive aspect is instantiated in almost every section of the CISLV that has been transcribed so far, regardless of the location, age and sex of the signers, which makes it highly

¹¹⁰ ID-glosses in lexical frequency lists do not specify the grammatical roles of function signs, which means it is not possible to compare completive markers on the basis of lexical frequency lists alone. Further to this, exhaustive lists of completive markers in a sign language, if such things exist, are not easily obtainable. The comparators in Table 5.1 are approximate, and I anticipate accurate data in future.

¹¹¹ Johnston et al. (under review:12)

¹¹² As explained in section 3.5, the CISLV is not yet fully glossed; consequently, the figure given for the total number of tokens is an estimate.

¹¹³ I am grateful to Anna Sáfár and Johan Ros for their help in obtaining these frequencies.

suitable to sociolinguistic analysis. From a practical point of view, the high frequency of completive markers in the CISLV suggests that completion is a suitable target domain to investigate.

ii) The cultural significance of (negative) completion

One of the more conspicuous elements of Indonesian culture is the kind of questions that one is routinely asked by strangers and new friends alike (14), (15).

(14) *Sudah kawin belum?* Indonesian
 COMPLETIVE married NEG.COMPLETIVE (my example)
 ‘Are you already married or not yet?’

(15) *Sudah punya anak belum?* Indonesian
 COMPLETIVE married child NEG.COMPLETIVE (my example)
 ‘Do you already have children or not yet?’

Such questions, formed on the back of aspectual distinctions concerning completion, are not restricted to marital and parental status. Indonesians commonly ask their friends questions such as ‘Have you had a bath or not yet?’ and ‘Have you already eaten or not yet?’ These questions are also prevalent in signed languages in Indonesia. In *Kata Kolok*, for example, de Vos (2012b:136) notes that ‘the perfective marker forms a crucial component of daily greetings among the inhabitants of Bengkulu’.

Kadarisman (2005:11) describes a colleague at the English department in the State University of Malang asking questions to postgraduate students – in English – and sometimes obtaining the following answers:

(16) Instructor: Are you married? English
 Student: Not yet. (Kadarisman, 2005:11)

(17) Instructor: Do you have children? English
 Student: Not yet. (Kadarisman, 2005:11)

The translations of *belum* into English (‘not yet’) by the students in (16) and (17) is evidence of cultural transfer, and draws attention to differences between Indonesian and non-Indonesian culture. Accordingly, saying “no” in response to these questions

sounds like standing in the way against the up-coming but unknown destiny: who knows, God will make me meet my ‘soul mate’ soon; who knows, God will give us a child soon. By comparison, in English culture, getting married and having children are simply worldly facts (Kadarisman, 2005:11).¹¹⁴

Kaswanti Purwo (2011) provides an additional point about the *belum/sudah* distinction by making a link between *belum* and *sudah* and the role of expectation. If someone is going to the theatre but

¹¹⁴ Or perhaps simply an individual’s life decision.

gets caught in traffic and arrives late (18), *sudah* underlines the fact that the performance had already begun, and that this is in accordance with expectations. Conversely, in (19), *belum* emphasises that, contrary to expectations, the performance has not yet started, and so the latecomer has not missed it after all.¹¹⁵

- (18) *Pertunjukan sudah mulai ketika kami sampai.* Indonesian
 ‘The performance had already started when we arrived.’ (Kaswanti Purwo, 2011:11)
- (19) *Syukurlah pertunjukan belum mulai!* Indonesian
 ‘What a relief, it has not started yet!’ (Kaswanti Purwo, 2011:11)

5.1.4. The completive aspect in spoken languages

Every language variety, whether signed or spoken, has its own ways of denoting completion. In section 5.1.4, I present a brief overview of the literature on completives in Javanese, Makassarese and varieties of Malay.¹¹⁶ The following details are relevant in three main ways. First, they shed some light upon the nature and extent of variation for expressions of completion in spoken languages. Secondly, when looking at completives in the CISLV, it is useful to have knowledge of the functions that completive markers may perform more generally. Research into completion in other languages also provides useful models and terminology for analysing the functions of completives in the CISLV, and these are highlighted below where appropriate.¹¹⁷ Thirdly, contact with spoken languages can have an influence on structures in sign languages, including mouthings (1.2.1).

i) Varieties of Malay

In Indonesian, temporal distinctions such as completion are expressed through adverbs or aspectual particles, ‘but these are not obligatory, and there is no actual morphosyntactic means of expressing tense’ (Englebretson, 2003:3). The most frequent functional particle for expressing completion across Malay is *sudah*, although there is considerable formal and functional variation in how this word is treated by different varieties of Malay. According to Gonda, *sudah* in Malay

means “accomplished, done with, finished, over”; it often accompanies verbs indicating termination in point of time. No serious objection can be raised to the idea that this word originates in Skt. [Sanskrit] *suddha*- [...] “cleared, pure etc.” in the sense of “acquitted, complete” (Gonda, 1973:565).

¹¹⁵ Given the frequency and cultural value of completion, I would argue that anyone who wishes to learn the Solonese and Makassarese sign language varieties needs to have a good grasp of the forms and functions of completive markers.

¹¹⁶ The forms discussed here are not always referred to in the literature as completives, but can and do indicate completion.

¹¹⁷ The aim is not to then take a deductive approach and ‘find’ these functions in the CISLV, but to be aware of some of the common functions that completives can have.

Examples of *sudah* as it is used in Standard Indonesian are supplied by Sneddon (2010:204), who notes that it ‘usually indicates that an action has occurred or that a state has been achieved’.

(20) *Ali sudah bangun.* Standard Indonesian
 Ali sudah wake-up (Sneddon, 2010:205)
 ‘Ali has woken up.’

(21) *Ali sudah sembuh.* Standard Indonesian
 Ali sudah recover (Sneddon, 2010:205)
 ‘Ali has recovered.’

When preceding a stative verb, *sudah* ‘usually refers both to the action which begins the state and to the continuation of the state’, but can also ‘indicate that the action is complete’ (Sneddon, 2010:205). Contextual information allows for the appropriate interpretation (22). *Sudah* does not have to occur with verbs, and may occur with other predicates (23).

(22) *Dia sudah tidur.* Standard Indonesian
 PRO3 sudah sleep (based on Sneddon, 2010:205)
 ‘She has gone to sleep’ or ‘She is asleep’ or
 ‘She has slept (and is now ready to work).’

(23) *Dia sudah tinggi / di sini / guru* Standard Indonesian
 PRO3 sudah tall LOC teacher (based on Sneddon, 2010:205)
 ‘He is already tall / here / a teacher.’

In Indonesian an alternative to *sudah – telah* – is usually used only for formal registers such as writing and public speaking, whereas *sudah* may occur in any register (Sneddon, 2010:205).

Varieties of Malay are used across a vast geographic area (Tadmor, 2009), and there is considerable variation in completive aspect markers. The use of *sudah* varies greatly across Indonesia in form, position and function. Formal variants of *sudah* include *suda(h)*, *uda(h)*, *da(h)* and *su* (Sweesun Koh 1990:202-8; David Gil, personal communication, 15 August 2012). Although *sudah* usually occurs pre-verbally in standard varieties – as in (20) to (23) – it may occur post-verbally and clause-finally in colloquial varieties of Malay.

Sudah also has a number of different functions, and within a single variety it is often the case that different functions may be associated with different forms and with different syntactic positions. Some of these functions may be tense, aspect or mood functions – which may vary from perfect to perfective, and perhaps past – and also other functions, such as exhortative. For example, in Papuan Malay the form *suda* can have a perfective or a perfect meaning, as in *suda makan* (‘already eaten’), and can optionally cliticise to the verb as *su=makan*. When occurring post-verbally (*makan suda*) the same form functions as an exhortative, along the lines of ‘eat, already!’, but *makan su* is not grammatical (David Gil, personal communication, 16 August 2012). Contrastingly, in Kupang Malay *makan su* is grammatical (ibid.).

In an analysis of Ambonese Malay, where *sudah* can be reduced to *suda*, *su*, *so* and *s*, van Minde and Tjia (2002) suggest that *sudah* must be studied from the perspectives of semantics, discourse and pragmatics.¹¹⁸ At the lexico-semantic level, it can mark phasal aspect, as part of a ‘lexical sub-system’ together with ‘not yet’, ‘still’ and ‘no longer’, which they refer to as ‘basic – that is, language-independent – phasal polarity notions’ (van Minde & Tjia, 2002:290). In other words, *su* in Ambonese Malay conveys ‘polar contrast and sequencing with an adjacent (immediately preceding) situation’ (ibid.:294):

- (24) *Ocep su di ruma.* *Ambonese Malay*
 Ocep TMA at house. (van Minde & Tjia, 2002:290)
 ‘Ocep is/was already at home.’

It was noted in section 5.1.3(ii) that the completive is strongly linked to expectation, and has cultural significance in many parts of Indonesia – in (14) for example – and so it is perhaps not surprising that van Minde and Tjia (2002:301) also find that *su* functions at the pragmatic/illocutionary level. Here, *su* can indicate special relevance, noteworthiness and factuality emphasis. In (25), they suggest that *su* marks the proposition as being especially relevant, while in (26b) the speaker expresses a conjecture or expectation about the likelihood of rain.

- (25) *Beta paspor su ilang.* *Ambonese Malay*
 1S passport TMA lost. (van Minde & Tjia 2002:290)
 ‘I’ve lost my passport.’

- (26a) *Mo ujang ni!* (26b) *Su mo ujang ni!*
 TMA rain this TMA TMA rain this
 ‘It’s about to rain!’ ‘It’s about to rain (indeed)!’
Ambonese Malay (van Minde & Tjia, 2002:295)

A third pragmatic function is appropriate where *suda* appears as a full predicate (as a one-word clause); in these cases van Minde and Tjia suggest it can mean ‘Okay (that’s enough)’, or express resignation (*ya, suda*).

Clause-final *suda* further functions ‘as an illocutionary particle that relates the propositional content of the preceding clause to some aspect of the extra-linguistic setting, or the linguistic context of the clause’ (ibid.:298). For example, it can indicate urgency, pre-empt anticipated objections, or exhort an interlocutor to take action. There is a trace of completion in all of these,

¹¹⁸ Ambonese Malay is used primarily in Maluku, an island group in the eastern part of Indonesia (see the map in Appendix 4).

and van Minde and Tjia use the term ‘factuality emphasis’ in recognition of the close cognitive association with completion/accomplishment (ibid.:300).

At the discourse level, *su* co-determines chronological or logical-causal relationships between consecutive clauses, through anteriority. In (27), *su* ‘marks the state of affairs referred to by the pertinent clause as preceding in actual time the states of affairs referred to by the following clauses’ (ibid.:297). An additional function is topicality, as in (28), which raises the status of the information in the ensuing clause.

- (27) *Kat'ong dua makang. Su mandi abis, makang lalu*
 1P two eat TMA wash finish eat then
kat'ong sisir rambu, konci pintu, la kat'ong dua pulang.
 1P comb hair lock door then 1P two go.home
 ‘The two of us eat. When we have taken a bath, we eat, then we comb our hair, lock the door, and go home.’

Ambonese Malay (van Minde & Tjia, 2002:297)

- (28) *Su tua, mau pi dansa lai!* *Ambonese Malay*
 TMA old want go dance also (van Minde & Tjia, 2002:297)
 ‘Old as you are, you still want to go out dancing!’

Importantly, van Minde and Tjia (2002:298) argue that ‘completion is not at the core of TMA [tense-modality-aspect] particle *su*,’ which occurs before the predicate, since it can be used in examples such as (29). Conversely, the full predicative *suda* marks completion and accomplishment. This is an example in the literature of a proposed link between syntactic distribution and function.

- (29) *Lia, anto su makang.* *Ambonese Malay*
 look 3S TMA eat (van Minde & Tjia, 2002:298)
 ‘Look, he’s already eating (he has started eating already) / He has eaten already.’

Observing that ‘the distinction between perfective and perfect may be quite vague’ (ibid.:301), van Minde and Tjia note that *su* as a phasal polarity item could be labelled a perfective aspect marker, while its pragmatic function in conveying special relevance, noteworthiness and factuality can be associated with the perfect (ibid.:302). This is an example in the literature of a single form that can express perfect or perfective aspect, depending on the context.

ii) Javanese

Robson (1992:65) lists 12 Javanese aspect markers, including the completive aspect. Lexically, completive aspect markers are different on each speech level, as in (30) and (31):

- (30) ngoko: *Sepuluh telu ki jare wis dadi durung jakete?*
 low basa: *Sedasa tiga niku ngendikane pun dados dereng jakete?*
 high basa: *Sedasa tiga menika ngendikanipun sampun dados dereng jaketipun?*
 ‘How about class 10-3, have they got their jackets?’

Javanese (Isrokha, 2011:32)

- (31) ngoko: *Kowe apa wis mangan?*
 krama: *Sampeyan napa pun nedha?*
 krama inggil: *Panjenengan punapa sampun dhahar?*
 ‘Have you had lunch/dinner?’

Javanese (Subroto, Dwirahardjo & Setiawan, 2008:90)

It has already been noted above that the Malay/Indonesian word *sudah* can stand alone as a complete utterance. Oakes (2009:827) notes that *wis* (pronounced/written *wes* in some varieties, such as Paciran Javanese) can also be used alone as a fully syntactic sentence meaning ‘Yes, I have’ or ‘Yes, it is’.

In terms of the function of *wis* in Javanese, it is often labelled a perfective marker, but sometimes also a perfect marker (see for example Connors, 2008).¹¹⁹ Vander Klok (2012:29) stresses the need for further research on the marker *wis*, because it appears to have elements of both perfective and perfect aspects: she notes that Robson (1992:65) refers to *wis* as indicating that an event is completed, but that other linguists (such as Horne, 1961:91) seem to stress the present relevance of a past situation (the perfect). It may be that *wis* can be regarded as a completive aspect marker, which can reference both the perfective and the perfect, but this is not the place to pursue such an enquiry.

iii) Makassarese

The clearest treatment to date of completion in Makassarese can be found in Jukes (2006, 2011). Makassarese has a large inventory of clitics, which are used to cross-reference the pronouns of arguments and to express tense, aspect and modality (Jukes, 2006:141).¹²⁰ The perfective aspect is expressed in Makassarese using an enclitic (=mo), which marks ‘completion of an action or event, or attainment of a state’ (ibid.:146). Due to the combination of different clitics, it loses its final vowel when followed by =a or =i (see Table 5.2).

¹¹⁹ The abbreviations used in the literature to label grammatical categories (PRF, PFT, PFCT) can be baffling because such labels do not always make clear distinctions between ‘perfect’ and ‘perfective’.

¹²⁰ See section 3.5.2(i) for an introduction to clitics, and 5.2.2 for completive clitics in the CISLV.

Table 5.2. Combinations of perfective and pronominal enclitics in Makassarese (Jukes, 2006:146).

pronominal enclitic		pronominal + perfective enclitics
first person	=a'	=ma
first person plural (inclusive) / second person (polite)	=ki'	=maki'
first person plural (exclusive)	=kang	=makang
second person familiar	=ko	=mako
third person	=i	=mi

The functions of =*mo* are several: as well as being ‘the most frequent marker of past tense’ (Jukes, 2006:146), it is used to make aspectual distinctions (32), and has other functions related to mood and discourse; it can form imperatives (33) and express certainty. The =*mo* enclitic is also used in questions, to indicate that an explicit or certain answer is required. In (34) the questioner wishes to know exactly where an interlocutor’s home is, while the question ‘Where is your home’ does not include the =*mo* enclitic (ibid.:147). The third person conjugation =*mi* is very common in Makassarese and also Makassar Malay, where it is often used redundantly, as in *sudahmi* (‘already already’) (Anthony Jukes, personal communication, 21 November 2012).

- (32) *angnganrema'* Makassarese
 aN(N)- kanre =mo =a' (Jukes, 2011:24)
 BV- eat =PFV =1
 ‘I have already eaten.’

- (33) *ammempomaki'* Makassarese
 amm- empo =mo =ki' (Jukes, 2011:24)
 MV- sit =PFV =2P
 ‘Please sit yourself down.’

- (34) *keremi mae pammantangannu* Makassarese
 kere =mo i mae pa> amm- antang <ang =nu (Jukes, 2011:24)
 where =PFV =3 be NR> MV- live <NR =2F.POSS
 ‘Where exactly is your home?’

When =*mo* is combined with other forms, such as *ta=* and the negators *tena* and *tinang*, the meanings become ‘already not’, ‘no more’ and ‘never again’, respectively (Jukes, 2006:148).

From the brief overview of completion in varieties of Malay, Javanese and Makassarese, two points may be deduced. First, there is significant variation in both the forms and functions of the completive in the varieties of Malay that are used across the Indonesian archipelago. Completive forms commonly have several functions, many of which are related in some way to a core meaning of completion (exhortative, imperative). Clearly, one line of enquiry concerns whether a similar degree of variation can be found in the CISLV. Secondly, it will be necessary to look at different levels of linguistic organisation, using lexico-semantic, pragmatic and discourse perspectives, since completives often operate on several levels. As is the case for Ambonese

Malay, the forms and syntactic distribution of completives may help shed light on the different functions that the completive fulfils.

5.1.5. The completive aspect in signed languages

Having looked at how the completive is realised in several spoken languages in section 5.1.4, I turn to how it is encoded in sign languages. Rather than take a language-by-language approach, I consider firstly the formal means of encoding the completive aspect (section (i)) and then the functional properties that completives exhibit (section (ii)). According to Zeshan (2003b:49), the category of completive aspect is very common across sign languages, and in section 5.1.5 the discussion draws upon sign languages for which completion has been examined in the literature.

i) Formal means of encoding the completive aspect in sign languages

Most of the sign languages for which completion has been studied express it using particles.¹²¹ Zeshan (2003b:49) notes that particles are ‘by far the most common way of marking completive aspect in sign languages’. An example of a particle is the ASL sign FINISH, which is shown in Figure 5.1. In light of the formal and functional variation that has been found in spoken languages, it is notable that comparatively little has been reported on formal variation among completive particles in sign languages. It is not certain whether this is because variation has simply not been documented, or because such variation is uncommon. Zeshan (2003b) reports on three particles in Turkish Sign Language (TİD) – see below – but it is not clear whether these particles are functionally equivalent. The same is true of Auslan: data presented by Johnston (2011:20) suggests that there are at least six signs that might indicate completion (glossed as FINISH.1 to FINISH.6) but it is not clear whether these are functionally equivalent.



Figure 5.1. FINISH in ASL (Rathmann 2005:47).

¹²¹ Documented examples of such sign languages include ASL (Fischer & Gough, 1999; Rathmann, 2005), BSL (Sutton-Spence & Woll, 1999), FinSL (Salonen, 2011), HKSL (Tang, 2009), IPSL (Zeshan, 2000a,b), IsraeliSL (Meir, 1999), LIS (Zucchi, 2009), Kata Kolok (de Vos, 2012b), TİD (Zeshan, 2003b) and UgSL (Lutalo-Kiingi, 2014).

TİD is a particularly remarkable language in terms of completion, because it appears to encode completion in three very different ways, through the use of particles, movement patterns and mouth gestures. As noted above, particles are common across sign languages – see below on ASL and Auslan, for example – and TİD has several. Zeshan (2003b:50) mentions two signs (TAMAM ‘done, complete, ready’ and BITTI ‘finish(ed)’) along with a third OLMAK ‘be, become’ that seems to have a resultative function. TAMAM and BITTI may occur at the sentence level (35) or the discourse level at the end of the paragraph (36) or text (37).

(35) BEN OKUL TAMAM TİD
 IX₁ school done (Zeshan, 2003b:50)
 ‘I have finished school.’

(36) BEN O_{sol} ISARET TELEVIZYON O_{sol} ₁HABER_{sag}-tekrar BITTI
 IX₁ IX_{left} sign television IX_{left} ₁message_{right}-iterative finish
 ‘I kept telling [the deaf people] in signs what was happening on TV, that’s one thing.’
TİD (Zeshan, 2003b:50)

(37) SONRAKI HAFTA TAMAM _{sol,yukari}UCAK_{on} GELMEK TAMAM
 next week done _{left.up}airplane_{fwd} come done
 ‘After a week, [the trip] was over and I came back home, and that’s it.’
TİD (Zeshan, 2003b:50)

However, Zeshan describes a movement pattern that occurs quite commonly with a range of predicates: this ‘consists of a single accentuated movement, which may have a longer movement path than its non-completive counterpart and may be accompanied by a single pronounced head nod or, alternatively, a forward movement of the whole torso’ (ibid.:51). The use of movement patterns are common in sign languages for other kinds of aspect, such as habitual and continuative (Sandler & Lillo-Martin, 2006:47), but this is the first instance of a movement pattern for the completive aspect.

Besides grammatical particles and movement patterns, a third option in TİD is the mouth gesture ‘bn’. Dikyuva (2011:47) describes this mouth gesture as ‘an extremely common and frequent feature of TİD’, and ‘strongly associated with actions’ (ibid.:48), as in (38).

(38) BEN INGILTERE bn GITMEK TİD
 me England go (Dikyuva, 2011:47)
 ‘I have been to England.’

In some sign languages, completive aspect markers have a limited syntactic distribution. For example, the completive particle in IPSL always follows the predicate, and has scope over the whole clause (Zeshan, 2003a:159), as in (39):

(39) YESTERDAY FATHER DIE COMPLETIVE
'(My) father died yesterday.'

IPSL
(Zeshan, 2003a:159)

In other sign languages, completive aspect markers may occupy one of several syntactic slots. For example, the ASL sign FINISH may occur pre-verbally or clause-finally, and Rathmann (2005) argues that pre-verbal FINISH shows the perfect, while clause-final FINISH shows perfective viewpoint. Additionally, the completive FINISH in Ugandan Sign Language (UgSL) sometimes appears to cliticise (Lutalo-Kiingi, 2014:117) (see section 3.5.2(i) on clitics). In this case, the handshape for FINISH assimilates to the handshape for SEE:2, while the outward twist in the orientation of FINISH is retained; the sign co-occurs with the completive mouth pattern 'fi'.

So far, I have discussed how the completive is expressed formally in different sign languages. In section (ii), the functions of completive forms are considered.

ii) Functional properties of completive forms in sign languages

There is little in the literature to date on the functions of completives in sign languages, and most of this research relates to the sign FINISH in ASL. Friedman (1975:952) describes FINISH as a perfective, but Rathmann (2005) detects a relationship between syntactic distribution and function. Using tests for perfectivity, perfect aspect and past on FINISH before the verb and at the end of the clause, Rathmann (2005:144) concludes that pre-verbal FINISH is a perfect marker, while clause-final FINISH is a perfective marker. However, several other functions for FINISH have been identified. Fischer and Gough (1999:67) note that: 'just about all of the meanings of FINISH are semantically, and to a certain extent syntactically, related'. They then identify several parts of speech for FINISH: it can be a main verb, a past-participle adjective, an adverb, and 'a sort of auxiliary verb' that can occur in first, second or final position. FINISH also marks perfective action and can be used in sequences of actions, as in (40), where it has a subordinating function.

(40) WAIT SHIRLEY READ FINISH GIVE-YOU YES WAIT
'Wait until Shirley has read it, then we'll indeed give it to you; just wait.'

ASL (Fischer & Gough, 1999:70)

FINISH has further meanings, which Fischer and Gough (1999) refer to as being 'somewhat peripheral to the structure of the sentence' (ibid.:70) – these include 'that's all' and 'that's enough!'¹²² Incidentally, they also note that FINISH may cliticise, but only 'with certain verbs such as SEE, READ and TOUCH,' where 'the hand configuration for FINISH assimilates to the hand configuration of the previous verb' (as with clitics in UgSL in section (i), above).

¹²² According to Janzen (1998), a third meaning is 'stop that!'

Janzen (1998) describes FINISH as having three separate grammatical functions: a pre-verbal perfect; a clause-final completive; and a conjunction ('and then'). This third function is of particular interest, since it is an attempt to explain the occurrence of FINISH in examples such as example (41).

(41) GO RESTAURANT EAT++ [FINISH]-top TAKE-ADVANTAGE SEE TRAIN ARRIVE

'We went to a restaurant and ate **and then** got a chance to go and see the train arrive.'

ASL (Janzen, 2003:2, my emphasis)

Janzen (2003:4) describes the conjunction as meaning that 'the first action is completed and so a second action follows it; the completion of the first action enables a second action to follow it'. According to Janzen (2007:186), FINISH 'retains ... "pivot" functions in that it looks back to the item that comes before it, but also looks forward to the clause to follow.' Rathmann (2005:145) notes that Janzen's approach is motivated by information ordering, while his own approach is concerned with event structure. He further notes (2005:147) that Janzen interprets a non-manual expression (brow-raise) occurring with FINISH as a topic marker. This suggests that Janzen regards FINISH as belonging to the second of the two sentences, while Rathmann considers it to be the final sign of the first sentence.¹²³ These issues are discussed further in section 5.3.2.

Johnston (2011:20) presents an analysis of two Auslan sign types in the semantic area "finish" (FINISH.5 and FINISH.6) according to the following grammatical classes: verb, auxiliary, interjection, discourse marker, noun, conjunction, adjective, and adverb. Elsewhere, Johnston gives definitions of these classes: for example, auxiliaries are defined as co-occurring with a main verb, and expand its meaning in some way (Johnston, 2011:52). The difficulty with this kind of classification has already been referred to in the last paragraph. More generally, Johnston (2014a:59) notes that some signs 'appear not to be unambiguously in one class or another' and that researchers may parse a given string differently, resulting in disagreement as to how to assign a grammatical class to some signs (Johnston, 2011:7).

To summarise, although little has been written about the functions of completives across sign languages, what *has* been written suggests that completives may perform several functions, as they can in spoken languages. Just as varieties such as Ambonese Malay may be analysed at different levels of organisation (section 5.1.4(i)) so it seems useful to consider the functions of completive signs from different perspectives, such as lexico-semantics, pragmatics, and discourse. Given this tendency of completives to perform functions at several levels of linguistic organisation – sometimes simultaneously – completive signs may have membership of several grammatical classes, such as 'conjunction' and 'discourse marker' (as with FINISH in ASL) and so I do not attempt to categorise instantiations of the completive aspect according to discrete

¹²³ However, Janzen (2007:186) comments that 'topic' might not be the best label to describe this category.

grammatical classes. Instead I focus in section 5.3 on the functions that the completive can perform, bearing in mind that the same token may perform more than one function.

5.2. Completion in the Solo and Makassar sign language varieties

In section 5.2 I discuss the forms that express completive aspect. Having observed that the completive aspect is expressed often in the CISLV, and that there are different forms for doing so, the first step was to identify, categorise and gloss the four particles that express the completive aspect (section 5.2.1). An inventory of variant forms is provided, with the phonological specifications of the major variants; I also make a case for considering these as functionally equivalent lexical variants. Most of these forms have other meanings and functions, and compelling evidence points to grammaticalisation sources for these particles. Where their meanings or functions are unrelated to completion, they have been excluded from the analysis, and the remaining tokens comprise the total set of utterances in which the completive varies. In addition to the use of particles, completion is also expressed through cliticised particles (5.2.2) and mouthings (5.2.3), and the distribution of forms is presented in section 5.2.4.

5.2.1. Completive particles

i) Inventory of variants

Four manual forms that express completion occur widely in the data (Figure 5.2).¹²⁴ These are glossed after *sudah*, the most frequent completive particle in Malay – see 5.1(iii) and (iv).¹²⁵

SUDAH:1 is articulated with a flat handshape, and has a quick orientation change produced by a twist to the wrist; at the end of the sign, the palms face away from the body, though the exact orientation is underspecified.

SUDAH:2 uses a flat handshape, and has a slower change in orientation; the twist of the wrist is opposite in direction to SUDAH:1, and the sign's final position is palm-up.

SUDAH:3 is articulated with a flat handshape facing to the front of the signer, and is produced with a forward push from the body.

SUDAH:4 uses a 'thumbs up' handshape and can involve a small movement forward. These forms may be one or two-handed.

Examples are provided from the CISLV for each form in (42)-(44), which come from Palfreyman (2013:156).

¹²⁴ These are the four main variants in the CISLV. The omission of low frequency variants from an analysis is common practice in sociolinguistics (for example see Baker, 2010a:37), and here nine other forms are excluded from the analysis. In four cases, a form occurs only once in the CISLV by signers who mostly use the main variants. In the remaining five cases, three forms are produced by one signer, and two by another; these have likely been acquired from other regions through language contact, or are idiolectal.

¹²⁵ Glosses are not based upon mouthings, although *sudah* is the most common mouthing for these forms (see 5.2.3).



Figure 5.2. The four completive forms that occur in the Solo and Makassar data (model: Oktaviani Wulansari; taken from Palfreyman, 2013:156).

(42) Solo

	<u>sudah</u>		
RUMAH	PAKAI-JILBAB	SUDAH:2	MERIAS-WAJAH SUDAH:4
house	put-on-jilbab	COMP	put-on-make-up COMP

‘In the house I put on my jilbab and then my make-up...’

(43) Makassar

	<u>sudah</u>		
MAKAN	SUDAH:1		
eat	COMP		

‘[We] finished eating...’

(44) Solo

KARTU	BERI	SUDAH:3	HILANG TANGGUNG-JAWAB-SENDIRI
card	give	COMP	lost own-responsibility

‘We give them a card. If they lose it, that’s their responsibility.’

All four particles may occur in pre-predicate position (46, 61) and in post-predicate/ clause-final position (42, 43, 44). Particles can also occur by themselves as a single-sign clause (66, 68). The completive marker is also occasionally doubled (45). Doubling occurs in several domains (see, for example, section 6.2.1 on the doubling of negative particles), and hypotheses that have been formed to explain doubling include emphasis and the foregrounding of information (Kimmelman, 2012).

(45) Solo

SUDAH:3	BELAJAR=SUDAH:2		
COMP	learn=COMP		

‘He has (already) learnt from it.’

ii) Evidence of variant status (functional equivalence)

What evidence is there to show that these four forms are indeed ‘variants’ – different ways of realising one and the same variable? I return to the issue of equivalence at the end of section 5.3, once more is known about the formal and functional properties of the completive. At this stage, evidence for variant status rests upon the functional equivalence found in supertokens and parallel contexts – see 3.4.

Examples (46) and (47) are produced by a Makassarese signer within a single 60 second stretch of data. Possible reasons for this intra-individual variation are discussed later in section 5.5, and here it is sufficient to note that SUDAH:1, SUDAH:2 and SUDAH:3 are semantically equivalent in the contexts highlighted in bold type.

(46)

	<u>sudah</u>		<u>sudah</u>		
SUDAH:1	CINCIN		KAWIN:1=SUDAH:3		<i>Makassar</i>
COMP	ring		marry=COMP		
‘[When we] are married...’					

(47)

	<u>sudah</u>		<u>sudah</u>		
KAWIN:2	SUDAH:1		KAWIN:1	SUDAH:2	<i>Makassar</i>
marry	COMP		marry	COMP	
‘When we are married...’					

Example (48) presents a supertoken where a Solonese signer uses SUDAH:4 and SUDAH:1 in consecutive clauses; these clauses have the same meaning, and hence are semantically equivalent. (There are other examples where a variant form occurs in both pre-predicate and post-predicate slots without any apparent difference in meaning, although more research is needed on this.)

(48)

	PT:PRO1 NGOBROL SUDAH:4		PT:PRO1 SUDAH:1 CHATTING		
	pro1 talk COMP		pro1 COMP chat		<i>Solo</i>
‘I have already talked [with her].’			‘[We have] already chatted.’		

The pair of examples shown in (49) is a parallel context, since the same meaning is expressed in each example using different variants:

(49)

	MASAK SUDAH:1				
	MASAK SUDAH:2				<i>Makassar</i>
					<i>Solo</i>
‘When I had done the cooking, (I then...)’					

iii) Evidence of lexical variant status

Of the four forms, there are formal similarities between SUDAH:1 and SUDAH:2, and also between SUDAH:3 and SUDAH:4, which on the surface may suggest that they are phonological variants – see 3.5.1(ii). It is possible to articulate the first pair of variants in a way that suggests that they

differ in only one parameter (the direction of wrist twist), but in the data these signs are usually distinct, and differ in several other ways. SUDAH:2 often finishes palm-up after a twist of the wrist by up to 180°, but SUDAH:1 rarely finishes palm-down, and the twist of the wrist (in the opposite direction) never reaches 180°.

There is also a difference in phonological/syllable weight (Hyman, 1985; Jantunen & Takkinen, 2010; Wilbur, 2011), whereby the movement of SUDAH:1 usually involves a light, quick flick, while SUDAH:2 is slower, heavier and often involves a drop in the position of the wrist. SUDAH:3 and SUDAH:4 differ not only in handshape but also, usually, in movement. SUDAH:3 involves a sharp ‘pushing’ movement forwards, while SUDAH:4 does not always feature any movement. For these reasons, I consider the four forms to be lexical rather than phonological variants.

Since mouthings in the data sometimes exhibit a function or meaning without a corresponding manual form, and such mouthings may be coterminous with other manual signs, it is necessary to establish that these four forms do express completion themselves, apart from mouthings. For each manual form, tokens have been found that are *unaccompanied* by mouthings. On this basis, the possibility that mouthing that carries the load of completion is discounted.

iv) Grammaticalisation sources of the four manual completive markers

There are many examples of sign languages where lexical signs have become functional signs that mark completion, and Pfau and Steinbach (2011) observe that aspectual markers provide ‘probably the best-known instance of grammaticalisation’ for sign languages. Examples include FATTO (‘done’) in LIS (Zucci, 2009), TAMAM (‘done, complete, ready’) in TĪD (Zeshan, 2003b), ALREADY in IsraelSL (Meir, 1999), and READY, BEEN and END in GSL (Sapountzaki, 2005).¹²⁶ Not all completive markers have grammaticalised from signs meaning *finish*. IPSL has a completive aspect particle (HO_GAYA:) that is different from and independent of two signs meaning ‘finish’ and is used as an aspect marker only (Zeshan, 2000a:62).

Elsewhere (Palfreyman, 2013) I suggest the following grammaticalisation sources for the four variant forms described in section (i) above.¹²⁷

(50)	source	target
	HILANG (‘vanish’, ‘disappear’)	SUDAH:1
	HABIS:2 (‘finished, exhausted, used up’)	SUDAH:2
	SAJA (a limitative)	SUDAH:3
	<u>BERES/SIAP (‘ready’, ‘in order’, ‘okay’)</u>	<u>SUDAH:4</u>

¹²⁶ There are two confounding issues when tracking these grammaticalisation processes in the literature. First, as I have remarked elsewhere (Palfreyman, 2013:n.20), researchers have differed in their lexical choices with regard to how these forms are glossed, and this hides the possible meanings that these forms share. Secondly, some sign linguists continue to classify signs as belonging to certain ‘parts of speech’ classes without explaining how this has been determined – see Schwager and Zeshan (2008) on previous approaches to ‘parts of speech’ classification, and why these are theoretically problematic.

¹²⁷ Note that a limitative is a word or sign that restricts meaning; e.g. in the sense of ‘nothing more than’ or ‘nothing other than’ (Jukes, 2011:26).

The grammaticalisation sources in (50) are justified by the use of bridging contexts and switch contexts (Heine, 2002) that are found in the data. Where there is a ‘plausible semantic relationship’, polysemy is assumed, and relationships between a lexical form and a grammaticalised form can then be established (Hopper & Traugott, 2003:77). For example, SAJA and SUDAH:3 are formally identical. There are examples in the CISLV where this form has (a) the sole source meaning (of limitation); (b) a bridging context where limitative *and* completive meanings are available, and the target meaning is foregrounded; and (c) a switch context where only a completive meaning is exhibited. Corresponding examples are shown in (51)-(53).^{128,129}

(51) **source meaning** (limitative) *Solo*

<u>boleh</u>	<u>minta</u>	<u>mau</u>			
BOLEH	MINTA	MAU	PERTAMA	MENYISIR	KEDUA
may	ask	want	first	combing	second
			<u>pijat</u>	<u>bahu</u>	<u>saja</u>
PIJAT-KEPALA	KETIGA	PIJAT-BAHU	SAJA/*SUDAH:3		
massage-scalp	third	massage-shoulders	LIMITATIVE/*COMP		

‘I asked if it’s alright for me only to comb hair and give scalp and shoulder massages.’

(52) **bridging context** (limitative and/or completive) *Solo*

KARTU	BERI	SUDAH:3/SAJA	<u>hilang</u>	HILANG	TANGGUNG-JAWAB-SENDIRI
card	give	COMP/LIMITATIVE	lost	lost	own-responsibility

limitative: ‘We give them a card and that’s all [we are responsible for]. If they lose it, that’s their responsibility.’

completive: ‘We give them a card, and then if they lose it, that’s their responsibility.’

(53) **switch context** (completive) *Solo*

PT:PRO3	PANGGIL	PT:PRO3	BANTU-KAMI	SUDAH:3/*SAJA
pro3	call	pro3	help-us	COM

P/*LIMITATIVE

‘I have already asked him to help us.’

Intriguingly while HABIS:2 occurs in both varieties, the limitative SAJA only occurs in the Solo variety. I return to this point in the summary for this chapter (5.6).

5.2.2. Completive clitics

Using the criteria described in section 3.5.2(i), completive clitics have been identified in both Makassar and Solo. This is another example of a modality-independent grammaticalisation process, where free grammatical markers change to become grammatical affixes (Pfau & Steinbach, 2011), although this process is unfinished, and no completive affixes can be found in the data. These are cliticised particles, and originate from the four main variants described in section 5.2.1. Examples of clitics can be seen in (45), (46) and (55). Of the 264 completive

¹²⁸ See Palfreyman (2013) for an in-depth analysis of these examples, and others that indicate the grammaticalisation sources of SUDAH:1, SUDAH:2 and SUDAH:4.

¹²⁹ The asterisk is used to indicate that the following sign (or example) is not grammatical.

particles that have been glossed so far, 18.6% are cliticised to a host, and all tokens are enclitics. Host forms for enclitics include functional signs, such as pronominals (55), and lexical signs meaning ‘learn’ (45), ‘marry’ (46), ‘meet’ (59), ‘crush’ (64), ‘talk’ and ‘go home’. For further discussion of cliticised completive particles, see section 3.5.2(i) and Palfreyman (2013:156).

5.2.3. Completive mouthings

There are two ways in which mouthings are used to express completion, and there is a significant difference between the two. First, signers may add mouthings to manual completive markers, and 90.2% of manual tokens of completion (n = 264) are accompanied by mouthings such as sudah (42) and habis (69). A similar phenomenon occurs in other sign languages, such as BSL, where the sign BEEN is accompanied by been. The only remarkable point is that, for a small number of tokens, the root word that is mouthed is not completive. These include lulus (‘pass (a test)’) and jadi (‘happen’), both of which occur twice in the annotated data. The addition of ya before sudah and yo before wis adds a strong element of resignation (see 5.3.3).

The other option is to use mouthing alone to express the function of completion. This occurs for 35 out of 299 tokens of grammatical completion that have been identified and annotated in the data.¹³⁰ In other words, mouthing assumes the full functional load in 11.7% of instantiations of completion. Examples are shown below in (54) and (55), the latter of which shows how complex the expression of manual and non-manual expression can be (the non-manual completive tokens in (55) are the only two where a manual completive occurs in the same clause).

(54) *Makassar*
sudah
BAWA-PAKAIAN **MENARUH-PAKAIAN**
 carry-clothes put-clothes-down

‘I carried the basket of clothes [upstairs] and put it down, and then...’

(55) *Solo*
sudah mampir sudah rumah Budi
PT:PRO1 **MAMPIR** **SUDAH:1=PT:PRO1** **RUMAH** **BUDI** |
 pro1 call-in COMP=pro1 house Budi |

‘I have been to Budi’s house.’

sudah mampir
PT:PRO1 **MAMPIR** **PT:PRO1=SUDAH:2 †**
 pro1 call-in pro1=COMP

‘I have been before [to his house].’

†Shown in 3.5.2(i) example (B)

For six tokens, mouthings are used without any manual sign (56), but in the majority of cases the completive mouthing co-occurs with manual signs that have another (non-completive) meaning. These manual signs include pronominal indexicals (first and third person), and signs meaning ‘marry’, ‘old(er)’, ‘cook’, ‘give’, ‘go’ and ‘inform’.

¹³⁰ This occurs 20 times in Makassar, and 15 times in Solo.

(56) sudah

Makassar

KETEMU KETEMU

COMP meet meet

‘She has met her’.

The combination of manual sign and mouthing therefore enables the expression of at least two meanings simultaneously. The full potential of such combination is obtained in (57), where a Makassarese signer also isolates the function of each manual articulator; one hand signifies her siblings (*saudara*) by number using a list buoy construction, while the other hand signifies the Hajj pilgrimage, thus obtaining three meanings at the same time.¹³¹

(57) mouth: sudah sudah sudah sudah
RHgloss: SAUDARA HAJI PT:LBUOY HAJI HAJI HAJI HAJI
LHgloss: SAUDARA LBUOY(1)-----LBUOY(2)---LBUOY(3)---LBUOY(4)---
‘My four oldest siblings have all done Hajj.’

Mouth *gestures* have been reported as expressing completion by themselves in TID (Dikyuva, 2011), and in Kata Kolok the lip-smack that usually co-occurs with a manual completive can attach itself to other predicates (de Vos, 2012a:116). To my knowledge, however, the use of *mouthings* to express completion has not yet been reported in the literature (Palfreyman, 2013:160).¹³² The significance of this is discussed further in chapter 7.

When faced with variation in the manual forms that are used to express completion (see 5.2.1(i) and footnote 124), mouthings may be important in aiding the intelligibility of a completive (see 7.2). However, there is also variation *within* the mouthings that signers use, as shown in Figure 5.3, which shows the distribution of the total number of mouthings across five mouthing variants: none, (ya)sudah, habis, (yo)wis and other.

While (ya)sudah and habis occur in both varieties, (yo)wis occurs only in the Solo variety. That is because (yo)wis is a borrowing from Javanese (see 5.1.4(ii)). This is one of several mouthings in the Solonese part of the CISLV that derives from Javanese, and I address the implications of this in 7.2. It appears that regional and local languages may have an impact on the available sources of mouthing in each area, and can in turn become a source of difference between sign language varieties.¹³³ This is discussed further in section 7.2.

¹³¹ ‘List buoy’ constructions enable signers to enumerate or list two or more items by indexing digits of the hand in turn; each digit corresponds to a number or ‘item’. See Liddell (2003) for further details about this kind of construction.

¹³² Although some linguists believe that there are such instances; for example, Adam Schembri (personal communication, 22 August 2012) notes that BSL users often provide temporal information through mouthing, e.g. modifying the mouthing that accompanies the sign THINK from think to thought when the tense changes from present to past.

¹³³ However, signers may choose not to use such local variants when in contact with signers from other areas – see section 7.2.

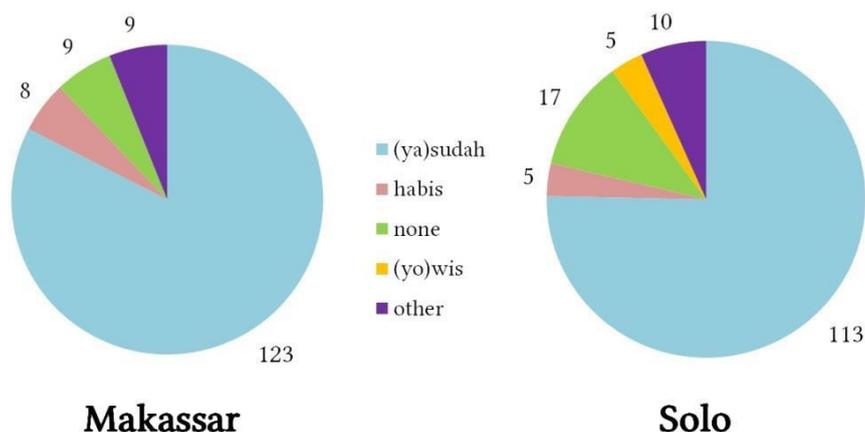


Figure 5.3. Variation in the mouthings used to express completion in Makassar ($n = 149$) and Solo ($n = 150$).

5.2.4. Distribution of completive forms

A schematic overview of the ways in which the completive aspect is instantiated in the CISLV is presented in Figure 5.4.

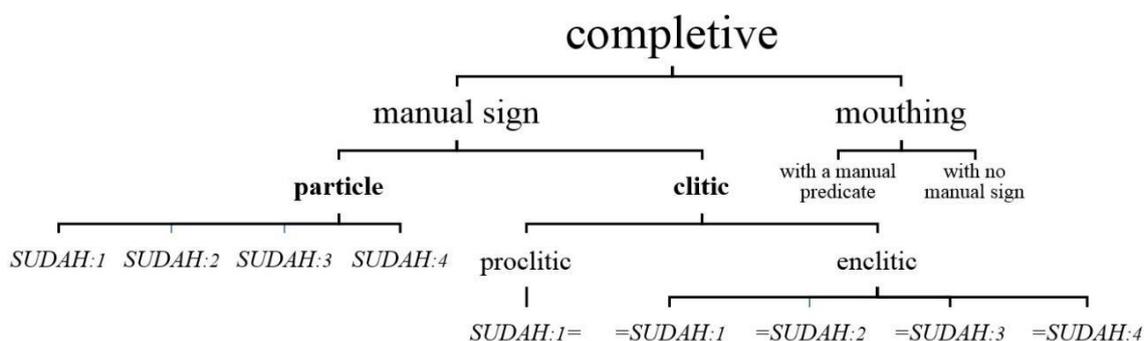


Figure 5.4. Formal expressions of completion in Solo and Makassar.

In the stretches of data that have been annotated, 299 tokens of completion occur. The distribution of lexical variants for completive particles (including free and cliticised particles) is shown in Table 5.3.

Table 5.3. Lexical variants for the expression of completion.

lexical variant	%	N	Makassar	Solo
SUDAH:1	19.7	52	26	26
SUDAH:2	47.4	125	59	66
SUDAH:3	17.0	45	12	33
SUDAH:4	12.5	33	28	5
SUDAH:other	3.4	9	4	5
total	100	264	129	135

When considering the distribution of variants across Makassar and Solo, the first conclusion to draw is that all four variants are realised in each region. On the whole, the distribution of variants is also strikingly similar, particularly for SUDAH:1 and SUDAH:2, though the distribution of SUDAH:3 is skewed towards Solo, and SUDAH:4 towards Makassar. In addition to the four lexical variants for completive particles, it is also possible to analyse variation at the grammatical level, since completion is expressed through free particles, clitics, or mouthings alone. Table 5.4 shows the distribution of grammatical variants. Note that, where in Table 5.3 no distinction was made between free and cliticised particles, this distinction *is* observed in Table 5.4.

Table 5.4. Grammatical variants for the expression of completion.

grammatical variant	N	Makassar	Solo	%
particles	215	115	100	71.9
SUDAH:1	42	23	19	
SUDAH:2	96	51	45	
SUDAH:3	40	11	29	
SUDAH:4	28	26	2	
SUDAH:other	9	4	5	
clitics	49	14	35	16.4
=SUDAH:1	10	3	7	
=SUDAH:2	29	8	21	
=SUDAH:3	5	1	4	
=SUDAH:4	5	2	3	
mouthings (alone)	35	20	15	11.7
total	299	149	150	100

There are also similarities between the Solo and Makassar varieties in terms of the range of cliticised forms, and the use of mouthing, albeit with a few differences in the precise mouthings that are borrowed (5.2.3). Having considered the nature and distribution of completive forms, it is now time to return to the core concept of completion itself, and in section 5.3, the array of functions performed by these forms is analysed.

5.3. The functions of completive markers

Section 5.3 presents an analysis of the functional properties of completive markers. This is necessary given the complex array of functions that these markers exhibit in the data. The functions of completive markers often coalesce, and it is difficult – at times, impossible – to tease apart the different functions and meanings in cases where several readings are available simultaneously. The approach taken here is to focus on ‘prototypical’ examples where the function or meaning of SUDAH is relatively clear. The functional properties of completive markers are analysed at three different levels: the sentence level (5.3.1), the discourse level (5.3.2), and the pragmatic level (5.3.3). This is shown schematically in Figure 5.5. I have given an overview of the functions exhibited by manual completive variants elsewhere (Palfreyman, 2013), and the analysis and examples in this section draw extensively on that account. However, new comments are made on form-function asymmetry in preparation for the analyses of variation presented in sections 5.4 and 5.5.

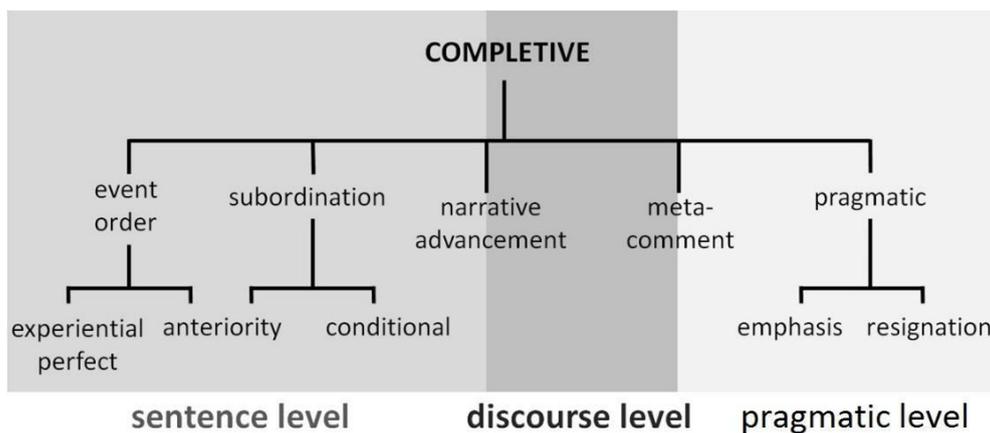


Figure 5.5. Functions of completive markers in sign language varieties of Solo and Makassar.

5.3.1. Sentence level

One of the functions of the completive is to express the experiential perfect (5.1.1). Although some signers use a separate sign for this function (58), it is much more common for the experiential perfect to be expressed by one of the completive markers. In (59) it can be known with some certainty that the experiential perfect is being conveyed – as opposed to the resultative or recent past perfect – because the object of the clause had died quite some time before the time of utterance.

(58) solo pernah *br* Solo
SOLO **PERNAH**
 Solo EXP-PERF
 ‘[Has the President] ever been to Solo?’

(59) **PT:PRO3** **KETEMU=SUDAH:1** † **PT:PRO3** Makassar
 pro3 meet=COMP pro3 (Palfreyman, 2013:161)
 ‘Did she ever meet her?’ †Shown in 3.5.2(i) example (A)

Another function of completive markers is the expression of the anteriority of an action, that is, its having taken place prior to the time of reference. In (60), reference time is inferred as equal to the present, and sometimes this is made explicit with the use of SEKARANG (‘now’) (61).

(60) sudah **KAWIN** **SUAMI** **ISWANDI** Makassar
 marry husband (sign name)
 ‘I have already married Iswandi’/‘I am already married to Iswandi’

(61) **SEKARANG** **SUDAH:1** **BELI** **BARU** Solo
 now COMP buy new (Palfreyman, 2013:161)
 ‘A new one has been bought.’

The element of anteriority that is implicit in the completive marker is underlined in its somewhat different function as a subordinator. In this role, the completive appears at the termination of a

subordinate clause, with a brow-raise to mark conditionality (see Figure 6.6), linking it to the main clause:

- (62) *Solo*
(Palfreyman, 2013:162)
- | | | | | | | |
|---------------------|----------------|--|---------------------|--|--|--|
| | <u>cond</u> | | | | | |
| | <u>sudah</u> | | | | | |
| PAPAN-TUTUP | SUDAH:2 | | KITA-NGOBROL | | | |
| clapper-board-close | COMP | | we-talk | | | |
- ‘When the clapper-board has closed, we will start to chat!’

5.3.2. Discourse level

The completive marker can also convey narrative advancement, since it encapsulates the ‘bounded’ property of perfective viewpoint (5.1.1), and signers use this sign to propel the narrative forward. The narrative advancement function of completive markers is commonly exhibited with sequences of events, or lists. Here, it appears in a clause final slot, separating items from each other and simultaneously clarifying event order (63, 64).

- (63) *Makassar*
- | | | | | | | |
|-------------------|----------------|----------------|---------------|----------------|--------------|----------------|
| | <u>sudah</u> | | <u>sholat</u> | <u>sudah</u> | <u>makan</u> | <u>sudah</u> |
| CUCI-WAJAH | SUDAH:2 | PT:PRO2 | DOA | SUDAH:2 | MAKAN | SUDAH:2 |
| wash-face | COMP | PRO2 | pray | COMP | eat | COMP |
-
- | | | | | | | |
|---------------|--------------|---------------|-------------------|--------------|------------|----------------|
| <u>tambah</u> | | | <u>pa</u> | | | <u>habis</u> |
| TAMBAH | PIKIR | TAMBAH | TIDAK-APA2 | MAKAN | ... | SUDAH:2 |
| add | Think | add | it's-ok | eat | ... | COMP |
- ‘[You could then] wash your face, then pray, and eat. Then you could eat some more, and some more again. It would be ok. And then...’

- (64)
- | | | | | | |
|---------------|---------------------|----------------|------------|-------------------|----------------|
| | | <u>sudah</u> | | | <u>sudah</u> |
| POTONG | MENARUH-AYAM | SUDAH:4 | ... | HANCURKAN= | SUDAH:4 |
| cut | put-chicken-down | COMP | ... | crush=COMP | |
- ‘Cut the chicken and put it to one side, and then...’ ... ‘Crush [the ingredients], then...’

The property of being orientated both backward and forward is typical of discourse markers: an example is *then* in English, which ‘points backward in talk’ and ‘can only mark succession to later parts of a text’ (Schiffrin, 1987:254). This Janus-like property of completive variants could perhaps be due to the fact that, as discourse markers, they *bracket* sections of talk, and ‘brackets look simultaneously forward and backward... the beginning of one unit is the end of another and vice versa’ (Schiffrin, 1987:37). This is a good reason to analyse the completive markers in the CISLV on the discourse level.

Another function of completive markers is to make meta-comments. In these cases, the target constituent to which the completive applies is a unit of discourse. In (65), a signer uses SUDAH:2 to inform her interlocutors that her narrative is complete, and so the target constituent of this completive marker is the entire section of her narrative discourse prior to utterance time. The use of the completive marker in this way also functions at the pragmatic level.

- (65) **SUDAH:1** (short pause) **SUDAH:2** *Makassar*
 ‘And that’s it.’ ‘I’ve finished!’

5.3.3. Pragmatic level

Pragmatic functions that the completive marker exhibits include the addition of emphasis through reduplication (66) and the expression of exhortation (67). The exhortative function here is similar in nature to that discussed in 5.1.4(i).

- (66) *Solo*
- | | | | | | |
|-----------------------------|------------------|--|------------------|--|----------------------|
| | <u>belum</u> | | <u>sudah++</u> | | <u>belum</u> |
| UANG BERI | TIDAK-ADA | | SUDAH:3++ | | TIDAK-ADA#emp |
| money give | NEG-COMP | | COMP | | NEG-COMP.EMPHATIC |
| ‘You haven’t paid him yet.’ | | | ‘Yes I have!!’ | | ‘No you haven’t!’ |
- (67) *Makassar*
- | | | | | |
|--|-------------------|--|--------------------------------|----------------|
| | <u>br</u> | | | |
| MEMBULUHI-AYAM | TIDAK=TAHU | | SUDAH:1 | KE-SINI |
| pluck-chicken | NEG=know | | COMP | come-here |
| ‘You don’t know how to pluck a chicken?’ | | | ‘Come here [and chop onions].’ | |

Resignation can be expressed using the completive marker, and many varieties of Malay also do this, using ‘ya sudah’ (Palfreyman, 2013:163). The type of resignation that signers convey ranges from acquiescence (‘that’s just the way it is’) to dismissiveness, as in (68):

- (68) *Solo*
- | | | | |
|---------------------------------------|------------------|--|-------------------------|
| WAKTU | SEBENTAR+ | | SUDAH:3 |
| time | in-a-minute | | COMP |
| ‘He said “I’ll be there in a minute”. | | | I thought, “Whatever”.’ |

Completive markers in the data exhibit multifunctionality in the same way that they do in other Indonesian spoken languages (e.g. Ambonese Malay, 5.1.4(i)). However, there are also striking parallels between the functions described above, and those found for completive markers in other sign languages, such as FINISH in ASL. Two further observations can be made. First, the completive marker clearly operates at several levels of linguistic organisation. For example, it may indicate the experiential perfect at the sentential level, and perform a conjunction-like role at the discourse level. Secondly, there does not appear to be any obvious one-to-one mapping in terms of form and function, since the functions described in this section can be exhibited by any form.

This means that completive markers can be said to exhibit ‘form-function asymmetry’ (Poplack, Van Herk and Harvie 2002:88), where several forms compete to perform identical functions. In such cases, ‘the question [sic] of who, when and why become immediately pertinent’ in accounting for the forms that are actually used (Sankoff 1988a:151). While there may be no categorical contexts (3.6), it may be that some forms show a preference for certain functions. In section 5.4 I conduct multivariate analysis to shed light on this very issue.

5.4. Lexical and grammatical variation in the domain of completion

In order to find out which linguistic and social factors account for the choice of lexical and grammatical variants in the domain of completion (RQ2), two separate quantitative analyses are conducted in 5.4. Analysis 1 is concerned with the variable expression of manual completion, and has four lexical variants (SUDAH:1, SUDAH:2, SUDAH:3, and SUDAH:4). Analysis 2 is concerned with the variable grammatical expression of completion, and has three grammatical variants (free particle, cliticised particle, or mouthing alone). For each analysis, the aim is to determine which independent factors are statistically significant in the selection of variant, and the relative contribution of these factors from more to less (the constraint hierarchy) – see 3.6.

5.4.1. Circumscribing the variable context

As mentioned in 5.2.1(iv), all four completive markers are polysemous, as their forms have other meanings or functions that are not completive. This is shown schematically in Figure 5.6.

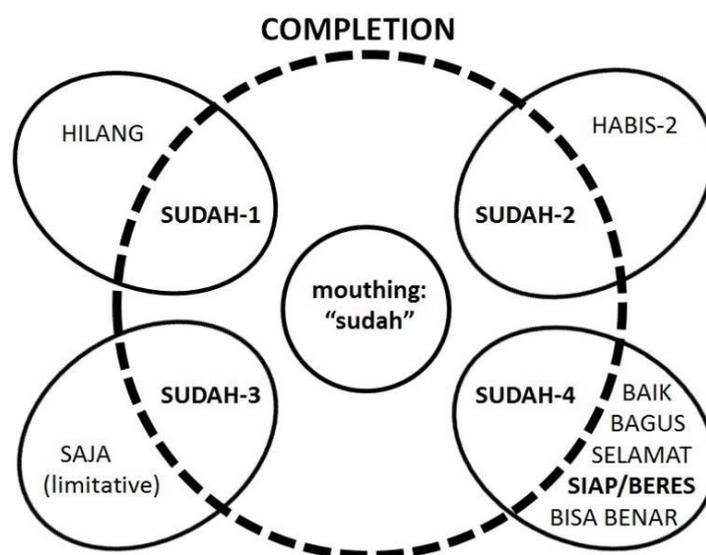


Figure 5.6. Forms of completion markers and other signs that share these forms (from Palfreyman, 2013:164).¹³⁴

To proceed, it is necessary to exclude tokens that exhibit other meanings and functions, and retain only those tokens where there is a core meaning of completion. Now that the functions of completive markers are clearer (5.3), it is somewhat easier to circumscribe the variable context. For quantitative analysis, however, it is not possible to focus on prototypical examples alone, and decisions must be taken on a token-by-token basis. This is a challenge, given the prevalence of indeterminacy created by ‘bridging contexts’ such as those described in section 5.2.1(iv).

¹³⁴ Several of these words appear in (50). Translations are as follows: HILANG (‘vanish’, ‘disappear’), HABIS:2, (‘finished’, ‘exhausted’, ‘used up’), SAJA (a limitative/‘that’s all’), BAIK (‘good’), BAGUS (‘great’), SELAMAT (‘safe’), SIAP (‘ready’), BERES (‘in order/okay’), BISA (‘can’), and BENAR (‘right’).

The easiest tokens to exclude are those signs that have a meaning or function totally unrelated to completion, such as BISA ('can') and BAGUS ('great'). However, tokens with the form of SUDAH:2/HABIS:2 are particularly tricky to tease apart. The sign HABIS:2 has several related meanings, including 'run out'/'sold out', 'use up' and 'disappeared'/'no longer there', which may all suggest the absence or exhaustion of a *physical quantity*, such as petrol, money or food, that was once present. These are unambiguously outside the domain of completion, glossed as HABIS:2, and excluded from the analysis below. However, reference to the passing or 'running out' of *time* may have something to say about event structure, and contexts such as (69) are ambiguous.¹³⁵

(69)	<u>kerja</u>		<u>wonogiri</u>		<u>habis</u>	<i>Solo</i>	
	PT:PRO1	KERJA	PT:DET	WONOGIRI	KAWIN	SUDAH:2	PULANG
					HABIS:2		
	pro1	work	Det	(place name)	marry	?	go-home
	‘I worked at Wonogiri until the wedding finished, then I came back.’						

I have decided to include contexts where the temporal structure of events is being referenced – as in (69) – because references to time having passed by appear to perform the semantic function of completion. Accordingly, these tokens are glossed SUDAH:2.

In cases of doubling (5.2.1(i)) and reduplication (5.3.3), each occurrence of the completive marker has been included as a separate token. For the purposes of Analysis 1, the distinction between free and cliticised particles is not maintained. For example, =SUDAH:1 is counted as a token of SUDAH:1. This decision is justified on the basis that these forms are moving along the grammaticalisation cline, and began as free particles. Other variant forms (SUDAH:other) are excluded for reasons mentioned in footnote 124. Completion by mouthing alone is also excluded from Analysis 1 because the focus is on the analysis of particles, and many of the coding categories used – such as sentential slot relative to the predicate – are not applicable.¹³⁶ However, for Analysis 2, the categories for ‘clitics’ and ‘completion by mouthing’ are retained, since the aim of that analysis is to determine which factors predict the realisation of completion as a grammatical variable. SUDAH:other variants are also included in Analysis 2.

The principle of accountability requires that the data are circumscribed to only those contexts that are functionally equivalent (Tagliamonte, 2012:10). The analysis that follows is based on the notion that, since all of the functions described in 5.3 are united by the core function of

¹³⁵ It is not advisable to categorise signs on the basis of mouthings, but in any case habis can occur both with HABIS:2 and with completive markers (5.2.3), so the presence of habis in (69) is of no help in determining the most appropriate categorisation.

¹³⁶ These decisions concerning which tokens to include and exclude are dictated by two concerns; the lack of theoretical precedents regarding, for example, how to treat doubling in quantitative analysis, and the overall number of tokens – a fastidious approach would result in too few tokens for analysis. Larger samples and more discussion about the effects of such decisions are highly desirable.

completion, the requirement of functional equivalence is met (see 3.4). However, it should be borne in mind that there may be further subtle distinctions between functions that have not been discerned. I discuss this further in 5.4.6.

5.4.2. Data coding

Following the discussion in 2.3.1 and 3.2, the three social factors included in both analyses are **region** (Makassar, Solo), **sex** (male, female) and **age** (a continuous variable). The **signer code** was used as a random intercept for each run, to account for individual variation (see 3.6). Additional linguistic factors are discussed in turn for each analysis.

Analysis 1

Some of the variables coded for at the preliminary stage proved not to be feasible for inclusion in multivariate analysis. For instance, there were too few examples of similar handshapes and orientations for it to be possible to investigate this factor quantitatively (though see 5.5.3 for some qualitative analysis of this factor). Ultimately, five linguistic variables were coded for: the **syntactic slot** in which the variable appears (pre-predicate, post-predicate, one-sign clause), the exhibition of **narrative advancement function** (yes, no), the **previous realisation of the variable** (same, different), **clitic status** (yes, no) and **text type** (monologue or dialogue).

Given the lack of literature on variation in the grammatical domain of completion at the time, it was not always possible to draw hypotheses concerning the outcomes of quantitative analysis. Syntactic slot is included because this is significant in ASL in determining different functions of completive markers (see 5.1.5(ii)). Narrative advancement function is coded for because it is relatively conspicuous compared to some of the other functions exhibited by completive markers, and hence easier to identify. Guiding criteria for identifying narrative advancement are as follows: it occurs clause-finally, often in stretches of data that are dominated by a single signer, as opposed to regular turn-taking; amenable environments include narratives where event ordering is important; additionally, there may be a weaker link between the completive marker and the predicate in these cases, such as a slight pause.

The previous realisation of the variable is included to test the hypothesis that the previous realisation of a variable influences its ensuing realisation (see for example Szmrecsanyi, 2005). Clitic status is coded for in order to determine whether certain variants are preferred for cliticisation. Finally, the text type is included to see whether narrative stretches of data are more likely to result in the production of a certain type of variant compared with dialogue stretches. Johnston et al. (under review) also include text type in their coding. The narrative/dialogue distinction is not made on the basis of whether one signer or many signers were filmed, but on the stretch of text in which the completive occurs.

Analysis 2

Only social factors have been included in this analysis, along with the text type (narrative or dialogue). It was not possible to include many of the factor groups that were tested in Analysis 1, such as syntactic slot and previous realisation of the variant, because this coding is not applicable to mouthings and clitics. For example, clitics always occur after their host, and mouthings may occur simultaneously with the predicate, so the ‘syntactic slot’ category does not apply to these variants.

5.4.3. *Rbrul* findings

i) Analysis 1

Since *Rbrul* can only deal with dependent variables that are binary (3.6), four runs were conducted, and a different variant was selected as the application value for each run. For example, the dependent variables for the first run were **SUDAH:1** and **not SUDAH:1**; for the second run, **SUDAH:2** and **not SUDAH:2**, and so on. The results are shown in Table 5.6 on the next page, with significant findings shown in cells with darker shading. A summary of these findings is presented below in Table 5.5.

Table 5.5. A summary of Rbrul findings for Analysis 1 (shown in full in Table 5.6, overleaf). The darkest shading indicates $p < 0.001$; the lightest shading indicates that $0.01 < p < 0.5$.

variable	SUDAH:1	SUDAH:2	SUDAH:3	SUDAH:4
sex	not significant	not significant	not significant	not significant
age	not significant	not significant	not significant	not significant
region	not significant	not significant	favoured by the Solo variety	favoured by the Makassar variety
narrative or dialogue	favoured by dialogue contexts	not significant	not significant	not significant
syntactic position	favoured by pre-predicate contexts	not significant	not significant	not significant
narrative advancement	not significant	favoured by advancement contexts	disfavoured by advancement contexts	not significant
previous realisation	not significant	favoured by similar previous realisation	favoured by similar previous realisation	favoured by similar previous realisation
clitic status	not significant	not significant	disprefers cliticisation	not significant

(overleaf) *Table 5.6. Rbrul findings for Analysis 1: lexical variation for completive markers.*

deviance	232.324				296.966				154.42				147.07			
DF	5				4				6				4			
grand mean	0.212				0.502				0.169				0.118			
application value	[SUDAH:1] vs. other				[SUDAH:2] vs. other				[SUDAH:3] vs. other				[SUDAH:4] vs. other			
factors	L-O	%	N	CFW	L-O	%	N	CFW	L-O	%	N	CFW	L-O	%	N	CFW
sex	(p = 0.426)				(p = 0.12)				(p = 0.473)				(p = 0.112)			
female	0.245	22.8	127	0.561	-0.443	42.5	127	0.391	-0.462	15.7	127	0.387	0.597	18.9	127	0.645
male	-0.245	19.5	128	0.439	0.443	57.8	128	0.609	0.462	18.0	128	0.613	-0.597	4.7	128	0.355
	<i>range: 12</i>				<i>range: 22</i>				<i>range: 23</i>				<i>range: 29</i>			
age	(p = 0.901)				(p = 0.145)				(p = 0.497)				(p = 0.101)			
continuous (+1)	Log odds: 0.003				Log odds: -0.038				Log odds: 0.031				Log odds: 0.045			
region	(p = 0.0919)				(p = 0.45)				(p = 0.034)				(p = 0.00504)			
Makassar	0.271	22.4	125	0.567	-0.161	48.8	125	0.460	-0.916	8.0	125	0.286	0.885	20.8	125	0.708
Solo	-0.271	20.0	130	0.433	0.161	51.5	130	0.540	0.916	25.4	130	0.714	-0.885	3.1	130	0.292
	<i>range: 13</i>				<i>range: 8</i>				<i>range: 43</i>				<i>range: 42</i>			
narrative or dialogue	(p = 0.000205)				(p = 0.636)				(p = 0.493)				(p = 0.38)			
narrative	-0.682	10.8	130	0.336	0.104	58.5	130	0.526	0.131	14.6	130	0.533	0.213	16.2	130	0.553
dialogue	0.682	32.0	125	0.664	-0.104	41.6	125	0.474	-0.131	19.2	125	0.467	-0.213	7.2	125	0.447
	<i>range: 33</i>				<i>range: 5</i>				<i>range: 7</i>				<i>range: 11</i>			
syntactic position	(p = 0.047)				(p = 0.466)				(p = 0.958)				(p = 0.216)			
pre-predicate	0.734	43.9	41	0.676	-0.348	36.6	41	0.414	0.186	14.6	41	0.546	-0.765	4.9	41	0.317
post-predicate	-0.242	16.9	160	0.44	-0.009	55.0	160	0.498	-0.005	13.1	160	0.499	0.722	15.0	160	0.673
one-sign clause	-0.493	16.7	54	0.379	0.357	46.3	54	0.588	-0.181	29.6	54	0.455	0.043	7.4	54	0.511
	<i>range: 30</i>				<i>range: 17</i>				<i>range: 9</i>				<i>range: 36</i>			
narrative advancement	(p = 0.48)				(p = 0.000216)				(p = 0.00182)				(p = 0.698)			
yes	-0.341	10.2	88	0.415	0.731	67.0	88	0.675	-1.121	4.5	88	0.246	0.261	18.2	88	0.565
no	0.341	26.9	167	0.585	-0.731	41.3	167	0.325	1.121	23.4	167	0.754	-0.261	8.4	167	0.435
	<i>range: 17</i>				<i>range: 35</i>				<i>range: 51</i>				<i>range: 13</i>			
previous realisation	(p = 0.333)				(p = 0.000823)				(p = 0.000355)				(p = 0.00782)			
same	0.304	31.1	45	0.575	0.595	70.4	98	0.644	1.064	63.2	38	0.743	0.776	46.4	28	0.685
different	-0.304	19.0	210	0.425	-0.595	37.6	157	0.356	-1.064	8.8	217	0.257	-0.776	7.5	227	0.315
	<i>range: 15</i>				<i>range: 29</i>				<i>range: 49</i>				<i>range: 37</i>			
clitic status	(p = 0.646)				(p = 0.0744)				(p = 0.0368)				(p = 0.347)			
yes	-0.113	20.4	49	0.472	0.368	59.2	49	59.1	-0.667	10.2	49	0.339	0.312	10.2	49	0.577
no	0.113	21.4	206	0.528	-0.368	48.1	206	40.9	0.667	18.4	206	0.661	-0.312	12.1	206	0.423
	<i>range: 6</i>				<i>range: 18</i>				<i>range: 32</i>				<i>range: 15</i>			

Dialogue stretches of data (where the text features several turns from more than one signer) are found to favour SUDAH:1, with a factor weight of 0.66, and there is also a correlation between SUDAH:1 and the pre-predicate slot (0.68, compared with 0.44 for post-predicate and 0.38 for one-sign clause). Narrative advancement function strongly favours SUDAH:2 (factor weight 0.68) and disfavors SUDAH:3 (0.25). Where a variant is previously realised as SUDAH:2, SUDAH:3 or SUDAH:4, signers are likely to reproduce the same variant. In addition, clitic status does not favour any variants, but disfavors SUDAH:3 (factor weight 0.34). Finally, the sex and age of the signer is not found to be significant in the choice of variant ($p > 0.1$ for all variants), but there is a significant correlation between region and the variants SUDAH:3 and SUDAH:4. The former is favoured by the Solo variety (0.71), and the latter by Makassar (also 0.71).

ii) Analysis 2

Again, a different variant was selected as the application value for each run. The dependent variables for the first run were **mouthings only** or **particle/clitic**; and for the second, **clitic** or **particle/mouthings only**. The results are shown in Table 5.7.

Table 5.7. Findings for Analysis 2: Grammatical variation in the domain of completion.

deviance	244.529				194.486			
DF	4				3			
grand mean	0.17				0.118			
application value	[clitic] vs. other				[mouthings alone] vs. other			
factors	L-O	%	N	CFW	L-O	%	N	CFW
sex	(p = 0.0609)				(p = 0.499)			
female	-0.409	11.4	149	0.601	0.242	14.8	149	0.56
male	0.409	22.9	140	0.399	-0.242	8.6	140	0.44
	<i>range: 30</i>				<i>range: 8</i>			
age	(p = 0.00843)				(p = 0.201)			
continuous (+1)	Log odds: -0.059				Log odds: 0.045			
region	(p = 0.0142)				(p = 0.287)			
Makassar	-0.633	9.7	145	0.347	0.243	13.8	145	0.56
Solo	0.633	24.3	144	0.653	-0.243	9.7	144	0.44
	<i>range: 31</i>				<i>range: 12</i>			
narrative or dialogue	(p = 0.552)				(p = 0.017)			
narrative	-0.102	14.7	143	0.475	-0.669	9.1	143	0.339
dialogue	0.102	19.2	146	0.525	0.669	14.4	146	0.661
	<i>range: 5</i>				<i>range: 32</i>			

The findings show that two social factors are significant in predicting the choice of clitic variants: older signers disfavour the use of these variants, while Solonese signers favour them (factor weight 0.65). Social factors are not significant in determining the incidence of completion through mouthings alone, but the text type is significant: dialogues favour the use of mouthings with a factor weight of 0.66.

5.4.4. Variation in the form of manual completion (Analysis 1)

The *Rbrul* analysis shows that the uneven distributions for SUDAH:3 and SUDAH:4, identified in 5.2.4, are statistically significant. The limitative SAJA (which is the grammaticalisation source of

SUDAH:3 (5.2.1(iv)) does not occur at all in the Makassar data, which means that this sign may have grammaticalised elsewhere and been introduced to Makassar through language contact. This could explain the uneven distribution of SUDAH:3 across varieties (see 5.6 for more discussion of this hypothesis). In comparison, HABIS:2 (the source of SUDAH:2) occurs in both varieties, and has a much more even distribution. SUDAH:4 is also more frequent in Makassar than in Solo. The reasons for this are not yet clear, but of the four main variants, this is the most infrequent, and hence a limited number of overall tokens may be the cause. Equally important, the distributions of SUDAH:1 and SUDAH:2 are confirmed as having no regional correlation, and the choice of variable is not predicted by the sex or the age of the signer. This suggests that the completive variants are stable, and that diachronic change is unlikely. The likely scenario is that some of the variants have specialised in terms of syntactic and functional distribution, as explained below.

The preference of pre-predicate contexts for SUDAH:1 can perhaps be accounted for in terms of its phonological weight, discussed in 5.2.1(iii). The relative ‘lightness’ of SUDAH:1 is felicitous for a pre-predicate sign, since it can be articulated in a way that does not impede the flow of the clause. For similar reasons, the ‘heavier’ weight of SUDAH:2 may explain its suitability as a discourse marker for narrative advancement at the end of the clause. Some functions have preferences and dispreferences for certain variables, as shown by the finding that SUDAH:2 is favoured for advancement, and SUDAH:3 is disfavoured. This mirrors the findings of Johnston and his colleagues, who report that ‘differences of form appear to be associated with the use of FINISH-related signs in different functional roles’ (Johnston et al. under review:33).

The finding that the previous realisation of the variable is significant for the choices of SUDAH:2, SUDAH:3 and SUDAH:4 warrants further analysis, and this is taken up in section 5.5. It is intriguing that the text type is found to be significant, with dialogue text favouring the choice of SUDAH:1, and narrative text disavouring this variant. It is not yet possible to speculate on the typical usage of completive markers in each type of text, and the only function to be included in quantitative analysis thus far is narrative advancement. More research is needed, perhaps using introspection or diagnostic tests to gain more insight into the functions expressed in each type.

5.4.5. Grammatical variation in the domain of completion (Analysis 2)

Although linguistic factors have not yet been included in the grammatical variation, the findings for social factors are highly significant, since they provide evidence of grammaticalisation. The fact that older signers disfavour the production of completive clitics, and hence that they are favoured by younger signers, indicates that completive markers are moving along the grammaticalisation cline. It is also revealing that the Solo variety favours completive clitics significantly more than does the Makassar variety, not least because the same combination of factors – age and region – are found to be significant for other types of language change too, such

as the development of negative suppletives (see 6.2.4). This clearly points to a trend whereby some changes are being led more by the Solo than the Makassar variety.

That age, sex and region are not significant for the selection of completion by mouthing alone suggests that this grammatical variant is relatively stable. In other words, it is not a change in progress – there is no indication that it is becoming less frequent over time – and the usage of mouthings for expressing completion is equal across both varieties. The finding that mouthings tend to be chosen according to text type shows that narrative contexts disfavour the production of completive mouthings and that, in such contexts, signers are more likely to express completion manually through clitics or particles. There is evidently something about the dialogue type that is conducive to the use of such mouthings, but again, it is not yet clear what this is.

The analysis of grammatical variation would now greatly benefit from further coding with a particular focus on linguistic factors, to see whether it is only social factors that account for the choice of grammatical variant, or whether linguistic factors also have a role in this.

5.4.6. Limitations

It is important to acknowledge the limitations of the analysis hitherto presented in section 5.4. By far the best way to annotate data is to work as a team, double-checking each other's decisions in order to strengthen the reliability of coding (see the discussion in Johnston, 2011). Such a *modus operandi* would have been particularly useful for agreeing the boundaries of clauses (3.5.2(ii)) and determining the presence of narrative advancement. This has not been possible because I know of no other people in the UK who are conversant in the sign language varieties in question. Therefore the coding is more subjective than is ideal.

Another limitation is introduced by the impenetrability of some contexts in terms of the functions that are being exhibited. This is particularly difficult for completion, where the multifunctionality of aspects is more normal than exceptional. I return to this issue later in section 5.5. Further, the overall number of tokens is relatively small – though this is perhaps to be expected for a variable at the morphosyntactic level (Cornips & Corrigan, 2005:100) – and the conclusions drawn in section 5.4 need to be tested on un-annotated sections of the CISLV in order to corroborate these findings.

One limitation *can* be resolved, at least to some extent: while the previous realisation of the variable is clearly important, is this because the signer continues to use the same variant (intra-individual persistence), or because the signer is copying the variant used by his or her interlocutor (intra-individual variation)? This uncertainty stems from the coding described in 5.4.2, where 'previous realisation of the variable' does not distinguish between the two. I turn to look at this issue further in section 5.5.

5.5. Intra-individual persistence and variation

On a perfunctory examination of the annotated sections of data, it is noticeable that several variants of the manual completive marker often occur in close proximity. For example, the 26 tokens of grammatical completion that occur during the course of one such section are shown in Figure 5.7. This can be explained with reference to the function that the completive exhibits; for example, it may occur several times in a stretch of data with a narrative advancement function, or where the discourse is contained within a particular temporal frame.

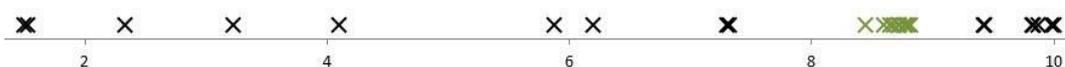


Figure 5.7. The distribution of instantiations of grammatical completion in a dialogue between S003 and S010 (the scale shows time in minutes). Instantiations in green are shown in Figure 5.10, below.

Does this ‘clustering’ of variants influence the choice of variant? Where does the realisation of the completive variable exhibit persistence, and where does it exhibit intra-individual variation? Persistence has recently caught the attention of corpus sociolinguists (e.g. Szmrecsanyi, 2005; Gries, 2005), and ‘the tendency for a recently-used linguistic option to be used again’ is noted by Tamminga (2012:2). Szmrecsanyi (2005:114) reports that, in his corpus data, future marker variants are ‘heavily clustered’ and contends that ‘successive variable sites in discourse possibly influence each other’.

In this investigation, ‘intra-individual persistence’ refers to the phenomenon whereby a language user *who is aware of other variants* – whether actively or passively – persists in using the same variant in successive variable sites to express the same variable. Intra-individual persistence is of necessity restricted to the same signer, although it need not occur in the same turn. Intra-individual variation occurs where a language user switches from one variant to another. Individuals do not, for the most part, use only one variant; most use several, as indicated by the distribution of variants per signer in Figure 5.8.

There are several possible motivations for intra-individual variation (see the discussion in (iii) below), and one of these is accommodation, where language users are sensitive to the variants used by their interlocutor and produce the same variants themselves (Meyerhoff, 2006:29). This is because, in general, synchronous behaviour is associated with higher ratings of relational liking, easier interaction, and feelings of rapport, attraction and contentment (Chartrand & Bargh, 1999). For example, Stamp uses a spot-the-difference task to elicit numerals and colour terms from BSL users working in pairs, and finds that accommodative behaviour is exhibited for 14% of tokens (2013:158).

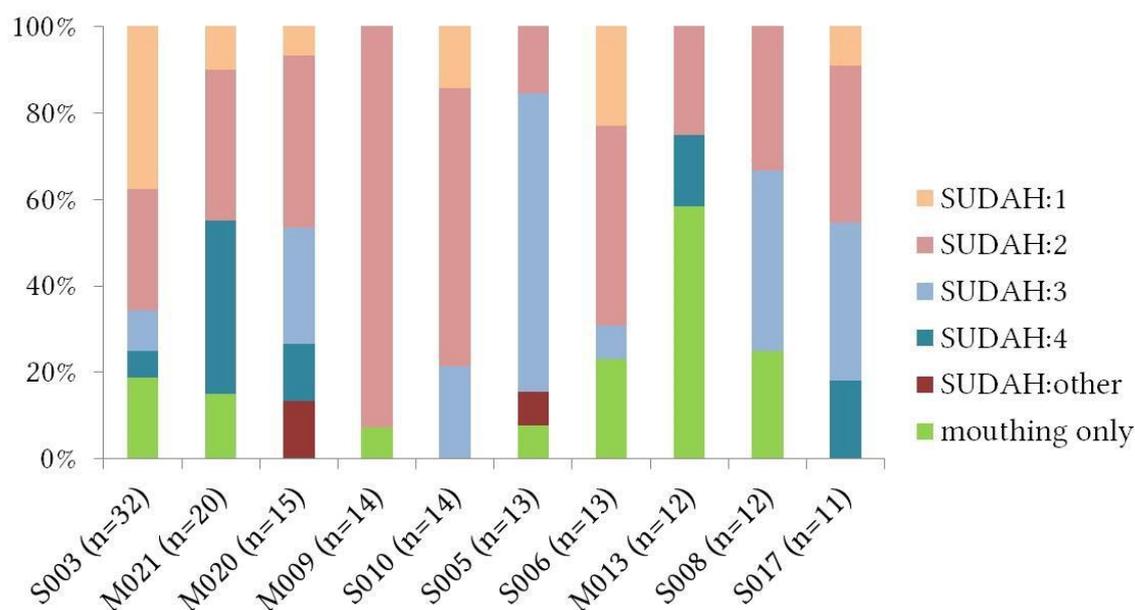


Figure 5.8. The proportion of variants used by the ten informants who express the completive aspect the most (n = number of tokens per informant).

In the remainder of section 5.5, I present the findings of further research into intra-individual persistence and variation. The method for this is explained in section 5.5.1, and after sharing some of the patterns that are to be found in the data (5.5.2), I present data-based hypotheses that may help to explain the prevalence of persistence and variation (5.5.3).

5.5.1. Data coding

In order to quantify intra-individual persistence and variation, I recoded the data as follows. First, variants were coded as either SUDAH:1, SUDAH:2, SUDAH:3, SUDAH:4 or SUDAH:other. The distinction between free and cliticised particle was not maintained for coding purposes here. Tokens where completion is expressed through mouthing alone (^{sudah}) are excluded because it is not yet clear whether these have the same distribution and function as manual expressions of completion. The first token for each stretch of annotated data was discounted because there were no previous tokens with which to compare this first token. Altogether, 87 tokens are excluded or discounted.

Where a signer produces the same variant as last time, this is coded (P) for persistence. For example, where an informant signs SUDAH:3 and the previous realisation of the variable by the same signer is also SUDAH:3, this has been coded (P), regardless of whether the previous token occurs in the same turn. Where a signer uses a different variant to last time, I compared the signer's current variant with the previous realisation of the variable by the signer's interlocutor(s). If the two variants are the same, I have coded the current variant (A), as it is potentially an example of accommodation. If the two variants are different, I have coded the current variant (O), to indicate that an 'other' variant is used. For example, where an informant uses SUDAH:m and

previously used SUDAH:2, the sign is coded (A) if the most recent variant produced by an interlocutor was also SUDAH:2, and (O) if the most recent variant produced by an interlocutor was, say, SUDAH:4.

5.5.2. Findings

There is plenty of qualitative evidence of both intra-individual persistence and variation in the data. Examples containing each phenomenon are shown schematically in Figure 5.9. For instance, signers S003 and M009 exhibit persistence in their repeated use of the same variant (SUDAH:3 and SUDAH:2, respectively). Signers M021 and S006 switch seven and five times, respectively, and hence exhibit intra-individual variation.

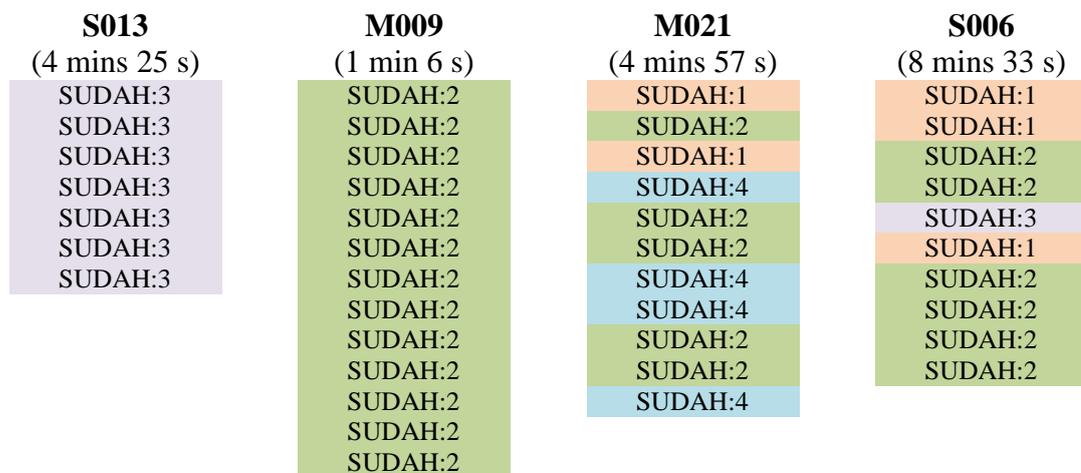


Figure 5.9. Examples of persistence and intra-individual variation in the grammatical expression of completion (*monologue* text types). Each row represents a single realisation of the variable, in the order that they appear in the data.

All of the examples in Figure 5.9 are largely monologue in nature, where a given signer holds the floor with few if any interruptions. When the text type is a dialogue, similar patterns of intra-individual persistence and variation occur (see Figure 5.10).

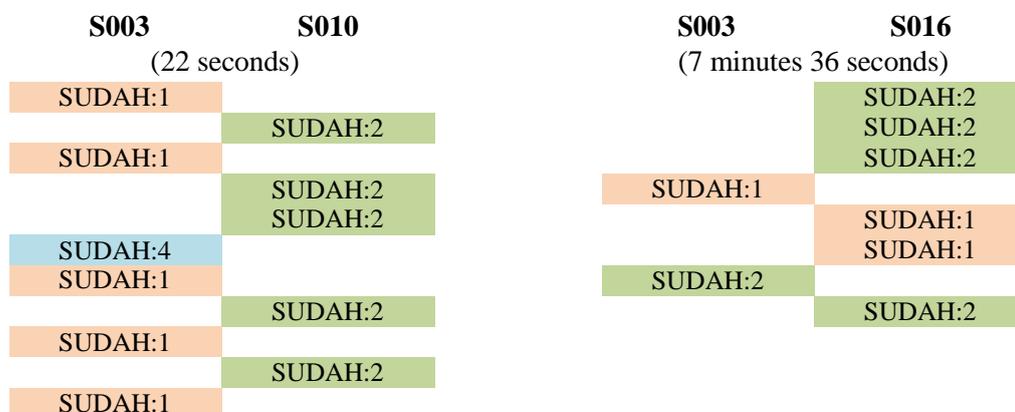


Figure 5.10. Examples of persistence and intra-individual variation in the grammatical expression of completion (*dialogue* text types). Note that the exchange between signers S003 and S010 is indicated on Figure 5.7 by green crosses.

The findings for intra-individual persistence are shown in Figure 5.11. Fifty-eight per cent of tokens exhibit intra-individual persistence (P). Of the 42% of tokens where signers switch to a different variant, 9% of tokens are the same as the previous realisation of the variable by an interlocutor (A), and the remaining 91% are different (O).

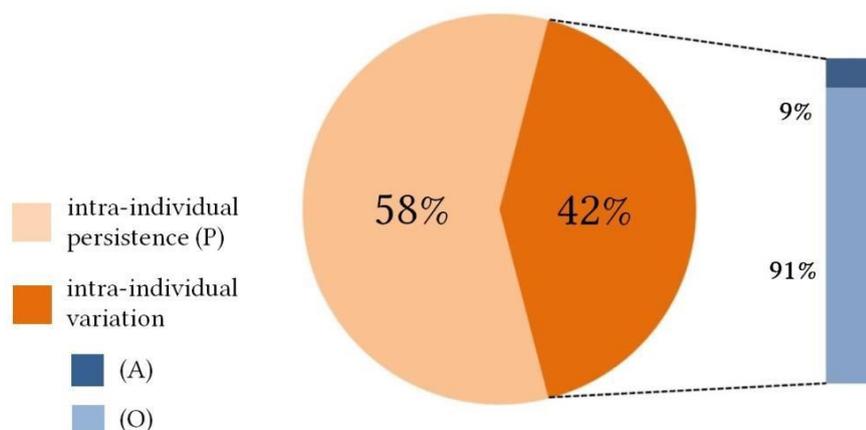


Figure 5.11. A pie chart showing the percentage of tokens where informants exhibit intra-individual persistence and variation ($n = 212$), and a bar with the proportion of instances of intra-individual variation where participants switch to the same variant used by an interlocutor.

Overall, it seems that informants are more likely to persist in using the same variant. In cases where switching does take place, informants are not particularly likely to switch to the variant that was last used by their interlocutor, and so in only a very few contexts (3.8%) is it possible that accommodation is a motive for switching to a different variant.

5.5.3. Discussion

Although it is illuminating to examine the data at the individual level, the findings presented in section 5.5 are of necessity limited by a number of unknown factors. For example, much is still unknown about the functional loads of the four main variants (5.3) and the assumption that every context in which a completive occurs is functionally equivalent (5.4.1) may not be justifiable. The relationships between informants who are filmed together have not been accounted for, nor has it been noted whether a token occurs as part of a narrative or a dialogue (5.4.2). Further, a switch that results in a variant that matches an interlocutor's variant – coded as a *potential* example of accommodation – does not constitute proof of accommodative intent, and it may be that the switch was motivated by other concerns.

In some cases, the reasons for the choice of a completive variant is unclear. In other cases, however, promising explanations do emerge, such as accommodation, or possible phonological influences from the location of the previous sign. For the remainder of this discussion, I present some hypotheses that may help to explain instances of intra-individual persistence and variation.

Although examples from the data are used to substantiate these hypotheses, I do not test them further here; they are offered with the aim of stimulating further research on this area.

Some of the possible explanations are cited by Szmrecsanyi (2005:144):

In naturalistic data, speakers' output may exhibit persistence effects for reasons of rhetoric, politeness, thematic coherence, to aid the process of gap filling in creating and processing elliptical utterances, to open up question-answer pairs ... because speakers feel like intentionally repeating items from previous discourse, or because they have been primed in preceding discourse.

The latter of these, priming, is the focus of a sizeable body of psycholinguistic research that suggests language users are 'hard-wired' to choose recently used or recently activated linguistic patterns (Szmrecsanyi, 2005:114). Using exemplar theory (Bybee, 2000; Pierrehumbert, 2001), it has been shown that those utterances encountered more recently are stored with higher activation levels compared to older utterances (Tagliamonte, 2012:94). These ideas can help to explain why informants are more likely to produce the same variant for 58% of tokens.

One of the possible data-based explanations for intra-individual persistence is narrative cohesion. Where the completive is used several times for the purpose of narrative advancement during a single stretch of data, informants often seem to select the same variant in order to emphasise the similar function of the completive, and unify the narrative. Such an example occurs in the Makassar data, where signer M009 produces 13 tokens of a variant during a 66-second stretch. In light of the findings in section 5.4 concerning the link between SUDAH:2 and narrative advancement function, it is not surprising that the variant in question is SUDAH:2. A short section from this example is shown in (63).¹³⁷

Several reasons for intra-individual variation can also be suggested based on examples from the data. The very low incidence of accommodation suggests that participants may only rarely make recourse to accommodative behaviour when expressing completion.¹³⁸ In general, the high rate of intra-individual variation may also confound the use of completive markers for accommodation and/or the identification of accommodation. However, there is at least one tantalising example in the data where intra-individual variation may be generated by accommodation. In the dialogue between signers S003 and S016, shown in Figure 5.10, signer S016 twice switches to a different variant in a way that aligns with the variant used by S003.

There are two further social reasons to suggest that accommodation may be at play in this situation. First, I had asked signer S003 for help in conducting the interview; he was associated

¹³⁷ A different kind of cohesion may also be shown in a slightly different way in the domain of syntax, where the phenomenon of doubling (5.2.1(i)) necessitates the repetition of a similar item in pre-predicate and post-predicate slots. In all instances in the data where the completive marker is doubled, the same variant is also doubled.

¹³⁸ There are too many unknown factors to draw conclusions about accommodation in these varieties more generally.

with my work, and took an ‘interviewer’ stance in this dialogue (3.3.2), asking questions and generating conversation. This behaviour – along with the impact of the video camera (3.3.2) – may have subsequently influenced the behaviour of signer S016. Secondly, as a mixed-sex pair, the gender difference may have further affected the variants used by S016 in favour of the variants produced by her interlocutor (although sex is not predictive of variation in the community as a whole).

Another phenomenon that sometimes occurs in the data is linguistic mirroring, similar to a form of back-channelling, where one informant copies the signing used by his or her interlocutor (see Stamp, 2013:155). This seems to be exploited by some signers as a means of establishing rapport, and leads to the production of the same variant across turns, as in (70).

(70) *Solo*

S011	<p>TIDAK-ADA LIHAT TIDAK-ADA SUDAH:2 DATANG NEG-EXIST see NEG-EXIST COMP come ‘She wasn’t there – you saw – she wasn’t there, then we came here.’</p>
S012	<p>TIDAK-ADA SUDAH:2 DATANG NEG-EXIST COMP come ‘...wasn’t there’ ‘...then we came here.’</p>

At the phonological level, it is sometimes possible to detect conditioning from the phonological environment of the previous sign. For example, the most common sign to precede the completive marker is the personal pronoun PT:PRO1. When articulated with a loose-5 hand, the handshape and orientation of PT:PRO1 matches those of SUDAH:1 and SUDAH:2, thus easing the transition from one sign to another (Figure 5.12). For spoken languages, it has been found that, when speakers are able to choose between variant forms, they choose the one that minimises the complexity of processing (Jaeger, 2008; Grondelaers et al., 2009). It is likely that a similar process may be taking place here, in the choice of lexical variant for marking completion (on the linguistic effects of articulatory ease, see Napoli, Sanders & Wright, 2014; see also the discussion of cliticisation in 3.5.2(i) and in Palfreyman, 2013:156).



Figure 5.12. Influence from the phonological environment of PT:PRO1.

Another example can be seen in (46). When considering the difference in lexical variants that follow KAWIN:1 at the ends of (46) and (47) – produced by the same signer within a single 60-second stretch of monologue – the handshape and orientation of the variants become significant. KAWIN:1 and SUDAH:3 both have the same handshape and orientation (Figure 5.13), and in (46) the completive immediately follows the sign KAWIN:1.



Figure 5.13. *The signs KAWIN:1 and SUDAH:3.*

A final hypothesis concerns the multifunctionality of these completive variants. For example, in (42) there is a switch from SUDAH:2 to SUDAH:4. The full translation for the second part of this example is: ‘I put my make-up on, and when that was done, I came to your house.’ However, the variant SUDAH:4 has the same form as a sign meaning ‘good’, and a better translation might be ‘well done’, or ‘done well’. In other words, it might be that signers are taking advantage of the conflation of meaning that certain signs exhibit, in this case switching to SUDAH:4 in order to add an extra layer of meaning – positive evaluation – to the aspect of completion (although SUDAH:4 also appears in psychologically negative contexts: see Palfreyman, 2013:168). More research is needed to see whether this is the case.

5.6. Chapter summary

Following a review of the literature on the perfect, perfective and completive aspect, the term ‘completive’ was tentatively chosen at the beginning of chapter 5 to describe four particles that seemed to express functions with a core completive meaning, on the basis that this would be evaluated in light of the data (5.1.2). The four particles – presented and analysed as lexical variants in 5.2.1 – exhibit a high degree of multifunctionality (Johnston, 2011), and operate at different levels of linguistic organisation (5.3). However, all of these functions are associated in some way with completion, and in light of this, ‘completive’ does seem to be a suitable label. The variable expression of completion permits for the identification of a lexical variable, and a grammatical variable, and these are discussed below.

The lexical variable comprises four completive variants. These are realised in both sign language varieties, and from a contrastive point of view the distribution of variants is also remarkably similar in each variety, especially for SUDAH:1 and SUDAH:2 (5.2.4). Statistically, region *is* a

significant factor in predicting the realisation of SUDAH:3 and SUDAH:4, with the former preferred by Solonese signers and the latter by Makassarrese signers. It is possible that this is due to the absence, in Makassar, of the limitative sign SAJA – the grammaticalisation source for SUDAH:3. If SUDAH:3 grammaticalised from SAJA in Central Java prior to its diffusion to other parts of the archipelago, this could explain why this variant is less well established, and hence less frequent, in Makassar. Five other factors are found to be significant: narrative or dialogue, syntactic position, narrative advancement, previous realisation of the variable, and clitic status.

The grammatical realisation of completion is the same in both varieties, with the following three grammatical variants: completive particles (5.2.1), completive clitics (5.2.2), and the expression of completion through mouthings alone (5.2.3). There are differences in the language from which mouthings are borrowed – the Solonese variety borrows from Javanese as well as Indonesian, whereas the Makassarrese variety borrows only from Indonesian. (The implications of this are discussed further in section 7.2.) The social factors of region and age are found to be statistically significant for the realisation of the grammatical completive variable. Older signers disfavour the use of completive clitics which, given the relationship between synchrony and diachrony, implies language change in progress (2.3.1). Specifically, this suggests that younger signers prefer more irregular forms of completion, and the implications of this are discussed further in the concluding chapter (see 7.3). Conversely, the expression of completion through mouthing alone appears to be relatively stable, and there are no indications that this is becoming less frequent.

While the grammatical variable can clearly be regarded as a sociolinguistic one (2.3.1), it is somewhat problematic to describe the lexical variable in the same way, since the two most frequently-occurring variables – SUDAH:1 and SUDAH:2 – are not predicted by any social factors (age, sex or region), although, as noted above, region is significant for SUDAH:3 and SUDAH:4. The preference of pre-predicate contexts for SUDAH:1 is clearly a linguistic constraint, but for the type of text – narrative or dialogue – and the narrative advancement function, it is not easy to distinguish between internal and external factors. Similarly, it is hypothesised in 5.5 that a range of linguistic and social factors can account for intra-individual persistence and variation. A summary of factors that favour the realisation of completive variables is shown in Table 5.8.

Table 5.8. *A summary of factors that favour the realisation of completive variables.*

<i>variable and application value</i>	factors found to be statistically significant in predicting the realisation of the variable
(5.4.4) Lexical variants	
<ul style="list-style-type: none"> • manual variant 	previous realisation of the variable, narrative advancement, region, <u>text type (narrative or dialogue), clitic status, syntactic position</u>
(5.4.5) Grammatical variants	
<ul style="list-style-type: none"> • cliticised particle • mouthing alone 	age > region text type

On examining the incidence of persistence and intra-individual variation more closely, it seems that informants are more likely to persist in using the same variant, although in 42% of cases individuals switch to another variant. Among the possible reasons for intra-individual persistence and variation, several motivating factors have been hypothesised, including priming effects, narrative cohesion, linguistic mirroring, and phonological assimilation (5.5.3). The analysis of persistence and variation at the individual level is a very new area of research, and standards have not yet emerged that enable coding for an individual’s persistent or variant realisation of variables (Lynn Clark, personal communication, 28 July 2014). Szmrecsanyi (2005:144) has noted that it is ‘not easily possible to disentangle the [various] motivations through corpus study in a waterproof fashion’. However, this is a good opportunity to form and test new methods, and it is often when engaging with such challenges that breakthroughs are made in our theoretical understanding.

Similarities in the expression of completion in the two varieties might be explained, in part, by reference to the historic social networks between sub-communities of sign language users discussed in chapter 4. Although no direct historical links have been found between the Solo and Makassar sub-communities, both have been a part of the sign community network since the 1960s. For Makassar, connections with Java began to appear in the early 1950s, when a teacher who had trained in Bandung began teaching in Makassar (4.2.2), and Solo sign community members were in attendance at meetings of Javanese sign communities in 1966 and 1981 (4.3.1). Further to this, deaf people from both Makassar and Solo attended the deaf schools in Wonosobo (4.2.1).

A key example of the way in which language contact may lead to the diffusion of completive variants has been observed in Makassar, where an informant (Iksan) twice uses the variant SUDAH:jkt, which is prominent in Jakarta (Figure 4.13). Iksan is the only informant in the CISLV to use this variant, but given its association with Jakarta, it is not difficult to find possible explanations for the use of SUDAH:jkt. As noted in 4.3.2, the seventh national congress of GerkatIn was held in Makassar in 2006, at which sub-communities from the Jakarta area were heavily represented, and Iksan has also travelled to Java and met with deaf Jakartan signers. It appears that this variant has now been added to the pool of completive variants that he uses, which also includes the four lexical variants identified in 5.2.1 – see Table 5.9.

Table 5.9.
*A type-token distribution
of completive marker
variants used by Iksan,
from Makassar.*

variant	n
SUDAH:1	1
SUDAH:2	6
SUDAH:3	4
SUDAH:4	2
SUDAH:jkt	2
total	15

However, there are other factors that may help to explain these similarities, besides the role of contact between the sub-communities. The similar functions that the completive exhibits in both

varieties may stem in part from the contact that both have with Indonesian. For example, the exhortative function noted in 5.3.3 has parallels with a similar one in some varieties of Malay, including the Ambonese variety (5.1.4(i)). The cultural significance of the completive, discussed in 5.1.3(ii), may also exert subtle parallels with regard to the use of the completive in each region.

The research presented in this chapter would benefit from separate quantitative analysis in each location – Solo and Makassar – to see whether the factors that influence the realisation of these variables are the same in each variety (see 2.3.2 on comparative sociolinguistics). It has not been possible to conduct a contrastive sociolinguistic study due to the relatively small number of tokens overall. Furthermore, before generalisations can be made about which changes are taking place to completive markers and why, it will be necessary to establish how completion is expressed in other varieties across the Indonesian archipelago (Palfreyman, 2013). Do they have a similar range of forms to the two varieties investigated here, or different forms entirely? For example, it has already been noted that the Jakarta variety has at least one other variant for marking completion.

Tests such as those used by Rathmann (2005:144) to distinguish between the perfect and perfective (5.1.5(ii)) are not easily compatible with a corpus-based approach, since only the forms that occur in the CISLV are available for analysis, and the range of examples therein is far from exhaustive. As Johnston (2014) points out, tests of the kind ‘cannot occur’ are therefore prohibited. Introspection is not available to me as an option to identify the precise nature of the functions expressed by completive variants because these Indonesian varieties are not my first or even second language. This will require further linguistic training of deaf Indonesian linguists who are thoroughly proficient in the varieties in question.

Once a better understanding is available concerning the precise functions that these markers exhibit, it will also be possible to compare the functional load of completives cross-linguistically. For example, it can be seen from Table 5.1 that the frequency of completive markers in the Kata Kolok corpus and the CISLV is much higher than for other sign languages. One of the possible explanations for this – apart from the notion of cultural significance mentioned earlier – is that these markers have a greater functional load in Indonesian varieties, whereas other sign languages have alternative forms for expressing these functions. To give an example, the narrative advancement function of completive markers described in section 5.3.2 is expressed at least some of the time in Auslan using a separate sign, THEN, shown in Figure 5.14.



Figure 5.14. *The Auslan sign THEN.*

THEN is ‘used to separate two stages in a story or narrative to clearly mark the transition from the one to the other’ as in the English *and then* or *after that happened*.¹³⁹ For Auslan, THEN would likely replace the function of marking narrative advancement which is assumed by completive variants in the CISLV, for example in (63).

Over time, it may be that the relations between forms and functions become more symmetrical. For example, SUDAH:2 currently appears to be the preferred variant for narrative advancement, although other variants can also express this function, but with the passing of time, it may be that SUDAH:2 becomes the default form for expressing this function. This kind of grammaticalisation, where paradigmatic variability becomes constrained grammatically, is referred to by Lehmann (1995) as obligatorification, where paradigmatic variability becomes constrained grammatically. Should new data be collected for these varieties in the future, the 2010/2011 data contained in the CISLV would enable a diachronic comparison of the distribution of completive marker functions. The obligatorification hypothesis would be an interesting one to pursue, and such a study would shed new light on the changes that are taking place in the expression of completion.

Having analysed the expression of completion from typological and Variationist Sociolinguistic perspectives, I turn in chapter 6 to the domain of negation. As with completion, several lexical and morphosyntactic variables are identified for expressing negation. Once these have been documented, the linguistic and social factors that determine the choice of variant are discussed. During the course of this analysis, several similarities between the two domains become apparent, and these are discussed further at the end of chapter 6.

¹³⁹ Definition provided in the online Auslan Sign Bank, www.auslan.org.au/dictionary/words/then-1.html (retrieved 12 June 2014).

CHAPTER 6

VARIATION IN THE GRAMMATICAL DOMAIN OF NEGATION.

Negation is a universal characteristic of language, and negative utterances constitute ‘a core feature of every system of human communication’ (Horn & Kato, 2000:1). For the grammatical domain of negation, lexical and morphosyntactic variation are abundant in the CISLV, and with this in mind, the choice of negation as the target domain for this chapter makes an auspicious match for the domain of completion (chapter 5) in terms of the associated linguistic and sociolinguistic implications. The line of enquiry pursued in chapter 6 also makes an important contribution to the literature, because the existence of *sociolinguistic* variation in the domain of negation has not been addressed directly in the literature on sign linguistics.

The aim of this chapter is to address, for the grammatical domain of negation, similar questions to those asked in chapter 5 for completion. Negative constructions found in the data from Solo and Makassar are documented to allow for the expression of negation in each variety to be contrasted (RQ1); and the linguistic and social factors that account for lexical and grammatical variation in this domain are analysed (RQ2). Unlike chapter 5, however, negative forms and their functions are not discussed in separate sections, since the relationships between negative forms and their functions, while still complex, are often somewhat restricted. Instead, the functions of each form are explained in turn. An analysis is provided of negative particles, clitics, suppletives, and non-manual markers. It is shown that, once again, there is an asymmetrical relationship between form and function, with several variant morphosyntactic forms available to negate the same predicate. Having identified paradigmatic and syntactic variables (6.2), I then explore the linguistic and sociolinguistic factors that may predict the realisation of these variables (6.3-6.7).

Before exploring relevant sections of the literature on negation, a brief note is necessary concerning what is meant by ‘paradigmatic’ and ‘syntagmatic’ variation. The notions of ‘paradigmatic’ and ‘syntagmatic’ organisation derive from the semiotic terminology put forward by Saussure ([1915] 1966) and are refined further in their linguistic application by Jakobson (1966). Syntagmatic phenomena are horizontal and linear, and concern the order and combination of signifiers; paradigmatic phenomena are vertical and non-linear, taking place within a designated syntactic slot, and concern the range of items that may occupy that slot. For illustrative purposes, Figure 6.1 shows the paradigmatic and syntagmatic dimensions for an English sentence. The notion of paradigmatic variants is essential to the analysis of variation of negation presented in section 6.5 and syntagmatic variation is discussed briefly in section 6.6.

← syntagmatic →

↑ paradigmatic ↓	the	woman	is	sitting	by	the	wall
	that	teacher	has been	drinking	near	a	table
	the	boy	was	writing	at	this	desk
	a	postman	will be	knocking	on	that	door

Figure 6.1. Paradigmatic and syntagmatic dimensions for an English sentence.

6.1. Negation and negative constructions

6.1.1. Grammatical and psychological negation

Dixon (2012) notes that negation is difficult to define, or even explain. One of the ways in which linguists have sought to deal with this complexity is by making a distinction between grammatical and psychological, or semantic negation (Zeshan, 2004). The term grammatical negation is used to refer to grammatical elements that reverse the polarity of a clause from affirmative to negative (Nørgaard, Busse & Montoro, 2010:128). Psychological negation is typified by lexical (and, for sign languages, perhaps non-manual) elements that express or reinforce negative concepts, such as ‘fail’, ‘ill’ or ‘weak’ (Apostel, 1972; Oaksford, 2010).¹⁴⁰ The corollary of this is that sentences may be psychologically negative but grammatically positive (for example, ‘I am ill.’).

However, the boundary between grammatical and psychological negation is far from clear in all cases. This can be illustrated with respect to the Indonesian word *kurang*, which expresses a lack or deficiency of something. *Kurang* is always psychologically negative, and in (71) it functions as a predicative adjective, comparing actual experience with hope or expectation, and specifying that the amount of sleep obtained was not enough.

- (71) *Bayi saya kok waktu tidurnya kurang?* Indonesian
 baby PRO1 how.come time sleep-PRO3 not.enough (my example)
 ‘Why is my baby not sleeping enough?’

However, *kurang* may also behave as a clause negator with some predicates, as an alternative to *tidak* (Sneddon, 2010). In (72), *kurang* modifies the modal verb *bisa* (‘can’), expressing degree and referring to expectation (the ability of society to distinguish child drug users is not as it could be, or perhaps should be).

- (72) *Masyarakat kurang bisa bedakan anak korban narkoba.* Indonesian
 society NEG can distinguish child victim drug (my example)
 ‘Society is not able to distinguish child drug users.’

¹⁴⁰ The question of whether negative facial expressions are part of the grammar is discussed by Zeshan (2004:14) and Pfau (in press). See also Yang & Fischer (2002) on ZGS and Arrotéia (2005) on LIBRAS.

The ability referred to in (72) is treated as gradual rather than binary. As a clause negator, *kurang* is relative, rather than absolute, and semantically it is therefore softer than the more categorical *tidak* (see 6.2). This is an important consideration because grammatical negation is not relative in this sense.

The existence of words such as *kurang* shows how the boundary between ‘psychological’ and ‘grammatical’ negative can be far from clear. Nevertheless, in some cases morphosyntactic tests can be used to determine whether a word or sign is a grammatical negative. For example, suppose it is not clear on first consideration whether a sign, X, is a psychological or grammatical negative. If a clause that includes X in conjunction with another negator has positive polarity, it is likely that X is a psychologically negative sign, rather than a grammatical negator. There are plenty of psychological negatives in the data – such as JELEK (‘bad’), RUGI (‘lose out, become penniless’), RUSAK (‘broken’), PELIT (‘stingy’) and MALAS (‘lazy’) – but this chapter focuses on grammatical, rather than psychological negation. However, in section 6.2.4 morphosyntactic and semantic tests are used to justify the analysis of a set of signs as negative suppletives, and hence part of the grammatical system, as opposed to psychologically negative lexical items.

6.1.2. Motivation for targeting the grammatical domain of negation

The domain of negation has been selected for investigation here for similar reasons to completion (5.1.3). First, negative constructions occur frequently in the data, with 804 grammatical expressions of negation occurring in 180 minutes of spontaneous data, or around 4.5 constructions per minute on average. It is not yet possible to compare the frequency of instantiations of grammatical negation across corpora due to the lack of studies for other sign languages.

Secondly, even at the transcription stage it was clear that clauses were being negated variably. In particular, it was apparent in some cases that one and the same predicate could be negated both with and without the use of negative particles. Furthermore, cross-linguistic differences were also apparent, and certainly compared to several European sign languages, such as FinSL, the limited use of headshake was striking. For these reasons, negation was a promising grammatical domain for further investigation.

6.1.3. Negation in spoken languages

i) Strategies used across spoken languages

A wide range of negation strategies has been reported for spoken languages. Many languages use negative particles, including Indonesian, which has at least four: *tidak*, *bukan*, *belum* and *jangan* (Sneddon, 2010). The first of these, *tidak*, is the most common, and may negate verbs (73a), prepositional phrases (73b) and adjectives (74) (ibid.).

- (73a) *Dia tidak datang.* (73b) *Dia tidak disini.* Indonesian
 PRO3 NEG come PRO3 NEG LOC (my examples)
 ‘S/he did not come.’ ‘S/he is not here.’
- (74) *Lalu lintas Jakarta tidak ramai saat Lebaran kan?* Indonesian
 traffic Jakarta NEG busy time Lebaran INT(my example)
 ‘The traffic in Jakarta is not busy during Lebaran, is it?’

Bukan negates nouns and nominal predicates, as in (75). It can replace *tidak* to add emphasis, with a contrastive function (76), and when placed at the end of a declarative sentence, it forms a tag question (Kader, 1981:281), although it is often reduced to ‘kan’, as in (74).¹⁴¹ *Belum* is a negative completive meaning ‘not yet’, while *jangan* is a negative imperative.

- (75) *Saya bukan mahasiswa* Indonesian
 PRO1 NEG student (my example)
 ‘I am not a student.’
- (76) *Dia bukan kaya melainkan boros saja* Indonesian
 PRO3 NEG rich but.rather extravagant LIMITATIVE¹⁴² (my example)
 ‘He is not rich, just extravagant.’

In spoken languages, negatives are predominantly pre-verbal (Dahl 1979:93) and in the examples provided by Sneddon (2010), all four negative words appear in a pre-predicate slot. Besides Malay, other Austronesian and central/eastern Indonesian languages also tend to use pre-verbal negators, but negation in Papuan languages is generally post-verbal or clause final (Klamer, 2002:375). There are also Austronesian languages that have clause final negation, particularly in Maluku and Papua. Examples of such languages include *Taba* (77), (79b) and *Buru* (78).

- (77) *Nik calana kuda-k asfal te.* *Taba*
 1SG.POSS trousers be.black-APPL bitumen NEG (Bowden, 1998:400)
 ‘My trousers are not blackened with bitumen.’
- (78) *Sira hapu lafa-t la yako langina moo.* *Buru*
 3PL tie food-NOM for 1S.BEN earlier NEG (Grimes, 1991:232)
 ‘They didn’t tie up trail food for me earlier.’

The main morphological process for expressing negation in spoken languages is affixation (see for example Hulse, 2010), and affixes occur across word classes (Zeshan, 2004). While negative particles, negative auxiliaries and affixes are common for spoken languages (Dahl, 1979; Bernini & Ramat, 1996) negative intonation is extremely rare: this strategy has been reported for only a few spoken languages, such as the Kuot language of New Ireland, Papua New Guinea, where negators are combined with a specific negative contour (Lindstrom, 2002). For sign languages,

¹⁴¹ For further details of tag questions, see Kay (2004) and Tottie & Hoffmann (2006).

¹⁴² A definition of ‘limitative’ is provided in 5.2.1(iv).

non-manuals are equivalent to intonation, since both are suprasegmental and fulfil a similar range of functions (Sandler, 1999). Many examples of non-manual negation can be found in sign languages (see 6.1.4).

Miestamo (2013) notes a distinction in spoken languages between symmetric and asymmetric negation. For symmetric negation, the structure of the negative clause is the same as that of the positive clause, with the exception of the added negative marker(s). For example, to reverse the polarity of example (79a), one would simply need to add the negative *te* as in (79b). For asymmetric negation, the addition of negative marker to (80a) necessitates some other change to the structure of the clause. In (80b) it is the negative verb *e-* that is marked for person and number, and the lexical verb – which was inflected for person and number in (80a) – is now uninflected (*tule*).

(79a)	<i>n=han</i> 3SG-go	<i>ak-la</i> all-sea	(79b)	<i>n=han</i> 3SG-go	<i>ak-la</i> all-sea	<i>te</i> NEG	<i>Taba</i> (Bowden, 2001:335)
	‘She’s going seawards.’						
(80a)	<i>tule-n</i> come-1SG		(80b)	<i>e-n</i> NEG-1SG	<i>tule</i> come.PRESENT		<i>Finnish</i> (Miestamo, 2013)
	‘I am coming.’			‘I am not coming.’			

I use the notion of symmetric and asymmetric negation in section 6.2 to establish a distinction between two paradigmatic variants of negation that both use negative particles, albeit in different ways.

ii) (Socio)linguistic variation in spoken languages

The grammatical domain of negation has attracted a considerable number of sociolinguistic studies, especially in Variationist Sociolinguistics (2.3.1). One of the first studies in this area is Labov (1972), which focuses on negative concord in Philadelphia. For example, (81) contains four negative elements, but its meaning is regarded as having one instance of negation (Labov, 1972:773). The findings of this study show sharp stratification between working-class and middle-class subgroups, which respectively have relatively high and low prevalence of negative concord.

(81)	<i>It ain't no cat can't get in no coop.</i> ‘There isn't any cat that can get into any [pigeon] coop.’	<i>Black English vernacular</i> (Labov, 1972:773)
------	--	--

Labov finds that, while negative concord is variable, its frequency across the adult language community is not changing, which makes it a stable variable. In other words, negative concord has shown the same pattern across centuries (Labov 2001:85-92).

In Britain, the negative constructions that appear in northern British varieties often differ from Standard English (Tagliamonte, 2006:62). In her study of Buckie Scots, Smith (2000) examines the variable use of periphrastic *do*, which may (82) or may not (83) be expressed by speakers.

(82) *I dinna mine fa taen it.* *Buckie Scots*
 I don't remember who took it. (Smith, 2000:232)

(83) *I na mine fa come in.* *Buckie Scots*
 I don't remember who came in. (Smith, 2000:232)

Using multivariate analysis (3.6), Smith (2000) shows that grammatical person is highly significant in the expression of this variable: third person contexts never (or rarely) feature *do* absence, and hence are (near) categorical contexts. First and second person contexts are variable, and exhibit conditioning by frequency, lexical and processing constraints.

Variation in French has also received considerable attention in the literature (Dewaele, 2004; Mougeon et al., 2004), with speakers often dropping the negative particle *ne*, as in (84), where *ne* is dropped in the negation of *j'aime* ('I like').

(84) *...j'aime pas ça c'est tellement euh artificiel.* *French*
 'I don't like that, it's so artificial.' (Dewaele, 2004:440)

Variation in the expression of negation in French is in fact linked to diachronic change, which was recorded by Jespersen (1917). Pfau and Steinbach (2013) make a case for a similar cyclical change across sign languages, and this is discussed further in section 6.8.

Across varieties of Malay, negative particles also differ from Standard Indonesian, and are expressed through a range of informal negative particles which all correspond to the standard *tidak* (Ewing, 2005:240). In Sumatra, for example, *ndak* is used in Minangkabau; *ndak*, *nggak* and *tak* in Riau Indonesian; *dak* and *tak* in Siak Malay (Gil, unpublished:20). In Jakarta, the particles *nggak* and *kagak* are used. At the other end of the archipelago, Kupang Malay (see the map in Appendix 4) has the negative particles *sonde*, *son* and *tar* (Jacob & Grimes, 2006). The profusion of variant forms across Malay has striking parallels with sign language varieties; a point to which I return in the concluding chapter (section 7.2).

6.1.4. Negation in sign languages

Several important distinctions have been made in the sign language literature between different types of negation. Here I discuss distinctions that are relevant to the analysis of negative constructions in the CISLV: manual and non-manual negation (i), regular and irregular negation (ii) and basic vs special negation (iii).

i) Manual and non-manual negation

There are important ways in which sign languages differ from spoken languages in the way that they express negation. Perhaps the most striking difference is that many sign languages can negate clauses non-manually, using parts of the body other than the hands. The ensuing possibility of negating a clause simultaneously by both segmental and suprasegmental means sets sign languages apart from spoken languages. While the most common non-manual marker is a headshake, other forms include a backward head tilt (GSL, TĪD, LIU), and puffed cheeks (TĪD) (Zeshan, 2004).

The majority of sign languages documented thus far express negation manually (85) and non-manually (86), and many sign languages allow a combination of both, with non-manual negation reinforcing manual negation, or vice-versa (87, 88, 89).

- (85) TOMORROW RAIN BECAUSE FLOWER SEE NO GO *JSL*
(Morgan, 2006:116)
‘Since it’s going to rain tomorrow, I’m not going flower-viewing.’
- (86) KNOW FACE INDEX₃ WHERE REMEMBER *GSL*
(Antzakas, 2006:267)
‘I know his face, but I don’t remember where from.’
- (87) WE-TWO CHILDREN NOT *NTS*
(Vogt-Svendsen, 2000,
cited in Zeshan, 2004:41)
‘We do not have any children.’
- (88) INDEX₁ SPEAK KNOW=NOT *TĪD*
(Zeshan, 2004:25)
‘I can’t speak.’
- (89) HOUSE NOT FAR *HKSL*
(Zeshan, 2004:19)
‘The house isn’t far.’

Although negative markers can have the same form in different sign languages, the status of these markers can be very different (Zeshan, 2004:17). With the benefit of comparison afforded by a cross-linguistic approach, it is possible to ascertain whether a sign language has a manual-dominant or non-manual dominant negation system. On the basis of a survey of 38 sign languages, Zeshan (2004) identifies characteristics of manual and non-manual dominant systems (Table 6.1, overleaf).

Two examples from Japanese Sign Language are also shown overleaf: (90) and (91). The latter is ungrammatical in JSL, and in light of this, the burden of negation in (90) clearly falls upon manual markers, with non-manual markers apparently adding force – perhaps optional, or conventional, but without the same clear role in the grammar as manual markers.

Table 6.1. Characteristics of manual dominant and non-manual dominant systems of negation (Zeshan, 2004:49).

characteristics of non-manual dominant systems of negation	characteristics of manual dominant systems of negation
non-manual negation is obligatory	non-manual negation is not obligatory
clause can be negated non-manually only, manual basic clause negator is optional	clause cannot be negated non-manually only, manual negator is required
choice of non-manual marking does not depend on manual signs	choice of non-manual marking depends on choice of manual clause negator (if there is more than one non-manual configuration)
non-manual negation spreads freely over the clause	scope of non-manual negation is over the manual negator only or is closely tied to the manual negator

On the basis of the characteristics in Table 6.1, JSL is classified as having a manual dominant negation system because, although manual and non-manual markers may combine (90), it is not possible to negate a clause through non-manual means alone (91).

(90) *JSL*
(Zeshan, 2006a:45)

$\frac{hs}{\text{NEG}}$
 WORK FINISH
 ‘I haven’t finished work.’

(91) *JSL*
(Zeshan, 2006a:45)

$\frac{hs}{\text{FINISH}}$
 * WORK
 ‘The work isn’t finished.’

Several sign languages have been identified as having manual dominant negative systems, including LIU (Hendriks, 2007), LIS (Geraci 2005), HKSL (Tang 2006), Kata Kolok (Marsaja 2008), TID (Zeshan, 2006b) and JSL (Morgan 2006). Urban varieties in Indonesia also prefer to negate by manual means, and I use a similar analysis to that used above for JSL to draw conclusions on the role of non-manual markers in section 6.2.5.

ii) Regular and irregular negation

Negative constructions may be classified according to whether they are regular or irregular. Regular negative constructions in sign languages use free negative particles or non-manual negation that may be applied across the word class without restrictions (Zeshan, 2004:30). As with completion, the majority of sign languages documented so far convey negation manually using particles (*ibid.*).

For irregular negation, the negative is ‘part of the predicate in one way or another’ (Zeshan, 2004:41). They are referred to as ‘irregular’ because the process that derives negatives from their positive counterparts is restricted to particular lexical items, and is not available across the whole word class. Irregular negatives include negative suppletion, which is discussed further in 6.2.5, and morphological negation, which may be expressed simultaneously or sequentially. Examples

of simultaneous morphological negation can be found in DGS, where a predicate may be negated by means of a diagonal inward-outward movement, and HKSL, which uses handshape substitution (ibid.). Negative clitics and affixes are sequential means of negating a predicate morphologically (see 3.5.2(i)). While negative affixes do not occur in the CISLV, negative clitics do, as discussed in 6.2.2. Types of irregular negation are shown schematically in Figure 6.2.

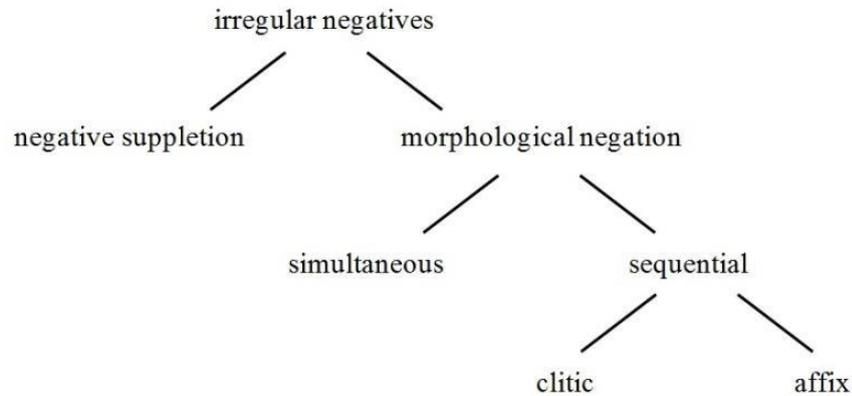


Figure 6.2. A taxonomy of irregular negatives (from Zeshan, 2004:42).

iii) Basic and special negation

A further useful distinction can be made between ‘basic clause negators’, which express only negative polarity and do not have another meaning, and other or ‘special’ clause negators. The notion of basic clause negation can therefore be regarded as ‘the most neutral way of negating a clause’ (Zeshan, 2004:30), and the typological survey that Zeshan (2004) conducted reveals that many sign languages have a commonly occurring negative particle that functions as a basic clause negator.

Special clause negators convey a more specific function or meaning *in addition to* negation. This includes signs that convey both negative polarity and an imperative, emphatic, existential modal, or aspectual meaning, and a selection of such signs from different sign languages is shown in Figure 6.3.

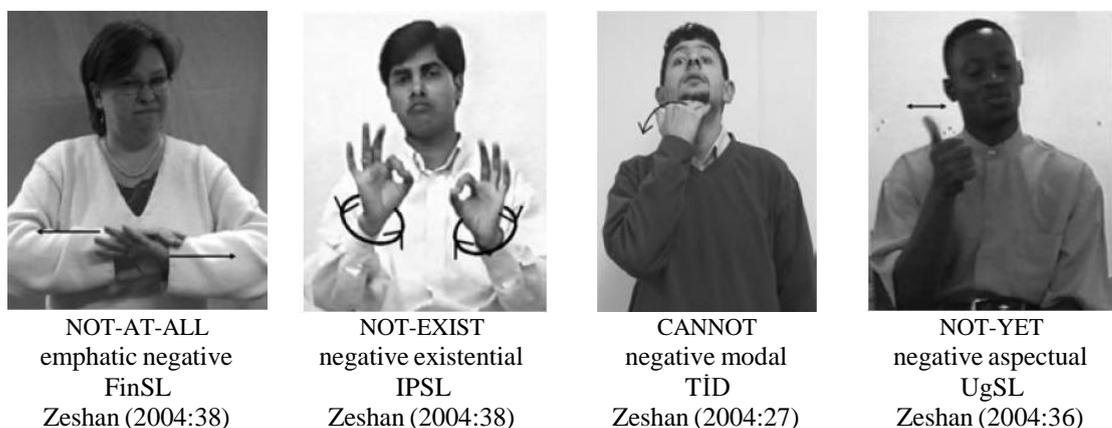


Figure 6.3. A selection of special negators with various functions in different sign languages.

Importantly, special clause negators do not, in all cases, have just one function. Some may also be used as basic clause negators without exhibiting their ‘special’ function, as is the case with PA in UgSL, which has a ‘special’ function of expressing negative existence, but may also function as a basic clause negator (see 6.1.5). The notion that a single form may have a core function and a sub-function is important because this is a potential source of variation, and I discuss this further in 6.1.5. Some forms in the CISLV have more than one function, and the notion of core function, or sub-function, is used several times in my analysis of negative particles (6.2.1).

6.1.5. (Socio)linguistic variation in sign languages

In the literature on negative constructions in sign languages, a certain type of variable is sometimes apparent whereby one and the same predicate may be negated using different lexical or morphosyntactic forms. In these cases, what appear to be variants are described, sometimes alongside possible linguistic constraints that may fully or partly determine the distribution of these ‘variants’, but the social factors that may influence the selection of variants are not considered. For instance, several of the contributions in Zeshan (2006a) describe the existence of different particles, and imply that more than one particle may be used in the same slot to perform the same negative function, but do not look further at which linguistic and social factors affect the choice of variant.

From the information presented by Zeshan (2006b:163), it can be inferred that KNOW in TĪD may be negated in the following ways, all of which mean ‘don’t know’:

- | | | |
|---|---|---|
| <p>(92) $\frac{\text{neg-tilt}}{\text{KNOW NOT}}$</p> | <p>(93) $\frac{\text{neg-tilt}}{\text{KNOW=NOT}}$</p> | <p>(94) $\frac{\text{neg-tilt}}{\text{KNOW=PALM-UP}}$</p> |
|---|---|---|

Three parameters of variation are demonstrated here: the first is lexical, in that the basic clause negator (NOT) may be substituted for another negative particle (PALM-UP), with no apparent overall change in meaning from (93) to (94). The second type of variation operates along the cliticisation cline, whereby the negative particle may be free (92), or cliticised (93), or (presumably) lie somewhere between these two points. Finally, there is variation in the scope of the non-manual marking; in (92) this marking accompanies only the negative particle, whereas in (93) and (94) it is co-extensive with the host-clitic combination. However, there are linguistic constraints at play, since where a host-clitic combination is used, the non-manual marking must occur with the whole combination.

Three utterances from IPSL cited in Zeshan (2000a:114) feature the same predicate (SAMAJH, ‘understand’), and this highlights manual and non-manual negation as potential variants, since negation is expressed with (95, 96) and without (97) non-manual marking. Again, there is variation in the scope of the non-manual headshake (95, 96).

- (95) **PA:KISTA:N** **INTIZA:M** hs **SAMAJH** *IPSL*
 Pakistan organise understand (Zeshan, 2000a:114)
 ‘The Pakistanis don’t know how to organise.’

- (96) **DEAF** **VAH** **SAMAJH** **NAHI:N'** hs *IPSL*
 deaf IX_{left} understand NEG (Zeshan, 2000a:114)
 ‘(Only) the deaf people don’t know about it.’

- (97) **MAIN'** **SAMAJH** **NAHI:N'** *IPSL*
 PRO1 understand NEG (Zeshan, 2000a:114)
 ‘I don’t understand that.’

As mentioned briefly in 6.1.4(iii), variable contexts also emerge by dint of the range of functions exhibited by negative particles. Although negative particles often have a main, core function, it is not uncommon for these particles to assume other sub-functions in addition. UgSL is a good example of this, with three negative particles – BADO, PA and NONE – each of which has a core function (Lutalo-Kiingi 2014:274): BADO is a negative completive, NONE is a negative existential/possessive, and PA is a basic clause negator (98). In practice, however, there are overlaps between these functions. For example, PA has the sub-function of expressing negative existence/possession (99), and may also appear in negative aspectual contexts (100).

- (98) **BUT** **PRO1** **LEARN** **PA** *UgSL*
 but PRO1 learn NEG (Lutalo-Kiingi, 2014:276)
 ‘But I do not learn.’

- (99) **MONEY** **PA** *UgSL*
 money NEG (Lutalo-Kiingi, 2014:277)
 ‘I don’t have any money.’

- (100) **BUS** **ARRIVE** fi **PA** *UgSL*
 bus arrive NEG (Lutalo-Kiingi 2014:281)
 ‘The bus has not arrived yet.’

A similar phenomenon is reported for Jordanian Sign Language (LIU), where the particle MA-FI – which exhibits the main function of negative existence/possession – may also function as a basic clause negator. In (101), the two examples cited by Hendriks (2007:108) are semantically equivalent:

- (101) **YESTERDAY** **EVENING** **PARTY** **COME** **NEG** *LIU*
YESTERDAY **EVENING** **PARTY** **COME** **MA-FI** (Hendriks, 2007:108)
 ‘[I] didn’t come to the party yesterday evening.’

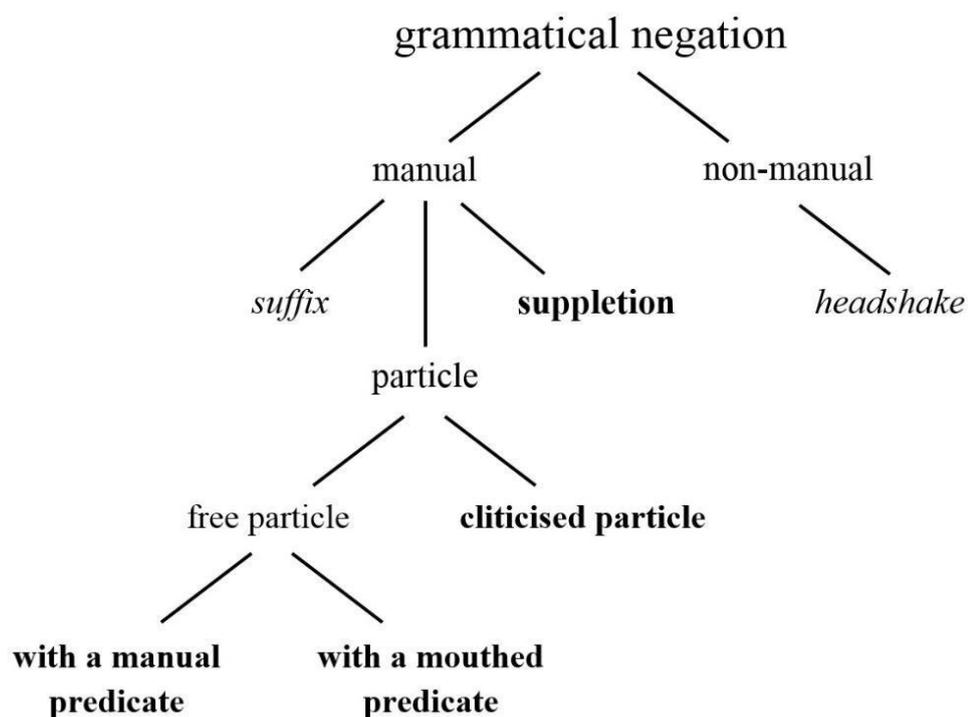


Figure 6.4. The expression of negation in Indonesian sign language varieties.

6.2.1. Negative particles

i) TIDAK

TIDAK is articulated with a flat handshape in the neutral sign space (Figure 6.5) and is by far the most frequent negative particle in the CISLV (see section (iv) below). This sign exhibits two of the four formational characteristics that occur frequently for clause negators across sign languages, regardless of geographical or genetic association: repeated side-to-side movement and an orientation where the palm faces outwards (Zeshan, 2004:35).



Figure 6.5. The sign TIDAK.

While there has been academic research on negative co-speech gestures in English and other languages – Harrison (2009) for example – I do not know of any systematic research on co-speech gestures in Indonesia, with the exception of studies on deictic gestures that relate to geocentric space in Bali (Wassmann & Dasen, 1998; Dasen & Mishra, 2010). However, while living in Java I observed the gestural use of the TIDAK form by hearing people (103), where it often accompanies and reinforces spoken negative particles such as *tidak* and *bukan* in Indonesian (6.1.3(i)).¹⁴³ It is common for sign languages to have negative forms that have their origin in the co-speech gestures of spoken language communities (Zeshan, 2004:36), and the prevalence of this negative gesture in many different parts of the world explains the frequency of this form cross-linguistically as a negative particle.

(103)	speech:	<i>saya</i> PRO1	<i>tidak</i> NEG	<i>bisa</i> can	<i>Indonesian with co-speech gesture (my example)</i>
	gesture:	TIDAK-----			
		‘I cannot.’			

TIDAK is usually accompanied by a mouthing. Sometimes this is redundant, but in other cases it specifies sub-functions (see below) and additional meanings (6.2.3). One notable difference between the grammar of these sign language varieties and Malay is that, while the latter often makes a distinction between the negation of nominals and non-nominals through the use of *tidak* and *bukan* (6.1.3(i)), the former uses the same manual form for both. Some signers do use *tidak* and *bukan* to make a similar distinction – see (107) and (114) for examples – but this seems to depend on factors such as a signer’s competence in Indonesian and the signer’s own style. There are also instances in the data where signers use *tidak* in contexts where, in Standard Indonesian, *bukan* would commonly occur.

TIDAK is the basic clause negator for both the Makassar and Solo varieties (6.3.3); this is its core function, and the first response of my research consultants when asked to reverse the polarity of a basic positive clause. When it functions as a basic clause negator, the addition of TIDAK reverses the polarity of the clause with which it occurs. In (104) and (105), TIDAK occurs with predicates meaning ‘new’ and ‘want’ to reverse the polarity (‘not new’, ‘don’t want’), while (106) presents an example of doubling (see below), as TIDAK reverses the polarity of a sign meaning ‘to service (a motorbike)’. These are examples of symmetric negation (6.1.3(i)), since the structure of the negative clause is the same as that of the positive clause, with the exception of the added negative marker.

¹⁴³ I was in a good position to observe the use of this gesture, since hearing Indonesian speakers who did not sign – but who knew that I am deaf – responded by using co-speech gestures frequently.

(104) Solo

<u>baru</u>	<u>hs</u>		<u>bekas</u>
BARU	TIDAK		BEKAS
new	NEG		second-hand

‘It isn’t new, it’s second-hand.’

(105) Makassar

	<u>tidak</u>	<u>hs</u>
PT:PRO1	MAU	TIDAK
PRO1	want	NEG

‘I don’t want to.’

(106) Solo

<u>hs</u>	<u>servis</u>	<u>hs</u>
<u>bukan</u>	SERVIS	<u>bukan</u>
TIDAK	TIDAK	TIDAK
NEG	service	NEG

‘It [the motorbike] wasn’t being serviced.’

TIDAK does not only negate lexical predicates: there are cases where TIDAK negates functional predicates that express existence (107), possession (108) and ability (109) (although other grammatical variants for expressing these functions simultaneously tend to be more frequent – see section 6.3). The order in which the negative and the predicate are expressed in (107)-(109), with a negative particle in a pre-predicate slot, is more typical of Standard Indonesian, and it is contended that these structures may be an effect of language contact (see further discussion in section 6.6).

(107) Solo

<u>tidak</u>	<u>ada</u>
TIDAK	ADA/PUNYA
NEG	EXIST/POSS

‘There isn’t anyone [who can be secretary].’

(108) Solo

TIDAK	ADA/PUNYA	3G
NEG	EXIST/POSS	3G-phone

‘He doesn’t have a 3G phone.’

(109) Makassar

PT:PRO1	TIDAK	BISA
PRO1	NEG	can

‘I can’t do it.’

The particle TIDAK appears to be highly versatile; as the basic clause negator, it is non-specific, and can combine with other meaningful elements such as mouthings in the joint expression of more specific negation. For example, it can operate as a negative imperative (110), a negative existential/possessive (111) and a negative completive (112).

(110) Makassar

<u>slouch</u>	<u>imp</u>
G:MEMARUT-KEJU-----	TIDAK
grate-cheese	NEG

‘Don’t slouch when you are grating cheese!’

(111) **KERJA** tidak-ada
TIDAK
 work NEG
 ‘If I don’t have work...’

Makassar

(112) belum belum
PT:PRO1 LIHAT=TIDAK
 PRO1 see= NEG
 ‘I haven’t yet seen.’

Solo

The accompanying facial expressions for negative imperative signs (110) are shown in Figure 6.6 alongside other expressions that occur in this chapter.

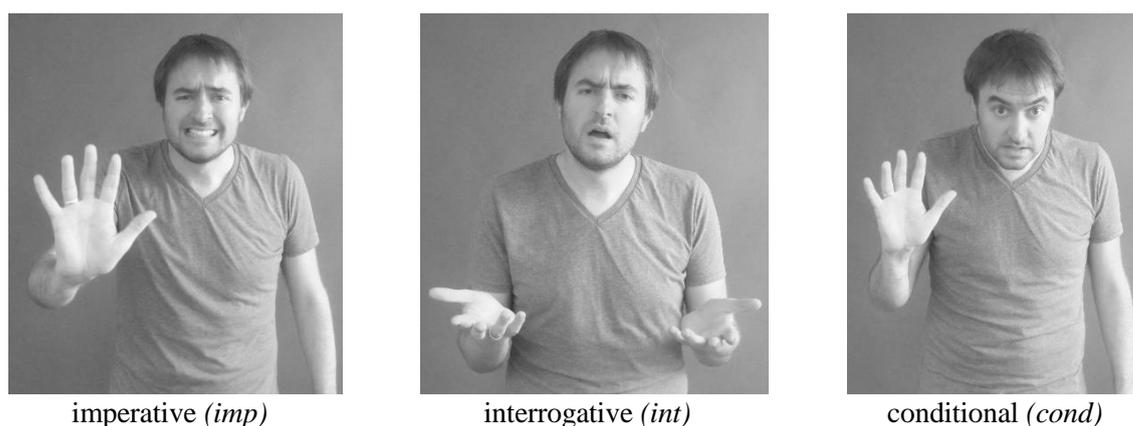


Figure 6.6. Non-manual facial expressions referred to in chapters 5 and 6.

Sub-functions of TIDAK are specified by mouthings such as jangan, tidak-ada and belum, which accompany 88% of tokens (n = 92 tokens of TIDAK where the function is *not* basic clause negator).

Table 6.2. The functions of TIDAK.

functions of TIDAK	Solo		Makassar		overall	
	n	%	n	%	n	%
basic clause negation	126	63.0	92	52.0	218	57.8
negative completive (‘not yet’)	12	6.0	20	11.3	32	8.5
negative exist/poss (‘not there/have’)	9	4.5	4	2.3	13	3.5
negative imperative (‘don’t’)	20	10.0	25	14.1	45	11.9
negative adverb (‘never’)	4	2.0	5	2.8	9	2.4
negative ability (‘cannot’)	11	5.5	12	6.8	23	6.1
negative permissibility (‘not allowed’)	8	4.0	7	4.0	15	4.0
negative necessity (‘not necessary’)	10	5.0	12	6.8	22	5.8
total	200	100	177	100	377	100

For the remaining tokens, sub-functions of TIDAK are specified by facial expressions and/or context. For example, a negative imperative function is almost always accompanied by lowered eyebrows and extensive eye contact with the target of the negative imperative clause. The distribution of the functions of TIDAK is shown in Table 6.2.

One of the simplest ways in which TIDAK is used is as a negative response to a question asked by one's interlocutor – M002 in (113) – or as an interrogative to seek confirmation of a negative statement made by one's interlocutor, as with M025 in (113). Negative interjections using TIDAK also appear to be very common (114).

(113)			<u>br</u>	<u>br</u>	<u>hs/br</u>	<i>Makassar</i>
	M025		LULUS	LULUS	TIDAK	
			graduate	graduate	NEG	
			'Have you graduated?'		'Not yet?'	

	M002			<u>belum</u>	TIDAK	
				NEG	'Not yet.'	
(114)			HAMIL	PT:PRO2		<i>Makassar</i>
	M017		pregnant	PRO2		
			'You were pregnant at the time.'			

	M026			<u>bukan</u>	<u>bukan</u>	
				TIDAK	TIDAK	
				NEG	NEG	
				'No! No! [That's not right!]'		

TIDAK is regularly used in interrogative structures of a type *X-TIDAK* where *X* is a predicate ('*X* or not'). The use of negation in interrogatives is found in some other urban varieties in Asia (Zeshan, 2013) such as Hong Kong Sign Language (HKSL), which uses an alternative question (A-NOT-A) construction (115), although it should be noted that there is an ellipsis of the second 'A' in the *X-TIDAK* construction. Interrogative constructions allow for TIDAK to occur in contexts that would not normally be acceptable. For example, BISA:1 TIDAK (116) does not occur in the data at all outside of interrogative contexts.

(115)				<u>pol-q</u>	<i>HKSL</i>
	TIN	INDEX ₁	BISCUIT	HAVE+NOT-HAVE	
	'Are there any biscuits in the tin?'				(Tang 2006:206)

(116)						<i>Solo</i>		
	BISA:1	PERGI	BUKU	FS:BPKB	UANG	NEGOSIASI	BISA:1	TIDAK
	can	go	book	BPKB	money	negotiate	can	NEG
	'Can you come with me to negotiate the money that I owe?'							

been introduced with respect to completion (see 5.2.1), and Zeshan notes that doubling is ‘extremely common, especially with manual and non-manual negation’ (2004:52).¹⁴⁵

- (121) Solo
- | | | | | | |
|----------|--------------|--------------|----------------|--------------|--------------|
| | TIDAK | <u>fokus</u> | PT:PRO3 | <u>cowok</u> | |
| RHgloss: | TIDAK | FOKUS | PT:PRO3 | COWOK | TIDAK |
| LHgloss: | | FOKUS | | | TIDAK |
| | NEG | focus | PRO3 | man | NEG |
- ‘Don’t focus your attention on men.’

TIDAK is usually articulated as a one-handed sign, and two-handed variants occur for only 25 of 377 tokens. The citation form for TIDAK, which is one-handed, occurs for 352 tokens of TIDAK; the remaining 6.7% are two-handed. Why might this be? For some sign languages, the two-handed realisation of a one-handed form is considered to have a strong link with conveying emphasis. For example, in their study of negation in LSC, Quer and Boldú (2006:5) note that ‘the bimanual articulation of the sign conveys a bigger emphasis in the expression of the negative value’. While there are examples where this holds in the CISLV, there are also tokens where two-handed forms appear in non-emphatic contexts, suggesting that, for these varieties, emphasis cannot always account for two-handed expressions of TIDAK.

It seems that the phonological environment of negative particles and clitics can influence the realisation of their handedness. In many cases where TIDAK is articulated bimanually, the previous or following sign is also bimanual, which offers a convincing explanation for this divergence.¹⁴⁶ For five tokens of TIDAK, the preceding sign is only one-handed, and so the phonological environment cannot account for the switch to a two-handed form. All five tokens are examples of ‘constructed dialogue’, or ‘reported speech’ (122), where informants reproduce one or a series of utterances that have previously been made (Metzger, 1995; Mather, 1996); in one instance, a hearing person is being quoted (123), and in four instances, deaf people are quoted.

- (122) The younger sibling said, “Mother doesn’t know”. hearing/Solo
 I said, “I don’t know about it”. deaf/Solo
 [I said] “Oh, no, I am wrong”. deaf/Makassar
 Budi said “No”. deaf/Solo
 [I said] “It wasn’t me (who told on you)”. deaf/Solo

- (123) Solo
- | | | | | | |
|--|-----------------|---------------|------------|--------------|--|
| | ADIK | BILANG | IBU | <u>tahu</u> | |
| | ADIK | BILANG | IBU | TIDAK | |
| | younger-sibling | say | mother | NEG | |
- ‘The younger sibling said “Mother doesn’t know”.’

¹⁴⁵ Note that there is a difference between the doubling of the same particle, which is what happens in (48), and a double particle construction, such as *ne... pas* in (13a).

¹⁴⁶ Furthermore, the argument works the other way, since divergence from the two-handed citation form of PALM-UP (for four tokens out of 20) all follow one-handed signs. All of these are clitics (=PALM-UP); the fusion of these clitics to their hosts may also have a role to play in the switch from a two-handed to a one-handed form.

It could be that reported speech plays a role in conditioning the handedness of the TIDAK form. As with other elements of variation on handedness, a larger sample would be needed in order to test this further, since the incidence of divergence from citation form is comparatively small. In any case, the finding that TIDAK occurs as part of constructed dialogue suggests that it would be worth coding for this to see whether it correlates with lexical or morphosyntactic negative variants (see 6.3.2).

ii) TIDAK-ADA

TIDAK-ADA, shown in Figure 6.7, usually occurs as a one-handed form, and appears exclusively in the Solo variety. It is not known to be used as a gesture by hearing Indonesians, but the sign includes two of the common formational characteristics noted by Zeshan (2004:35) – a side-to-side movement and a round ‘O’-type handshape – and is motivated by iconicity, either as an ‘empty’ space between thumb and forefinger, or as a handshape resembling ‘zero’ (Sagara, 2014). This handshape is used by several signs in the corpus that are all able to express negative existence or possession: these are KOSONG:1, KOSONG:2 and NOL (also in Figure 6.7).

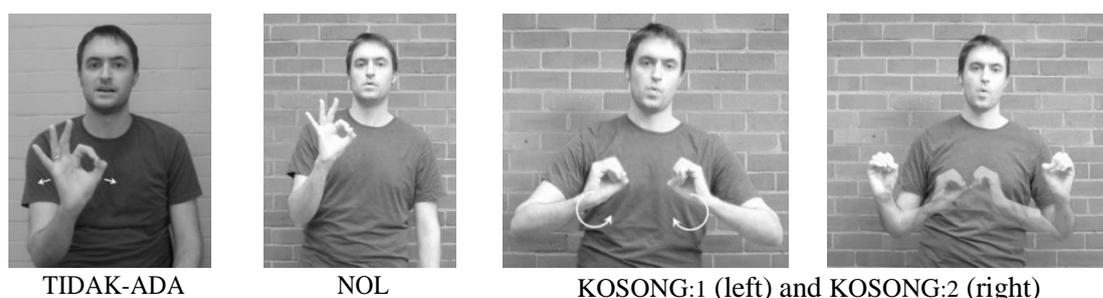


Figure 6.7. TIDAK-ADA (left) and forms that share its handshape.

In terms of its core function, TIDAK-ADA most commonly expresses negative existence/possession (‘not there/not have’) and negative completion (‘not yet’). The function of TIDAK-ADA is often clarified by the mouthings tidak-ada (for negative existence/possession), tidak-punya (for negative possession) and belum (for negative completion) (124). The conflation of existential and possessive functions is widely attested both across spoken languages (Lyons, 1968; Clark, 1978) and sign languages (Perniss & Zeshan, 2008; Chen Pichler et al., 2008; Lutalo-Kiingi, 2014).

(124)	<u>belum</u> PT:DET(VCD) TIDAK-ADA VCD-player TIDAK-ADA	 <u>tidak-ada</u> TIDAK-ADA TIDAK-ADA	 <u>tidak-ada</u> TIDAK TIDAK	Solo
-------	--	---	---	------

‘The VCD isn’t yet there. It isn’t there. It isn’t there.’

As sub-functions, TIDAK-ADA can also assume a basic clause negator function (133, 155) and a negative adverb function (‘never’); the latter is usually articulated with the mouthing tidak-pernah. However, this negative adverb function is more commonly expressed with a different movement path, shown in Figure 6.8, and in these cases the form is sufficiently different enough to be glossed as TIDAK-PERNAH (see 6.2.4).

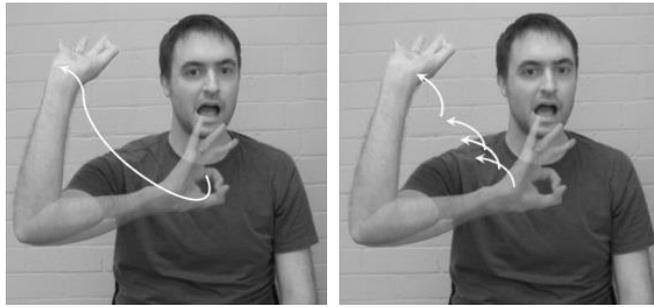


Figure 6.8. Phonological variants for *TIDAK-PERNAH* ('never')

Although *TIDAK-PERNAH* may have one of two different internal movements, the external path of both variants routinely moves up and to slightly behind the signer, indexing a part of the sign space that is commonly associated with the past, for example *DULU* (a past tense marker). This is presumably not coincidental, but emphasises the temporal meaning of this adverbial sign ('never').

Just as the semantic interpretation of the *TIDAK-ADA* handshape changes when it is inflected – as just described for *TIDAK-PERNAH* – so there are two other morphological processes that can affect the articulation of *TIDAK-ADA*. First, *TIDAK-ADA* may be localised within the sign space to give an additional meaning. These tokens are glossed as *TIDAK-ADA#loc*, and examples from the data are shown in (125). Note that (125a) is the only example of *TIDAK-ADA#loc* in the Makassar dataset. Since *TIDAK-ADA* does not occur in Makassar, this form may have derived from one of the other signs with which *TIDAK-ADA* shares the same handshape, or may have become lexicalised elsewhere as a sign meaning 'to have no money' and then diffused.

- (125a) 'there was nothing my pockets (I had no money)' (Makassar)
- (125b) 'there was no-one around me' (Solo)
- (125c) 'all of the messages from you in my mobile phone inbox were empty' (Solo)

Secondly, the movement path of *TIDAK-ADA* may be strengthened in order to create an emphatic meaning (*TIDAK-ADA#emp*). There are cases in the data where this is used to express emphatic negative completion (66), and emphatic negative existence (126).

- | | | | |
|-------|----------------|----------------------|-------------|
| (126) | cicil | nol | |
| | CICILAN | TIDAK-ADA#emp | <i>Solo</i> |
| | instalment | NEG-EXIST.EMPHATIC | |
- 'None of the loan instalments had been repaid.'

In some cases, forms that use the *TIDAK-ADA* handshape – including as a compound – have become lexicalised to mean 'talk nonsense,' 'ignorant' and 'a silly/fantastic idea'. These forms are depicted in Figure 6.9. All of these signs are again associated with semantically-relevant locations, including *KHALAYAN*, which is articulated high in the sign space – the use of this part of the space seems to generalise the meaning, as in 'idea X does not occur in this vicinity, and cannot be found more generally in other contexts.'



OMONG^KOSONG ('talk nonsense')



CUEK ('ignorant')



KHAYALAN ('a silly/fantastic idea')

Figure 6.9. Lexicalised signs that use the TIDAK-ADA handshape.

The particle TIDAK-ADA does not seem to occur in Makassar (this is addressed in 6.8). Table 6.3 shows the forms and functions of signs with the TIDAK-ADA handshape in the Solo variety.¹⁴⁷

Table 6.3. Forms and functions of signs with the TIDAK-ADA handshape, in the Solo variety.

function	TIDAK-ADA	TIDAK-ADA#emp	TIDAK-ADA#loc	total
negative adverb	6	–	–	6
basic clause negation	5	1	–	6
negative completion	45	1	–	47
negative exist/poss	28	2	9	39
total	84	4	9	98

iii) PALM-UP

PALM-UP (shown in Figure 6.10) is a very common form cross-linguistically, and often has different functions. For example, Ros, van der Kooij and Crasborn (2006) note that, in NGT, a sign with an identical form to PALM-UP functions as a 'general question sign'; at the discourse level, it is a turn-taking, or turn-yielding signal; and at the sentential level it indicates sentence-finality. It occurs with 'modal comment-like non-manual afterthoughts' such as "I'm not sure", "Rubbish!", "Who cares", "Could be" etc. In addition, Ros, van de Kooij and Crasborn suggest that PALM-UP might function as a prosodic boundary marker at the clause-level. McKee and Wallingford (2011) also analyse PALM-UP at the discourse level.

In TĪD the sign PALM-UP is a clause-final marker. Zeshan (2006b:159) comments that this sign is 'not a negator as such', but that negation is a 'sub-function of this sign, which occurs frequently in discourse and is used for several other functions in addition to negation'. PALM-UP in TĪD also

¹⁴⁷ It should be noted that glossing tokens that have the TIDAK-ADA handshape is particularly challenging. In many cases, the precise relationship between manual form, mouthing, and function of the token is unclear; further research is needed in order to understand this relationship with more certainty.

functions as a filler, as a marker of inconclusiveness or uncertainty, at the end of polar and content questions, at the ends of negative clauses alongside another negative, or as the sole expression of negation in a clause.



Figure 6.10. *The sign PALM-UP*

It is worth considering the possible origins of PALM-UP because this has a bearing on how this form should be treated. How did PALM-UP come to assume its function as a negative particle? For NGT, Ros, van der Kooij and Crasborn (2006:12) describe PALM-UP as a sign without semantic or referential content that points to the face: ‘a deictic gesture guiding the attention of the interlocutor to non-manual information’. This is one theoretical explanation for how it is that a single manual sign performs several different functions, but in the data, PALM-UP is not always accompanied by a notable negative facial expression.

An alternative explanation is that PALM-UP derives from a gesture that marks uncertainty (Zeshan, 2006b:135). Accordingly, different grammaticalisation pathways then lead from this basic meaning to express several separate functions: one is a question word or particle (127); a second is a predicate of uncertainty with a meaning, ‘don’t know’ (128), that is closer to the gestural origin; and a third function is a negative particle, which can become a clitic, and then an affix. I have also observed that PALM-UP marks resignation, conveying a meaning such as ‘what can we do?’

(127)	_____ <i>int</i>	<i>Solo</i>
	TEMPAT PALM-UP	(Isnaini & Palfreyman, 2014)
	place PALM-UP	
	‘Where [are you from]?’	

(128)	_____ <i>br</i>	_____ <i>shldr shrug</i>	<i>Solo</i>
	_____ <i>kawin</i>		
	KAWIN PT:PRO1 PALM-UP		
	marry PRO1 PALM-UP		
	‘You want to get married? I don’t know if that’s the right thing to do or not [it is not my decision/I have no opinion].’		

The remainder of this subsection focuses on the status of PALM-UP as a negative particle. As a means of expressing negation, the use of PALM-UP is semantically restricted to a small number of epistemic predicates, such as ‘know’ (129) and ‘see’ (130, 131). Given that PALM-UP occurs with a restricted set of predicates, and appears more frequently in the data as a cliticised particle than as a free particle, it is likely on the way to becoming an affix.

(129) Solo
_____ *hs*
PT:PRO1 **PALM-UP=TAHU**
PRO1 PALM-UP=know
‘I don’t know [if we will match].’

(130) Solo
_____ *tahu*
PALM-UP **PT:PRO1** **LIHAT=PALM-UP †**
PALM-UP PRO1 see=PALM-UP
‘I don’t know. I didn’t see.’

own in 3.5.2(i) example (E)

(131) Solo
_____ *tahu*
MOTOR **ANGKUT** **PT:PRO1** **LIHAT=PALM-UP**
motorbike lift-on PRO1 see=PALM-UP
‘I didn’t see whether the motorbike was taken away on a trailer.’

iv) Frequency distribution of negative particles

The distribution of six negative particles (TIDAK, TIDAK-ADA, PALM-UP, KOSONG-1, KOSONG-2, NOL) that occur in the annotated stretches of data is shown in Table 6.4. The low frequency of PALM-UP is explained by the criteria applied in Figure 6.23 (see the discussion in 6.3.1).

Table 6.4. A type-token distribution for negative particles in the data.

negative particle	Solo		Makassar		total n
	n	%	n	%	
TIDAK	200	67.3	177	94.1	377
TIDAK-ADA	84	28.3	–	–	84
PALM-UP	3	1.0	2	1.1	5
KOSONG-1	5	1.7	–	–	5
KOSONG-2	–	–	3	1.6	3
NOL	5	1.7	6	3.2	11
total	297	100	188	100	485

The most striking findings concern TIDAK and TIDAK-ADA. The former is particularly prominent in the Makassar variety, where TIDAK-ADA does not occur. Conversely, TIDAK-ADA accounts for over a quarter of the particles that occur in the Solo data.

The list of particles in Table 6.4 is not exhaustive, but represents the most commonly-occurring negative particles in the annotated stretches of data. Variants not listed in Table 6.4 are known to occur in other Indonesian cities. For example, NOT:asl (Figure 6.11) is used by some signers in the Javanese city of Surabaya, but this borrowing from ASL does not occur in the Makassarese or Solonese data.

‘understand,’ ‘like’ and ‘want’ (Quer and Boldú 2006:7). The frequency of cliticised particles is shown in Table 6.6.

Table 6.6. *The distribution of cliticised particles for each negative particle.*

particle	clitic		total
	<i>proclitic</i>	<i>enclitic</i>	
TIDAK	21	84	105
TIDAK-ADA	–	14	14
PALM-UP	4	11	15
total	25	109	134

Note that, while cliticised forms of TIDAK and PALM-UP occur in both varieties, =TIDAK-ADA only occurs in the Solo variety. This is to be expected, given that the free particle TIDAK-ADA is not found in Makassar.

When mouthings accompany negative clitics – as they often do – the order of the mouthed particle and predicate is sometimes different to that of the cliticised particle and predicate host. This obverse ordering can be seen in (134), where TAHU=TIDAK co-occurs with the mouthing ‘tidak tahu’. A similar mismatch can be seen in (105) with MAU TIDAK and tidak mau. These cases are remarkable because, while the mouthing is influenced by contact with Indonesian, the ordering of manual forms is syntactically distinct.

- (134) tidak-tahu lihat tidak-tahu *Solo*
CL(PERSON):BOS-DATANG **TAHU=TIDAK** † **LIHAT=TIDAK**
 boss-come know=NEG see=NEG
 ‘When the boss comes, s/he doesn’t know about it.’
†Shown in 3.5.2(i) example (C)

6.2.3. *TIDAK with mouthed predicate constructions*

In addition to its other functions, TIDAK may negate predicates that are simultaneously mouthed (135)-(137).¹⁴⁸ I refer to these as *TIDAK with mouthed predicate constructions*.

- (135) motor usah *Solo*
PT:PRO2 MOTOR JEMPUT TIDAK
 PRO2 motorbike pick-up NEG
 ‘It isn’t necessary for you to pick me up on your motorbike.’

- (136) tidak-tahu *Makassar*
TEMAN-TEMAN TIDAK
 friends NEG
 ‘Our friends don’t know.’

¹⁴⁸ Note that the translation of the mouthings in (135)-(138) are shown in Table 6.7.

- (137) $\frac{\text{mau}}{\text{TIDAK}}$ $\frac{\text{teman}}{\text{TEMAN}}$ $\frac{\text{mau}}{\text{TIDAK}}$ Solo
 NEG friend NEG
 ‘I don’t want [a long-distance relationship with him]. We will only be friends.’

The predicate of negation – which in instances of regular negation is expressed manually – is now expressed only non-manually, through mouthing. This can be seen in (138), which features a negative construction and, in the preceding clause, the corresponding affirmative realisation of this predicate.

- (138) Makassar
- | | | | | | | |
|---|---------------------------------|-------------|---------------|--|----------------|--------------------------------|
| | $\frac{\text{mau}}{\text{MAU}}$ | | | | | $\frac{\text{hs}}{\text{mau}}$ |
| BAPAK | MAU | BERI | TAMBAH | | PT:PRO1 | TIDAK |
| father | want | give | add | | PRO1 | NEG |
| ‘My father wanted to take me horse-riding again.’ | | | | | | ‘I didn’t want to.’ |

In one sense, the occurrence of TIDAK with mouthed predicates is an extension of the function of TIDAK as a basic clause negator – see 6.2.1(i) – because additional meanings are given through mouthings, just as *belum* and *ianggan* specified sub-functions in (38)-(40). However, there are two respects in which TIDAK with mouthed predicate constructions are different enough from TIDAK as a basic clause negator to be considered a discrete grammatical variant.

First, as noted in 6.2.1(i), for tokens where a sub-function of TIDAK is foregrounded – such as the negative imperative – a small but significant number of tokens have no mouthing. In these cases, sub-functions of TIDAK are specified by facial expressions – as shown in Figure 6.6 for the negative imperative function – and/or context. For cases of TIDAK with mouthed predicates, however, specific meanings are not inferable without mouthings: if (136) and (137) are articulated without mouthings, the meaning is lost. Secondly, the use of the basic clause negator for regular negation produces symmetric constructions (6.1.3). Conversely, TIDAK with mouthed predicate constructions are asymmetric, since the structure of the clause changes in ways that go beyond the addition of a negative marker, as can be seen in (138).

Having justified the TIDAK with mouthed predicate construction as a grammatical variant, its functional and semantic equivalence with the ‘TIDAK and *manual* predicates’ variant can be seen by contrasting the negation of the predicate ‘want’ in (137) and (138) with the negation of the same predicate in (105) and (132). Importantly, TIDAK with mouthed predicate constructions, while common, are not unrestricted in productivity, and this variant cannot be employed indiscriminately to negate *any* predicate. For this reason, TIDAK with mouthed predicate constructions are best characterised as a form of irregular negation. Table 6.7 shows the set of predicates that occur co-extensively on the mouth with the particle TIDAK, along with a token count for each.

Table 6.7. The frequency of predicates negated in the CISLV through TIDAK with mouthed predicate constructions.

mouthed predicate	meaning	n	mouthed predicate	meaning	n
tahu	know	22	suka	like	2
mau	want	22	ada	existential/poss.	1
bisa	can	20	cocok	match	1
usah	necessary/need to	20	enak	comfortable/nice	1
boleh	permissible	16	harus	have to	1
pernah	ever	8	lagi	again	1
cukup	enough	5	masuk	enter	1
masalah	problem	3	mungkin	possible	1
bawa	bring	2	pakai	use	1
jadi	happen	2	pas	right	1

From Table 6.7, it is clear that six or so predicates are highly disposed to be negated using this construction: ‘can’, ‘necessary/need to’, ‘allowed’, ‘ever’, ‘know’ and ‘want’. It is striking that these are from the same semantic groups that typically take suppletive negatives cross-linguistically (Zeshan, 2004:50). For the rest, I suggest that the mouthing must be perceptually salient (easily identifiable on the lips) and clear from the context, and that a signer must be confident that his or her interlocutor(s) will know the meaning or function of the borrowed word.

In the examples presented so far in chapter 6, the form of the co-extensive mouthing varies from the articulation of negative particle and predicate (for example *tidak bisa*) to the predicate alone (*bisa*). The former is closest to the context from which TIDAK derives, since hearing Indonesian speakers may gesture with a handshake while uttering the negative predicate in full, as in (103) where the speaker says ‘tidak bisa’. The latter reflects the fact that the mouthed negative particle *tidak* is redundant, given the use of TIDAK, and the loss of *tidak* leaves only the predicate, which reduces the duration of the sign.

In practice, these two variants occupy distinct ends of a continuum, with the full articulation of the negative particle (*ti dak bi sa*) at one end (107, 110, 120, 136), and the absence of the negative particle (*bi sa*) at the other (118, 135, 137, 138, 151). In between lie forms where the particle is reduced to varying degrees (*ga bi sa*), as in (152). This reduction may also be a consequence of language contact, since negative particles such as [tidak] are often reduced to [ɲak] and [ɲa] – see 6.1.3(ii) – which are much less visible on the lips to deaf signers. This means that there are several variants for mouthing the set of predicates in Table 6.7. Although the annotation of mouthing is not without difficulty (3.5.2(iii)), tokens have been coded for this variable. Table 6.8 shows the distribution of variant mouthed forms that occur in *TIDAK with mouthed predicate* contexts.

Table 6.8. *The distribution of the variable of mouthed forms for TIDAK with mouthed predicate constructions.*

mouthed form	Solo	Makassar	total
full negative particle	16	18	34
reduced negative particle	18	5	23
negative particle is absent	33	41	74
total	67	64	131

The cross-tabulation of these variables with the social factors of age and sex does not suggest a relationship between these factors, but it is notable that the reduced form of the mouthed negative particle is much more prevalent in Solo. This might be due to the fact that a prominent negative particle in Javanese, *enggak*, bears more than a passing resemblance to some of the reduced forms used by speakers of colloquial Indonesian varieties across Java. As a result, Solonese signers may be more familiar with this kind of negative mouthing. That aside, it could be that the reduction and/or absence of a mouthed negative particle varies according to the individual, and more investigation is needed to see what can account for variation in negative mouthings.

6.2.4. Negative suppletion

i) The case for a category of negative suppletives

Suppletives are common in several grammatical domains of spoken languages. Corbett (2007), for example, describes instances of suppletion for spoken languages in the domains of number, case, tense, mood, person, degree, gender and definiteness. Melčuk (1994:358) defines suppletion as follows:

For the signs X and Y to be suppletive their semantic correlation should be maximally regular, while their formal correlation is maximally irregular.¹⁴⁹

Suppletive categories are collections of ‘different lexical elements which share certain syntactic behaviours’ (Bernini & Ramat, 1996:156). Nübling (1998, 2000:228-230) argues for a definition that incorporates degrees of suppletion, and Corbett (2007) makes a distinction between ‘full’ suppletion and ‘partial’ suppletion. The former includes the Russian pair *rebënok* and *deti*, while the latter includes the English translation of these words – *child* and *children*, respectively.

Little has been written about suppletion in sign languages. Thus far, for example, no distinctions have been proposed for degrees of suppletion in sign languages. A negative item is understood here to be suppletive if the formal correlation with its positive counterpart is maximally irregular and the two counterparts – positive and negative –cannot be related through any morphological process (Zeshan, 2004:42). For many sign languages, it is necessary to refer to the notion of

¹⁴⁹ Melčuk is not referring to sign languages specifically, but uses the term ‘signs’ semiotically. However, his description applies to spoken and sign languages equally.

suppletion when describing negative constructions because there are certain predicates that cannot be negated by regular means. In Indian sign language varieties, for example, most predicates can be negated by following them with the neutral negative particle NAHI:N', as in (97). However, the existential/possessive predicate HA:I is exceptional in that it cannot be combined with manual or non-manual negative markers (Zeshan, 2003a:190), which means that (139) would be ungrammatical.

(139) * MAIN' GA:R°I: HA:I NAHI:N' *IPSL*
 PRO1 car EXIST/POSS NEG
 'I don't have a car.'

Instead, either the neutral negative particle is used, functioning as a negative existential (102), or a suppletive sign (NEG-EXIST) is used (140).

(140) MAIN' GA:R°I: NEG-EXIST *IPSL*
 PRO1 car NEG.EXIST (Zeshan, 2003a:190)
 'I don't have a car.'

According to Zeshan (2004:43), negative suppletion is limited to only a few signs in each language in her survey, but is common cross-linguistically. The only exception that she finds in her typological survey is the variety used in Karachi (Pakistan), which has no negative suppletives. TĪD has three examples of negative suppletives: along with the existential, two other predicates ('want', 'permissible') may not be negated regularly, and are negated through suppletion (Zeshan, 2006b).

It is usually high-frequency predicates that have negative suppletive forms, and this may not be coincidental. Werner (1987) suggests that suppletion increases the efficiency of the storage and processing of highly frequent items (see the discussion in 7.3). Additionally, negative suppletives tend to be from specific semantic domains (see 6.2.3 and Zeshan, 2004:50). While negative existence often seems to be expressed through suppletion cross-linguistically, lexical predicates may also have negative suppletive forms. Examples of this include KNOW and NOT-KNOW in Lebanese Sign Language, and WANT and NOT-WANT in PЖЯ (Zeshan, 2004:43).

Those who have used the concept of suppletion to describe elements of negation in sign languages (Zeshan, 2004, 2006a; Pfau & Quer, 2007) imply that, where a predicate is negated irregularly through suppletion, a regular means of expressing negation – such as the use of a basic clause negator, or non-manual marking – is not available. This implication is made with good reason, since it seems to hold true for the sign languages for which negative suppletives have been described so far, as in the example of negative existence in IPSL. Another example is sentential negation in LSC and DGS (Pfau and Quer 2007). Both of these languages are non-manual dominant, and predicates are negated through the combination of an optional negative particle and an obligatory headshake, which they analyse as a negative affix. They find that modals, such as 'like', 'need', 'want', 'may', 'must' and 'can' may not be negated by regular means.

Some of these, such as AGRADAR ('like') in LSC and DARF ('may') in DGS, must be negated through what Pfau and Quer analyse as cliticisation (141). Other modal predicates, such as PODER ('can') in LSC and WOLLEN ('want') in DGS, must be negated using suppletive forms, such as PODER-NEG (144). In each case, negation using a free negative particle (142, 145) or headshake (143, 146) is ungrammatical.

Negation with cliticisation:

- (141) GARTEN INDEX₃ KIND++ SPIEL DARF=NEG DGS
 garden index₃ child play may=not (Pfau & Quer, 2007:20)
 'The children may not play in the garden.'

Negation with a free negative particle, and with headshake:

- (142) * GARTEN INDEX₃ KIND++ SPIEL DARF NICHT DGS
 garden index₃ child play may not (ibid.:22)
 'The children may not play in the garden.'

- (143) * GARTEN INDEX₃ KIND++ SPIEL DARF^{hs} DGS
 garden index₃ child play may (ibid.:22)
 'The children may not play in the garden.'

Negation through suppletion:

- (144) ÚLTIM INDEX₁ DORMIR PODER-NEG^{hs} LSC
 last index₁ sleep can-NEG (ibid.:21)
 'I could not sleep last night.'

Negation with a free negative particle, and with headshake:

- (145) * ÚLTIM INDEX₁ VENIR PODER NEG LSC
 last index= sleep can NEG (deduced from Pfau & Quer, 2007)
 'I could not sleep last night.'

- (146) * ÚLTIM INDEX₁ VENIR PODER^{hs} LSC
 last index₁ sleep can (deduced from Pfau & Quer, 2007)
 'I could not sleep last night.'

Although few sign languages are reported to have many negative suppletives, Quer and Boldú (2006) report nine such forms for LSC, four of which are negative modals ('cannot', 'not possible', 'not allowed' and 'not need') and five of which are negative lexical verbs (negative existential, not matter, not useful, not of worth).

In section (ii) below, I argue that an extended definition of negative suppletion is needed for the data in the Indonesian corpus, because some predicates can be negated in several different ways, one of which is suppletive.

ii) **Extending the definition of negative suppletion**

If a negated form of predicate X is to be considered suppletive when another regular means of negating X is available, then this must be justified, since the suitability of analysing these negated forms as suppletion is no longer obvious. Consider the list of group 1 predicates, which are shown in Figure 6.12.

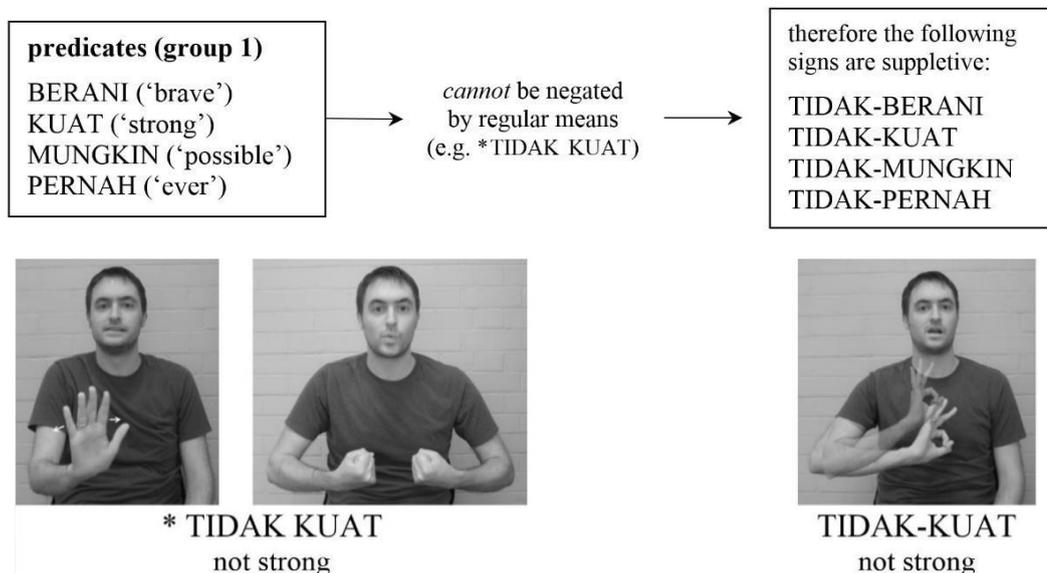


Figure 6.12. (above) Group 1 predicates, which cannot be negated by regular means; (below) non-grammatical and grammatical means of negating the predicate KUAT ('strong').

According to one of my research consultants, the predicates shown in Figure 6.12 cannot be negated through regular means, and this is corroborated by negative tokens in the data, and by my own observations. Consequently, the negative predicates listed on the right hand side of Figure 6.12 may be regarded as suppletive forms. Now consider the list of group 2 predicates shown in Figure 6.13.

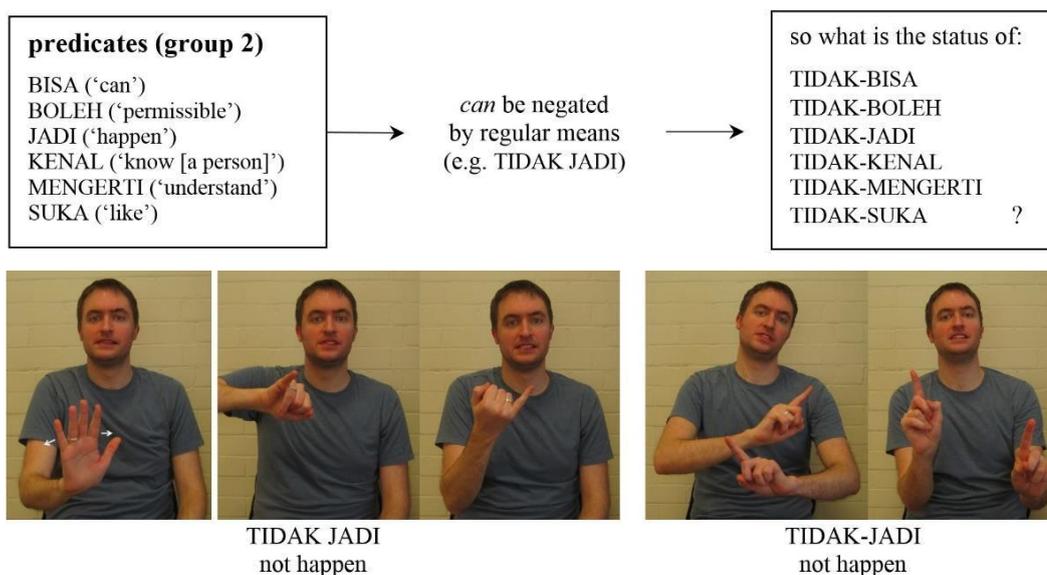


Figure 6.13. (above) Group 2 predicates, which can be negated by regular means, and may be negated by another means; (below) two grammatical variants for negating JADI ('happen').

Group 2 predicates can be negated by regular means (for example, TIDAK JADI), but may also be negated using a different variant (TIDAK-JADI). Why should the negative predicates shown on the right hand side of group 2 be regarded as negative suppletive status, given that these predicates can be negated by regular means? Is it not the case that these are simply psychological negatives (6.1.1) – antonymic lexical forms, as opposed to grammatical negative predicates?¹⁵⁰ Indeed, negation and antonymy have several characteristics in common, and share the property of inversion (de Soto & Trillas, 1999:296).¹⁵¹

Two separate lines of evidence are available to support the hypothesis that negative predicates for groups 1 and 2 (listed on the right of Figures 6.11 and 6.12) are negative suppletives, and not lexical signs. First, at the semantic level, where a separate antonymic form exists for these predicates, it is formally dissimilar to its negative suppletive correlate. For example, LEMAH (‘weak’) is dissimilar to TIDAK-KUAT (‘not strong’) and BENCI (‘hate’) is dissimilar to TIDAK-SUKA (‘not like’). There is also evidence to suggest that these negative predicates are regarded as grammatical negation by signers themselves. When asked to negate affirmative clauses that contain group 1 and group 2 predicates, my research consultants use the suppletive forms. The posited suppletive forms are also accompanied by mouthings that reference grammatical negation. For example, TIDAK-SUKA is usually accompanied by tidak suka, and TIDAK-KUAT by tidak kuat. If the mouthings for antonyms such as benci (‘hate’) or lemah (‘weak’) accompanied these predicates, then a case for suppletive status could not be made.

Secondly, at the morphosyntactic level, my research consultants consider it ungrammatical to negate the posited negative suppletive forms using regular clause negation (147, 148). This is important because it provides strong evidence to suggest that these forms are not lexical but grammatical (if they were lexical, then regular negation should be permissible).

(147) * TIDAK-KUAT TIDAK
 not-strong not

(148) * TIDAK-SUKA TIDAK
 not-like not

Some further examples of negative suppletives are depicted in Figure 6.14, and can be seen in (149) and (150). As with TIDAK, mouthings such as belum (‘not yet’) can specify an extra function for negative suppletives, as in (149).

¹⁵⁰ Other sign language linguists have noted the potential overlap between negation and antonymy. For example, Hendriks (2007:87) describes the negative form of LEGAL as ‘irregular’, but questions whether ILLEGAL is ‘really a negative form or whether the two forms are simply opposites’.

¹⁵¹ Both produce semantically opposite predicates, and in languages such as Spanish and English, negative affixes (‘un-’, ‘im-’, ‘non-’ et cetera) supply opposite meanings such as ‘happy–unhappy’ and ‘possible–impossible’.

- (149) *hs*
 belum-bisa
TIDAK-BISA
 cannot
 ‘I couldn’t yet [ask for a break].’

- (150) **PT:PRO1pl** **KENAL** **TIDAK** | **PT:PRO1** **TIDAK-KENAL** *Makassar*
 PRO1.PL know-a-prsn NEG | PRO1 not-know-a-prsn
 ‘We did not know each other. I did not know you.’

Note that TIDAK-ADA – shown in Figure 6.14 and described in 6.2.1(ii) – is technically suppletive, because the existential/possessive predicate is not negated regularly. However, it belongs in the second group of suppletives because TIDAK ADA/PUNYA does also occur in the data. See (107) for an example of TIDAK ADA/PUNYA, and Table 6.17 for the frequencies of these two variants.

Although TIDAK-ADA is a suppletive on the basis of the semantic and morphosyntactic criteria described above, it is treated in this investigation primarily as a negative particle (and coded as such). This is because semantically TIDAK-ADA is quite non-specific, and therefore it is used to negate other predicates as well, unlike other negative suppletives. Its cliticisation, described in 6.2.2, is then possible through frequent use.

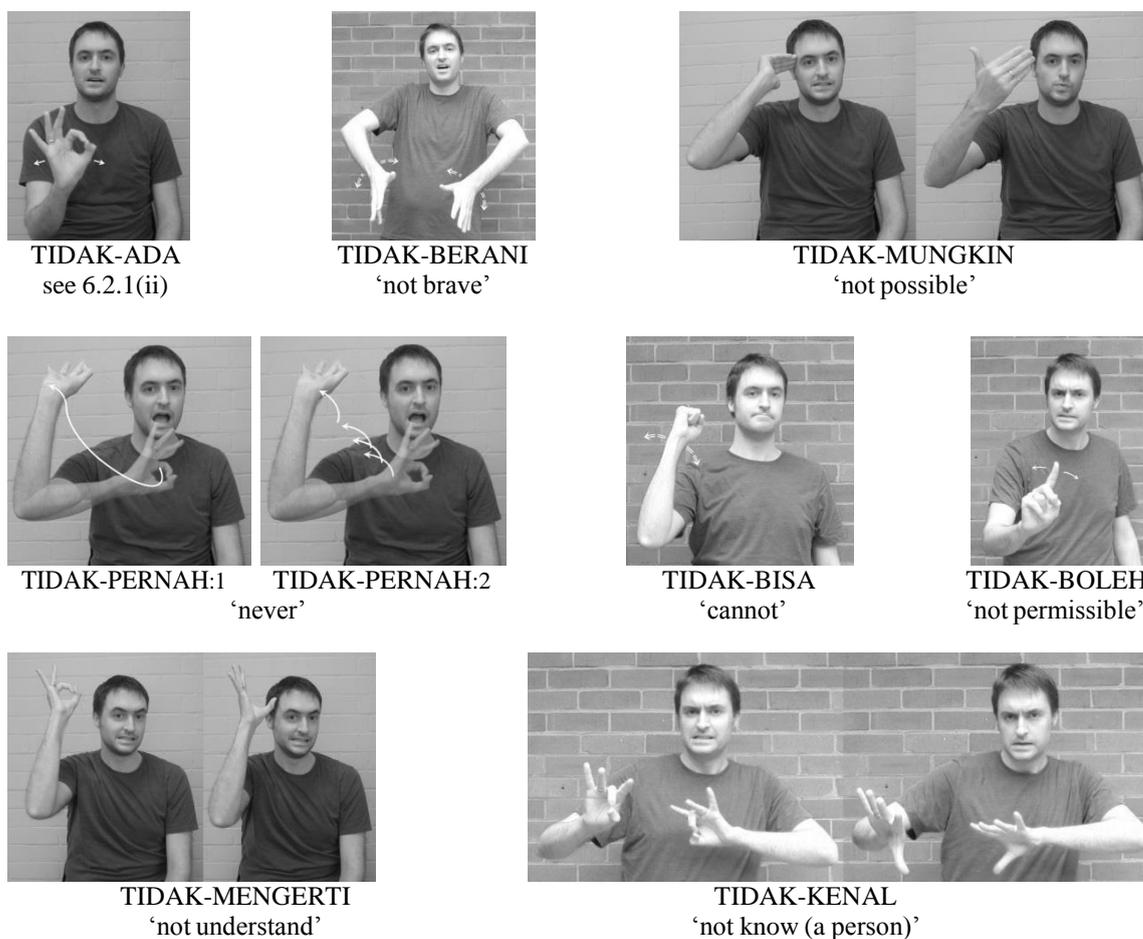


Figure 6.14. A selection of negative suppletive signs found in the CISLV.

Several of the negative suppletive forms contain a negative element in their form. TIDAK-KUAT (Figure 6.12) and TIDAK-PERNAH (Figure 6.14) have the same zero-handshape as TIDAK-ADA; and TIDAK-JADI (Figure 6.13) has a side-to-side movement. However, a similar phenomenon is found in spoken languages. For example, Bernini and Ramat (1996) cite *nulle part* (‘nowhere’) in their list of negative suppletives for French. The negative meaning is explicitly present in *nul(le)*, a negative adjective, but *nulle part*

has to be considered more an autonomous adverbial form than a descriptive NP because the regular preposition of place (*en, dans*) is missing and because the lexical item part is not interchangeable with other synonymous elements (for example, **nul lieu*). (Bernini & Ramat, 1996:156).

A similar example can be found in Indonesian, which has a negative suppletive *tiada*. This is a literary form meaning the same as *tidak ada*, ‘there isn’t’ (Sneddon, 2010:203), and there is clearly some formal resemblance between *tiada* and *tidak ada*, regardless of whether a historical relationship can be found.

Where a predicate can be negated by suppletion and also by regular clause negation, the most likely explanation for the existence of these competing variants is contact with the grammar of the surrounding spoken language, given that the negative particle nearly always *precedes* the predicate, as it does in Indonesian. For example, whereas the suppletive variant uses a single sign TIDAK-JADI, the ‘regular negation’ variant TIDAK JADI mirrors the structure of spoken Indonesian exactly, in terms of the number and order of signs. In the case of negative existence/possession in Solo, the ‘regular negation’ variant TIDAK ADA/PUNYA is used only five times in the data, whereas the TIDAK-ADA particle occurs 40 times. This is typical of the distribution between suppletive and non-suppletive variants for Group 2 predicates.

The frequency of negative suppletives in the CISLV is shown in Table 6.9.

Table 6.9. *The frequency of negative suppletive signs in Solo and Makassar.*

suppletive	translation	Solo	Makassar	total
TIDAK-BERANI	not-brave	3	–	3
TIDAK-BISA	cannot	41	11	52
TIDAK-BOLEH	not-permissible	–	6	6
TIDAK-KENAL	not-know-a-person	1	20	21
TIDAK-KUAT	not-strong	6	–	6
TIDAK-MENGERTI	not-understand	6	2	8
TIDAK-MUNGKIN	not-possible	1	–	1
TIDAK-PERNAH	not-ever	9	4	13
TIDAK-SUKA	not-like	6	–	6
BELUM:sibi	not-yet	10	–	10
	total	83	43	126

Nine negative suppletives occur in the Solo data, compared with five in the Makassar data, and the overall frequency of negative suppletive tokens is higher in Solo than in Makassar. Nonetheless, with 43 tokens of negative suppletion, this strategy is not peripheral in either variety.

6.2.5. Non-manual features and negation

Overall, there are only a few cases in the data where predicates are negated by non-manual means alone, although non-manual features seem to play an important reinforcing role in the expression of negation, and the absence of such features may affect the acceptability of negative utterances. Mouthings have an integral role in the negative system, and have been referred to throughout section 6.2. In this section, I briefly address two other non-manual features: headshakes, and facial expression.

i) Headshake

The form of the head movements in negative constructions ranges from strong headshakes to slight headshakes to a small number of examples where the head moves only to one side. Only 2.0% of tokens (16/804) use headshake *alone* to express negation, pointing to the conclusion that the negation system for these varieties is manual-dominant in type – see 6.1.4(i). Furthermore, only three of these sixteen tokens occur in the Makassar data, and nine of the remaining tokens are produced by a single Solonese signer. This suggests that headshake negation is generally not a common strategy for signers in Solo or Makassar.

However, headshake occurs with a further 177 (24.1%) of tokens alongside other negative elements (manual and/or mouthed forms). Given the very low frequency of negation through headshake alone, it is assumed that headshake is not obligatory, since in most cases the burden of negation is carried by other negative elements. Generally, therefore, negative headshakes seem to have a reinforcing function.

As a supra-segmental element, headshake is known to spread over different manual elements (see for example Pfau, forthcoming). The scope of negative headshake – the elements with which headshake tokens are co-extensive – has been coded in ELAN (Figure 6.15).

head nod	head nod	headshake		head nod
tetap	tetap	cerai	tidak	tetap
TETAP	TETAP	CERAI	=TIDAK	TETAP

Figure 6.15. The coding of headshake for example (117): the ELAN tiers represent head movement, mouthing and manual signs.

Headshake may occur with the negative particle only (106, 113, 138); with a negative predicate that comprises one phonological unit, such as a clitic (117) or a suppletive (129, 152); with a negative predicate that comprises two phonological units, one of which is usually a negative particle (105); or as part of a longer string of constituents (151). For the distribution of these types, see Table 6.10.

Table 6.10. The manual units with which headshake coincides (headshake scope) (n=193).

headshake scope	n	%
negative particle only	90	46.6
negative predicate (one unit)	60	31.1
negative predicate (two units)	12	6.2
part of a longer string of constituents	10	5.2
other	21	10.9
total	193	100

For over three-quarters of 193 tokens (77.7%), headshake occurs only with a negative element, whether this is free or part of the predicate, and it is relatively uncommon for a headshake to last for longer than a single phonological unit, as in (151).

(151) _____ *slight hs* *Solo*
ganti mau lunas tidak-apa-apa-apa
GANTI **TIDAK** **LUNAS** **PT:PRO3** **IBU** **TIDAK-APA2**
change NEG pay-off PRO3 mother it-doesn't-matter
‘She did not want to be repaid. She said “It doesn’t matter”.’

Given that there are some sign languages for which headshake is the main strategy for expressing negation (6.1.4), it is particularly striking that over three-quarters of negative tokens in the data include no headshake whatsoever. Signers often seem to go out of their way *not* to move their heads. There are several examples in the corpus where signers break eye contact and use head movements in the signs that precede a negative construction, but then freeze the position of their head and make eye contact while expressing negation. This can be seen clearly in Figure 6.16, where the Makassarese signer wearing a white shirt moves his head to the left (second picture) and to the right (third picture) but then makes sustained eye contact with his interlocutor, which synchronises exactly with both the manual articulation of TIDAK and the mouthing tidak tahu.



aku
PT:PRO1
PRO1
‘I was confused.’

head moves left head moves right head still/eye contact
BINGUNG-----**TIDAK** **PT:PRO1**
confused NEG PRO1
‘I didn’t know [what to do].’

Figure 6.16. A negative utterance with screen shots (above) showing signs and head movements that are highlighted in the transcription.

Even when signers use negatives emphatically, as in Figure 6.17 (overleaf), where the articulatory movement of TIDAK is expanded, there is not usually any head movement.



Figure 6.17. An emphatic manual negative (*TIDAK#emp*) with no observable head movement.

The selection of headshake can be regarded as another grammatical variant, and there are tokens in the data that prompt speculation on the factors that may affect the occurrence of headshake. In (152), for example, it is notable that both the interrogative utterance of signer S007 and the response from signer S006 incorporate headshake, which may suggest an accommodative element, or mirroring (see the discussion in 5.5.3).

(152)	<table border="0" style="width: 100%;"> <tr> <td style="width: 33%;"></td> <td style="text-align: center;"><u>sekarang</u></td> <td style="text-align: center;"><u>ambil</u></td> <td style="text-align: center;"><u>ga-bisa</u></td> <td style="width: 20%;"></td> </tr> <tr> <td style="vertical-align: middle;">S007</td> <td style="text-align: center;">SEKARANG</td> <td style="text-align: center;">AMBIL</td> <td style="text-align: center;">TIDAK-BISA</td> <td style="vertical-align: middle; text-align: right;"><i>Solo</i></td> </tr> <tr> <td></td> <td style="text-align: center;">now</td> <td style="text-align: center;">take</td> <td style="text-align: center;">cannot</td> <td></td> </tr> <tr> <td></td> <td colspan="4" style="text-align: center;">‘You cannot take the money straight away?’</td> </tr> </table>		<u>sekarang</u>	<u>ambil</u>	<u>ga-bisa</u>		S007	SEKARANG	AMBIL	TIDAK-BISA	<i>Solo</i>		now	take	cannot			‘You cannot take the money straight away?’				
	<u>sekarang</u>	<u>ambil</u>	<u>ga-bisa</u>																			
S007	SEKARANG	AMBIL	TIDAK-BISA	<i>Solo</i>																		
	now	take	cannot																			
	‘You cannot take the money straight away?’																					
	<table border="0" style="width: 100%;"> <tr> <td style="width: 33%;"></td> <td style="text-align: center;"><u>ga-bisa</u></td> <td style="width: 20%;"></td> </tr> <tr> <td style="vertical-align: middle;">S006</td> <td style="text-align: center;">TIDAK-BISA</td> <td style="vertical-align: middle; text-align: right;"><i>Solo</i></td> </tr> <tr> <td></td> <td style="text-align: center;">cannot</td> <td></td> </tr> <tr> <td></td> <td colspan="2" style="text-align: center;">‘I cannot.’</td> </tr> </table>		<u>ga-bisa</u>		S006	TIDAK-BISA	<i>Solo</i>		cannot			‘I cannot.’										
	<u>ga-bisa</u>																					
S006	TIDAK-BISA	<i>Solo</i>																				
	cannot																					
	‘I cannot.’																					

Social and linguistic factors that predict the occurrence of headshake are investigated in 6.6.

ii) Facial expressions

Facial expressions have not been analysed in detail as part of this investigation, but there are two types of expression that occur several times with negative constructions: protruding tongue (Solo) and puffed cheeks (Makassar) – see Figure 6.18. Both expressions occur in negative existential contexts, which seem to attract similar expressions in other sign languages too, including Thai Sign Language (puffed cheeks), NZSL and VGT (protruding tongue) – see Zeshan (2004:13).



Figure 6.18. Facial expressions that accompany the negative existential/possessive sign *TIDAK-ADA* in Solo (left) and Makassar (right).

Facial expressions that occur with negative constructions are variously described in the literature as syntactic, affective and pragmatic (see the discussion in Zeshan, 2004:14). In the data, there is no indication that facial expressions operate as part of the grammatical system of negation: for example, tokens of protruding tongue and puffed cheeks are produced by the same few signers, and it may be that these are idiolectal variants. However, some tokens of negation seem to feature other expressions, such as a lowering of the brows, and more research is needed to see whether the absence of these expressions affects the acceptability of a negative utterance.

6.2.6. Negation through derivational morphology

Both varieties use a handshape (referred to here as the ‘jelek’ handshape) that comprises a selected pinky finger (Figure 6.19a). When this handshape is used as part of a lexical sign in neutral sign space, the sign is glossed JELEK and means ‘bad’, but for suffixation – section (i) – and handshape substitution – section (ii) – the literal meaning of the sign is lost, and it becomes a negative morpheme. The ‘jelek’ handshape is used in at least two different ways to derive signs that include negative meanings: first, as a negative suffix, and secondly, through handshape substitution.

i) The negative suffix \equiv JELEK

Negative suffixes are the result of a sequential morphological process, where a final handshape morpheme is added (Zeshan, 2004). The predicate and the negative morpheme form a unit in a sequence that is clearly identifiable, with the negative morpheme always appearing after the predicate. The host signs identified in the CISLV are RASA (‘taste’) and HATI (‘heart’). Each of these signs may receive an affirmative suffix \equiv BAIK or a negative suffix, \equiv JELEK. RASA \equiv JELEK (Figure 6.19b) is used to mean ‘tasteless’ or ‘uncomfortable,’ and HATI \equiv JELEK also refers to a feeling of discomfort or awkwardness.



Figure 6.19(a) The ‘jelek’ handshape.



6.19(b) The host-affix combination RASA \equiv JELEK.

In accordance with observable properties of affixes in other sign languages (Zeshan, 2004:49), the suffix \equiv JELEK exhibits a high degree of fusion to the host sign that precedes it, and the set of host signs to which it may attach is heavily restricted. In other words, unlike the negative clitics described in section 6.2.2, the suffix is not productive. The same handshape has been observed for Hong Kong Sign Language (Tang, 2006), although the two are not known to be related. The

signs derived from this handshape in HKSL include meanings such as ‘unclear’, ‘unskillful’ and ‘unreasonable’ (Tang, 2006:223).

ii) Handshape substitution

Handshape substitution is a *simultaneous* internal morphological process where the handshape used for a sign is replaced by another (Zeshan, 2004:44). The replacement handshape is the negative ‘jelek’ handshape (Figure 6.19a). This is used for a small number of signs, including the signs TULI:1 (‘deaf’), where the handshape replaces a selected index finger pointing to the ear (Figure 6.20), and KULIT-HITAM (‘dark skin’) where it replaces a selected index finger pointing at the skin on the cheek (Figure 6.21). Again, similar signs that use handshape substitution occur in HKSL, meaning ‘don’t know’, ‘don’t understand’ and ‘taste awful’ (Tang, 2006:223).¹⁵²



Figure 6.20. The sign TULI:1.



Figure 6.21. The sign KULIT-HITAM.

6.3. Grammatical variation in the domain of negation

Having documented the negative constructions that are found in the data in section 6.2, it is possible to identify four linguistic variables in the grammatical domain of negation. These are (i) the selection of the basic clause negator TIDAK (6.4); (ii) the choice of paradigmatic variant (6.5); (iii) the syntactic position of the negator (6.6); and (iv) the selection of headshake (6.7). All of these are regarded as grammatical variables with the exception of the second, which is potentially both lexical and grammatical. For example, in (124) two different particles – TIDAK-ADA and TIDAK – are used for a similar function. However, the analysis in 6.5 tends towards the grammatical in the choice of variants that are identified. For each section (6.4)-(6.7) the variable is introduced, the results of multivariate analysis are presented, and the findings are discussed. There is considerable overlap in the coding that is used for each variable, and so the coding is discussed once, in section 6.3.2. Prior to that, the variable context is circumscribed (6.3.1).

¹⁵² As mentioned earlier, the use of the ‘jelek’ handshape does not necessarily indicate an evaluative judgement. This suggests that the ‘jelek’ handshape may function rather like ‘non-’ in English (compare the semantic difference between *unprofessional* and *non-professional*).

6.3.1. Circumscribing the variable context

Although in Indonesian *kurang* can express grammatical negation as well as psychological negation (6.1.1), it is excluded from analysis here since the sign KURANG only occurs in the data as a psychological negative, as in (153).

(153) *Makassar*

KURANG	...	DULU BAGUS		SEKARANG	KURANG
deficient	...	past good		now	deficient
‘There is not enough [money].’ ...		‘In the past, there was enough; now there isn’t.’			

Another context that is excluded from the analysis is where signs meaning ‘tidak apa-apa’ occur. This exclusion merits discussion on two grounds: the sheer frequency of contexts in both Solo and Makassar varieties, and the fact that similar signs have been included in analyses of negation in other sign languages. Formally, two variants occur in both Makassar and Solo: TIDAK-APA-APA (Figure 6.22), and TIDAK/tidak-apa-apa. These variants occur 155 times in the 180 minutes of annotated data, and are highly salient, contributing to the similarity of the two varieties (7.2).



Figure 6.22. *The sign TIDAK-APA-APA.*

TIDAK-APA-APA is glossed after the phrase ‘tidak apa-apa’ in Indonesian, which has several pragmatic functions: it is a filler, and it can also mean something akin to ‘never mind,’ which means it may be – and usually is – used in response to almost any proposition. It can also mean ‘it doesn’t matter’ (McGinn, 1991) or ‘that’s alright’, in acceptance of an apology (Hartanto, 2002:57). While the pragmatic functions of TIDAK-APA-APA and TIDAK/tidak-apa-apa in the corpus have not yet been identified, it is likely that these signs have some functional overlap with ‘tidak apa-apa’.¹⁵³

¹⁵³ Among many other pragmatic functions of ‘tidak apa-apa’, more specific, gendered meanings are also possible. According to Muthoharoh & Musthofa (2014), ‘nggak apa-apa’ is used by women to hide a feeling (and avoid concern); to maintain a projected image; to curtail discussion of a problem; to deflect attention from shame; to attract the attention of a male interlocutor; and/or to prompt him to self-reflection. More research is needed to see whether any gendered meanings of variants meaning ‘tidak apa-apa’ are available.

There are signs similar in form and function to TIDAK-APA-APA in other, unrelated sign languages, including FinSL and Cambodian Sign Language (personal communications from Karin Hoyer (7 July 2014) and Tashi Bradford (3 July 2014) respectively). In LSC, Quer and Boldú (2006) analyse a sign meaning ‘not matter’ as an example of negative suppletion. However, TIDAK-APA-APA is excluded from the analysis here on three grounds. First, from a theoretical perspective, if TIDAK-APA-APA represents a negative sign, its positive correlate – or opposite – is unclear. Secondly, from an analytical perspective, the proliferation of functions that TIDAK/tidak-apa-apa and TIDAK-APA-APA exhibit make them very difficult to categorise. Thirdly, if included, these signs would constitute almost one-sixth of all negative tokens, which would significantly skew the findings.

When coding for negative contexts, the range of functions of PALM-UP – discussed in 6.2.1(iii) – sometimes leads to several possible interpretations that must be considered. For example, (154) features two PALM-UP tokens. Although the negative completive mouthing belum is co-extensive with the first token, I have coded only TIDAK as a negative particle here, since it negates the mouthed predicate tahu (‘know’). In other words, the negative elements are the co-extension of TIDAK with tahu and the mouthing belum tahu while the first PALM-UP token is treated as an interrogative marker, in tandem with the second.

(154) belum tahu mana *Makassar*
MOTOR **PALM-UP** **PT:PRO1=TIDAK** **PALM-UP**
 motorbike PALM-UP pt:pro1=TIDAK PALM-UP
 ‘But I don’t yet know how to ride a motorbike, so what can I do?’

In order to consistently determine between contexts where PALM-UP is a negative particle, and contexts where it is a lexical predicate, a series of questions were asked for each token (Figure 6.23). As a result, several tokens were re-classified as predicates and excluded from the data.

Signs such as OMONG^KOSONG and CUEK (6.2.1(ii)), and derivational negatives (6.2.6) are excluded on the grounds that they have lexicalised, and that the number of items in these categories are severely limited. It is true that other categories, such as *TIDAK and mouthed predicate* constructions and negative suppletives, also have restricted membership, but items in those categories constitute grammatical variants for negating predicates that may also be negated by other means (see the discussion in 6.5).

Further adjustments to the dataset for each analysis are explained in sections 6.4-6.7.

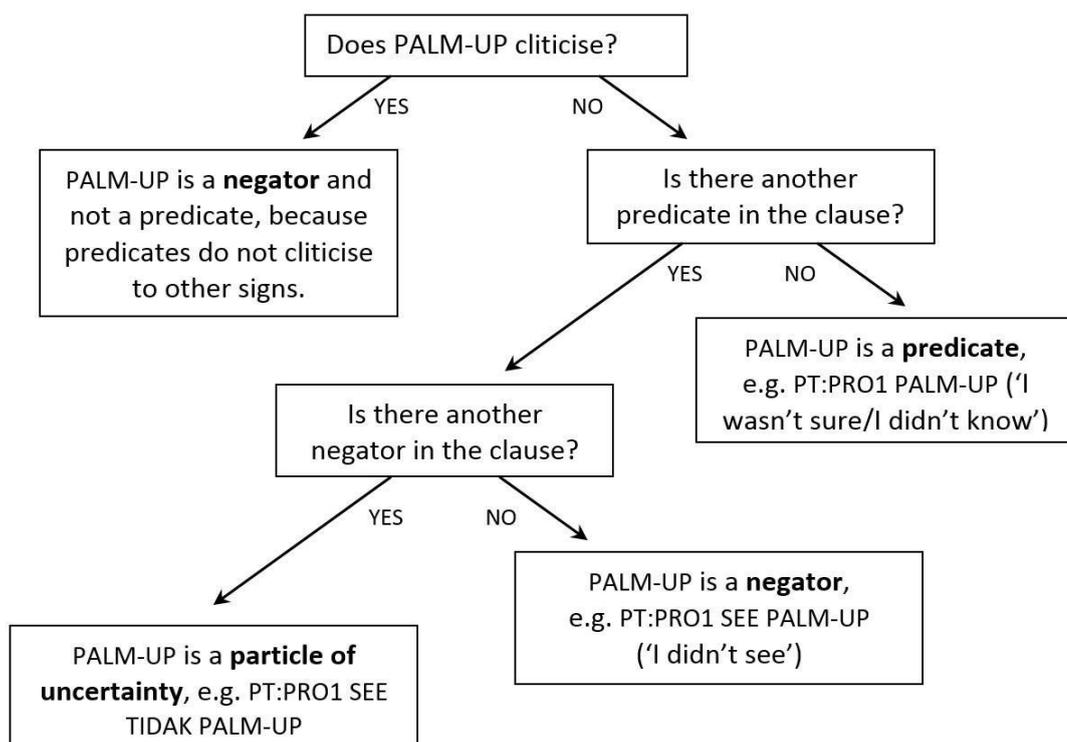


Figure 6.23. Criteria for determining the status of PALM-UP, for coding purposes.

6.3.2. Coding for quantitative analyses

As with the analysis of completion (5.4.2), three social variables are included in each analysis: **region** (Makassar, Solo), **sex** (male, female) and **age** (a continuous variable), with **signer code** as a random intercept for each run, to account for individual variation (3.6).

For linguistic factors, no quantitative analysis has been conducted on variation across negative constructions, as far as I am aware, and decisions concerning which factors to code for were made on the basis of the literature review for this domain (section 6.1) and reflection on tokens of negation in the data. The dependent linguistic variables used for the analyses in 6.4-6.7 are explained at the beginning of the relevant section. The independent linguistic variables used for each analysis were selected from the following list.

1) The **type of negation** (regular or irregular) is based on the categorisation introduced in 6.1.4(ii). Since non-manual negation is a peripheral option (6.2.5), only negation sequentially through the use of a negative particle (6.2.1) is classified as regular negation. All other types of negation are classified as irregular.

2) The **syntagm of negation** (pre-predicate, post-predicate, one-sign clause or dropped predicate) describes the overall position of the negative construction relative to the predicate (see the discussion in 6.2.1(i)). The code ‘dropped predicate’ was necessary because of contexts such as (155), where the utterance relates to the absence of flooding at the signer’s house – compared to

other houses – and the predicate (AIR, ‘water’) is inferable from the content of preceding utterances, but not overtly expressed in the clause:

(155) **PT:PRO1 RUMAH TIDAK-ADA** *Solo*
PRO1 house NEG
‘There was no flooding at my house.’

Doubling is treated here in the same way as it is for the analysis of variation in the domain of completion (see 5.4.1). Each occurrence of negation is included as a separate token, one as pre-predicate and one as post-predicate, because there are not enough tokens to code for doubling separately. Where negation is simultaneous with the predicate, as in the case of TIDAK with mouthed predicate constructions and negative suppletion, the position of the negative construction relative to the main predicate is coded, where appropriate (see further discussion in section 6.6 for details); where there is no main predicate, the token is coded as a one-sign clause.

Note that the syntagm of negation is used as an independent variable for other analyses.

3) **Headshake presence** (yes, no) is also used as an independent variable in other analyses.

4) **Function** (basic clause negation, modal negative, negative completive/adverbial, negative existential/possessive, imperative) is coded as one of five categories. Completive/adverbial functions are conflated on the grounds that they share certain properties (see 5.3.1). Basic clause negation serves as a catch-all category for any other function of negation that do not match any of the other four.

5) **Predicate type** (active, nominal, stative/adjectival, not a lexical predicate) is coded because of a reported link between the syntactic slot of the basic clause negator and the predicate type in Swedish Sign Language (STS). Bergman (1995:88) reports that the basic clause negator occurs after verbal predicates but before non-verbal predicates. The latter category includes nominal and adjectival/stative verbs, I code for these separately.

6) **Interrogative status** (question (direct), question (other), not a question) is the first of three independent variables that operate at the discourse level. The category ‘question (other)’ includes rhetorical questions (118), tag questions (120), and interrogative utterances where signers mirror their interlocutor (example 113/M025).

7) **Status of the utterance relative to the previous turn, or ‘response status’** (answer to a question, negative interjection, neither of the above) is concerned with instances where signers are responding to their interlocutor, whether making a negative response to a question (113/M002) or using a negative interjection (114).

8) **Constructed dialogue** (reported (hearing), reported (deaf), not reported) codes for instances where signers recreate dialogue in their utterance. Where dialogue is reported, the hearing status

(hearing, deaf) of the person whose dialogue is being constructed is coded. This coding is motivated by reflection on the data, and further rationalised on the basis that reported speech could be a factor in the articulation of TIDAK as a two-handed form (see 6.2.1(i)). Constructed dialogue is also found to be significant by Lucas et al. (2001) and Fenlon, Cormier and Schembri (2014) – see 2.3.1.

6.4. Basic clause negator vs. other types of negation

i) Motivation and dependent variables

As the most frequent means of expressing negation, the basic clause negator TIDAK is used in many types of negative construction – see 6.2.1(i) and 6.2.3. It is also the form that is closest to co-speech gestures used by hearing people in Indonesia (6.2.1(i)). The dependent variables **basic clause negator** and **non-basic clause negator** are used in this analysis to ascertain which factors predict the use of the basic clause negator. This analysis is considered worthwhile given the prevalence of basic clause negators cross-linguistically (6.1.4(iii)) as well as the relative versatility of TIDAK (6.1.2(i)). Note that this analysis is concerned with the selection of the form TIDAK (the basic clause *negator*) rather than the function of basic clause negation. Thirty-four tokens are excluded in order to prevent categorical contexts, and $n = 770$.

ii) Independent variables and *Rbrul* findings

Sex and age are not significant, but region is significant. Similarly, interrogative status was not significant. In addition to region, the *Rbrul* analysis that has the best run (shown in Table 6.11) also includes the following factor groups: syntagm of negation, headshake presence, predicate type, response status, and constructed dialogue presence.

All of the factor groups in the run shown in Table 6.11 are found to be significant, but taking into account the p-values and the effect size (or range) for each group, the following constraint hierarchy holds:

<p>predicate type > response status > constructed dialogue > region > headshake presence > syntagm of negation</p>
--

Nominal predicates favour the selection of the basic clause negator TIDAK with a factor weight of 0.799. Negative interjections also prefer the selection of TIDAK (0.725) while negative answers slightly disprefer TIDAK to other types of negation (0.417). Where the dialogue of a hearing person is constructed, TIDAK is favoured, with a factor weight of 0.606, and for a deaf person, TIDAK is slightly favoured (0.536). Region is a predictor of basic clause negator selection, with the Makassar variety favouring TIDAK (0.592) and the Solo variety disfavouring it (0.408). Headshake favours TIDAK (0.578), as do one-sign clauses (0.554) and negative clauses with dropped predicates (0.537).

Table 6.11. Rbrul findings for the selection of the basic clause negator.

deviance	923.018			
DF	14			
grand mean	0.49			
application value	basic clause negator			
total (N)	770			
factor groups	L-O	%	N	CFW
region	(p = 0.0334)			
Makassar	0.374	61.0	290	0.592
Solo	-0.374	41.7	480	0.408
	range: 18			
syntagm of negation	(p = 0.0296)			
one-sign clause (neg)	0.216	62.6	211	0.554
dropped predicate	0.150	48.1	81	0.537
pre-predicate (neg-pred)	0.014	47.7	109	0.504
post-predicate (pred-neg)	-0.381	41.7	369	0.406
	range: 15			
headshake presence	(p = 0.00121)			
yes	0.314	61.9	189	0.578
no	-0.314	44.8	581	0.422
	range: 16			
predicate type	(p = 0.000805)			
nominal	1.378	84.6	39	0.799
active	-0.103	47.1	70	0.474
stative/adjectival	-0.625	43.3	210	0.349
not a lexical predicate	-0.650	48.8	451	0.343
	range: 46			
response status	(p = 2 x 10⁹)			
negative interjection	0.970	81.3	75	0.725
answer to a question	-0.336	56.1	107	0.417
neither of the above	-0.633	43.5	588	0.347
	range: 38			
constructed dialogue	(p = 0.000498)			
reported (hearing)	0.431	63.0	46	0.606
reported (deaf)	0.145	61.2	116	0.536
not reported	-0.575	45.6	608	0.360
	range: 25			

iii) Discussion

The finding that region is a predictor of the use of the basic clause negator can be explained with respect to the fact that the Makassar variety relies upon the basic clause negator to perform functions that are often expressed in the Solo variety using other strategies. For example, tokens of negative completion in the Solo variety prefer TIDAK-ADA to TIDAK with a ratio of 15:4 (compare Tables 6.2 and 6.3). Conversely, the Makassar variety does not use TIDAK-ADA at all, as reported in 6.2.1(ii).

The use of the basic clause negator is clearly the strategy of choice for negative interjections, where signers wish to refute an assertion made by an interlocutor, as in (114). In a sense, this confirms the status of TIDAK as *basic* clause negator, since it is the go-to sign when signers need to make an immediate challenge to what has been asserted by an interlocutor. In terms of the hypotheses posed in 6.2.1(i) concerning the preference of TIDAK for negative interrogatives,

responses and interjections – which was made on the basis of introspection and reflections on the data – only the latter is substantiated by the data. The factor group of negative interrogatives is not significant, while negative responses *disprefer* the basic clause negator.

The preference of nominal predicates for TIDAK is unsurprising because in 6.2.1(i) it was noted that hearing Indonesians use the co-speech gesture TIDAK for both *tidak* and *bukan*. The latter is used to negate nominal predicates – see 6.1.3(i) – and in this case, the contact that signers have had with spoken Indonesian can help to explain the finding that nominal predicates favour TIDAK. In other words, signers are perhaps more likely to use TIDAK to negate nominal predicates because this form is also used by hearing people as a co-speech gesture in such contexts.

The finding that concerns the role of the constructed dialogue factor group is discussed further in section 6.5.2, since constructed dialogue is also found to be significant in predicting TIDAK with mouthed predicate constructions, and the factors occur in the same order, with TIDAK favoured most by constructed hearing dialogue, then constructed deaf dialogue, and finally by no constructed dialogue. The findings reported in 6.5.2 provide a further compelling insight as to why this factor group is a predictor of the selection of the basic clause negator.

The slight preference of one-sign clauses and dropped predicate contexts for the basic clause negator might also be explained with recourse to TIDAK with mouthed predicate constructions, since this type of construction has been coded using the aforementioned factors (see 6.3.2). However, the reason why TIDAK is preferred by headshake presence is still not clear. It could be that the side-to-side movement of the basic clause negator is suited in some way to the similar movement entailed by a headshake, for similar reasons to the presence of echo-phonology for mouth gestures (Woll, 2001). Further research is needed to substantiate such a hypothesis.

6.5. Paradigmatic variation

Section 6.5 is concerned with paradigmatic variation (this notion is introduced in the opening paragraphs of chapter 6). Here, the focus is on different ways in which the same predicate can be negated. These are considered to operate at the grammatical level, but are paradigmatic rather than syntagmatic (or syntactic) because this variation is concerned not with where in the sentence a variant occurs, but which variant is selected from a list of several paradigms. The paradigms in question are (i) negation with a free particle (6.2.1); (ii) negation with a cliticised particle (6.2.2); (iii) *TIDAK with mouthed predicate* constructions (6.2.3); and (iv) negative suppletion (6.2.4). Although there are some instances in the data where predicates are negated through headshake (6.2.5) such constructions are produced by only a handful of signers, and are not used across the sign communities of Solo and Makassar in the way that other grammatical variants are.

The data feature several supertokens (see 3.4) that point to the functional equivalence of these paradigms, and hence their status as grammatical variants. The experiential perfect is negated in (156) first with a negative particle and then in the next clause with a negative suppletive.

(156)	PT:PRO3 PRO3	NS:GERKATIN Gerkatin	TIDAK NEG	PERNAH EXP.PERF	PT:PRO3 PRO3	⋮	<i>Solo</i>
	NS:GERKATIN Gerkatin	PT:PRO3 PRO3	TIDAK-PERNAH NEG.ADVERBIAL	AKTIF active	PT:PRO3 PRO3		

‘She has never been involved with Gerkatin. She has never been active with Gerkatin.’

A similar switch occurs across two clauses in (150), where KENAL (‘to know a person’) is negated through a negative particle and then using a negative suppletive. The mouthed predicate *mau* (‘want’) is negated simultaneously using TIDAK in (138), which is followed immediately by (105), where a particle is used to negate the same predicate sequentially. Parallel contexts can be added to this, such as (132), where a negative clitic is used – by a different signer – to negate MAU, and many other parallel contexts can be seen in the examples provided in the data so far in chapter 6, for a range of predicates.

Consider Figure 6.24, which shows the distribution of paradigmatic variants for the ten most frequent negative predicate types in the annotated stretches of data.

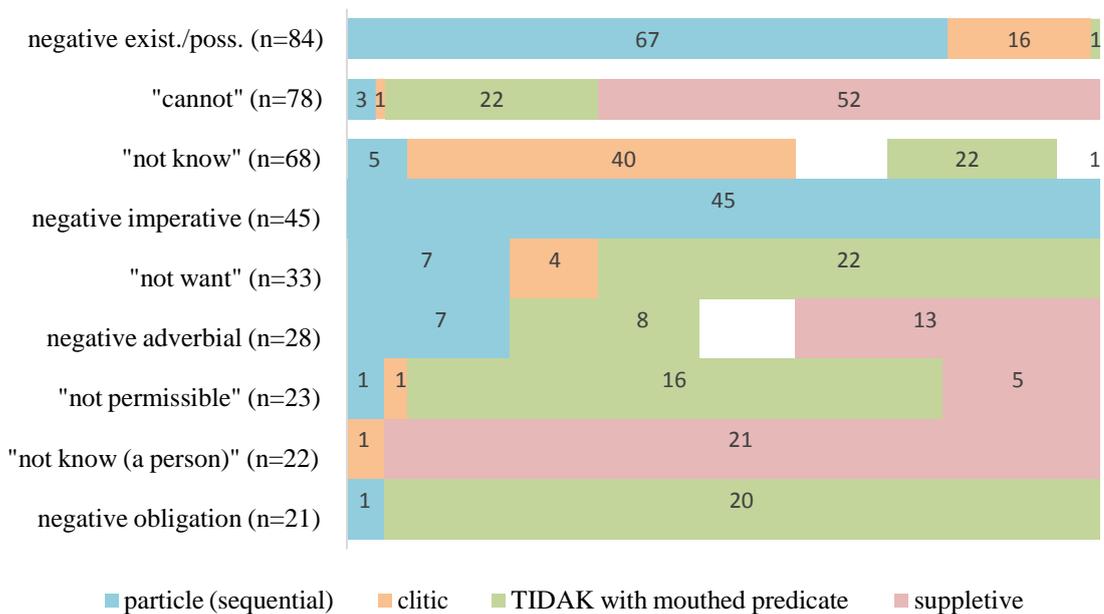


Figure 6.24. The distribution of paradigmatic variants for the ten most frequent predicates.

These ten types represent 507 tokens, or 63% of all negative tokens, and the range of different combinations of paradigmatic variants that occur for each type is striking. Only one negative predicate type – the negative imperative (‘don’t’) – categorically favours a single variant (the negative particle), and hence there is only one case of form-function symmetry. Compare, for example, the negative predicate ‘not know (a person)’ and negative obligation (‘not necessary’).

The former is expressed almost wholly by negative suppletives, but can also be expressed using a negative clitic. The latter is expressed almost wholly by a *TIDAK with a mouthed predicate* construction, but can also be expressed using a negative particle. To summarise, it is clear that negative predicate types have preferences for different paradigmatic variants.

It is important to investigate this further because the existence of four separate grammatical variants for the negation of the same predicate is not attested in the sign language literature to date. Since *Rbrul* can only handle binary dependent variables, each paradigm is investigated in turn. Altogether, the *Rbrul* findings for three runs are presented in the remainder of section 6.5. The dependent variables for these runs are **negative particle** and **another paradigm** (6.5.1); **TIDAK with a mouthed predicate** and **another paradigm** (6.5.2); and **negative suppletive** and **another paradigm** (6.5.3).¹⁵⁴ For each run, the independent variables are stated, and *Rbrul* findings are shown. In order to avoid repetition and to present a cohesive account of factors that predict the choice of paradigmatic variant, all findings are discussed in section 6.5.4.

Initially it was desirable to include the predicate as an independent variable in order to show that this does indeed affect the choice of variant (see Figure 6.24 and the discussion in section (i) above). This has not been possible because some predicates do not use some paradigms, and this creates categorical contexts that *Rbrul* cannot process (3.6). One way of responding to this would be to restrict the predicates that are included in a given run to those that are known to use certain paradigms. For example, from Figure 6.24 it can be seen that 'cannot' and 'not permissible' occur with all four paradigms; and negative existence/possession and 'not want' occur with three paradigms (the exception being negative suppletion). This is also not possible because there would be too few tokens, and the analysis would be inordinately restricted. It is, however, a possible strategy for future research if a larger dataset of tokens is available. As with the analysis in section 6.4, 34 tokens are excluded in order to prevent categorical contexts, and $n = 770$.

6.5.1. Free negative particle

Using the dependent variable **free negative particle** for the application value, five factors have been selected for analysis with *Rbrul*: region, sex, age, interrogative status, and response status. Age, interrogative status and response status are found to be significant, and region and sex are not. The findings are shown in Table 6.12 (cells with darker shading refer to factor groups that are found to be significant).

¹⁵⁴ An analysis of factors that favour the production of negative clitics has not been undertaken due to time constraints; more research will soon be conducted on this issue.

Table 6.12. *Rbrul findings for the selection of free negative particles.*

deviance	976.586			
DF	7			
grand mean	0.488			
application value	free negative particle			
total (N)	770			
factors	L-O	%	N	CFW
region	(p = 0.239)			
Makassar	-0.23	43.8	480	0.443
Solo	0.23	51.9	290	0.557
	<i>range: 11</i>			
sex	(p = 0.633)			
male	0.082	55.4	354	0.521
female	-0.082	43.3	416	0.479
	<i>range: 4</i>			
age	(p = 0.000569)			
continuous (+1)	Log odds: 0.06			
interrogative status	(p = 0.0288)			
question (direct)	0.240	58.6	58	0.560
question (other)	0.218	63.0	27	0.554
no question	-0.458	47.4	685	0.387
	<i>range: 17</i>			
response status	(p = 6.08 x 10⁶)			
negative interjection	0.871	72.0	75	0.705
answer to a question	-0.250	52.3	107	0.438
neither of the above	-0.621	45.2	588	0.350
	<i>range: 36</i>			

The most significant factor group is response status. Negative interjections strongly predict the use of negative particles with a factor weight of 0.705. Age is the next most significant factor (p = 0.000569), and older signers favour the use of negative particles. The third significant factor is the interrogative status of the negative construction. Both direct questions and other questions slightly favour the use of negative particles.

6.5.2. TIDAK with a mouthed predicate

When the dependent variable **TIDAK with a mouthed predicate** is used as the application value, and the *Rbrul* analysis includes region, age, sex and constructed action, only the latter is found to be significant, with a *p-value* of 0.0016. In other words, region, age and sex are found to be non-significant. The findings are shown in Table 6.13 (overleaf).

Contexts where the utterance of a hearing person is reconstructed favour the use of *TIDAK with mouthed predicate* constructions (0.660); conversely, contexts where the utterance of a deaf person is reconstructed slightly disfavour this paradigm (0.492), and contexts where constructed dialogue does not occur disfavour this kind of construction (0.347).

Table 6.13. *Rbrul findings for the selection of TIDAK with mouthed predicate constructions.*

deviance	677.813			
DF	5			
grand mean	0.173			
application value	<i>TIDAK with mouthed predicates</i>			
total (N)	770			
factors	L-O	%	N	CFW
region	(p = 0.121)			
Makassar	0.295	22.8	290	0.573
Solo	-0.295	14.0	480	0.427
	<i>range: 15</i>			
sex	(p = 0.193)			
male	0.213	17.8	354	0.553
female	-0.213	16.8	416	0.447
	<i>range: 11</i>			
age	(p = 0.425)			
continuous (+1)	Log odds: -0.014			
constructed action	(p = 0.0016)			
reported (hearing)	0.664	37.0	46	0.660
reported (deaf)	-0.032	22.4	116	0.492
not reported	-0.632	14.8	608	0.347
	<i>range: 31</i>			

6.5.3. Negative suppletion

When the dependent variable **negative suppletion** is used as the application value, and the *Rbrul* analysis includes the following factor groups: region, sex, and age, the following findings are shown (see Table 6.14).

Table 6.14. *Rbrul findings for the selection of negative suppletion.*

deviance	664.738			
DF	4			
grand mean	0.175			
application value	negative suppletion			
total (N)	770			
factors	L-O	%	N	CFW
region	(p = 0.0331)			
Makassar	-0.398	14.5	290	0.402
Solo	0.398	19.4	480	0.598
	<i>range: 20</i>			
sex	(p = 0.0807)			
female	0.252	22.4	416	0.563
male	-0.252	11.9	354	0.437
	<i>range: 13</i>			
age	(p = 0.000504)			
continuous (+1)	Log odds: -0.088			

Sex is not found to be significant, but region and age are significant. The Makassar variety disfavours negative suppletion with a factor weight of 0.402, while the Solo variety favours this variant. Age is very significant (p = 0.000504) and older signers disfavour negative suppletion; to the contrary, younger signers favour the selection of negative suppletive variants.

6.5.4. Discussion

Age is found to be highly significant for the selection of negative particles and negative suppletion, but in different ways: older signers favour negative particles, while younger signers favour negative suppletives. This indicates that changes are taking place in the negation system in both varieties: the fact that younger signers disfavour regular negation and favour a type of irregular negation suggests that the negation system is becoming more irregular over time. Region is also a significant predictor of the selection of negative suppletive variants, hence specifically it is younger Solonese signers who are selecting negative suppletives. A similar finding was reported in 5.4.4(ii) for grammatical variation in the domain of completion, and taken together, this constitutes strong evidence that younger Solonese signers are adopting new grammatical variants. Conversely, neither region nor age are significant for *TIDAK with mouthed predicate* constructions, suggesting that this variant is diachronically stable. What, then, could account for variation in the selection of the *TIDAK with mouthed predicate* paradigm?

In 6.4(iii) it is noted that the basic clause negator is favoured by constructed dialogue, and in 6.5.2 it is reported that contexts where the utterance of a hearing person is reconstructed favour the selection of *TIDAK with mouthed predicate* constructions. This appears to be linked to the origins of *TIDAK* in co-speech gestures. Consider the following example from the Solonese data, which presents 10 successive contexts in a stretch of narrative where a signer selects a paradigmatic variant to negate the predicate *BISA* ('can'). The signer's narrative features constructed dialogue: eight tokens occur in contexts where she reconstructs utterances that she has previously produced (shown in the column on the left of Figure 6.24), and two tokens occur in contexts where the signer reconstructs utterances that were produced by her hearing sibling (shown in the column on the right). During this stretch of data, two paradigmatic variants are used – the negative suppletive (*TIDAK-BISA*), and *TIDAK* with a mouthed predicate construction (*TIDAK/^{bisa}*) – and the patterning of these variants can be seen in Figure 6.25.

the signer	her sibling
TIDAK-BISA	
TIDAK-BISA	
TIDAK-BISA	
TIDAK-BISA	
TIDAK-BISA	
TIDAK-BISA	
	TIDAK/ ^{bisa}
TIDAK-BISA	
	TIDAK/ ^{bisa}
TIDAK-BISA	

Figure 6.25. Paradigmatic variants selected in 10 contexts where the predicate *BISA* is negated.

For all tokens where the signer reconstructs her own previous utterances, she selects a negative suppletive variant. For the two tokens where she reconstructs her hearing sibling's utterances, she

selects the *TIDAK with mouthed predicate* variant. This could simply be a coincidence were it not that the signer returns to her own suppletive variant both between and after reporting the two utterances of her sibling.

It seems very likely that the hearing status of the person whose utterance is being reconstructed is affecting the realisation of the variable, and there are two possible explanations for this. First, since the signer is likely familiar with the co-speech gestures that her sibling uses, she could be using this knowledge to reconstruct the utterance as it would occur, perhaps as a stylistic device to shape her narrative and sharpen the distinction between the two parties involved in the dialogue that is being reported.¹⁵⁵ Secondly, the utterances of the sibling might be reconstructed based on the exact utterance that the sibling used, based on the signer's episodic memory.¹⁵⁶ In any case, of all the paradigmatic variants, *TIDAK with mouthed predicate* constructions is closest to the gestural origins of TIDAK shown in (103). This seems to be the most promising explanation for the finding that contexts where a hearing person's utterance is reconstructed favour the *TIDAK with mouthed predicate* variant.

Negative interjections and negative interrogatives favour the use of negative particles. In 6.4(iii) it is noted that the basic clause negator is the go-to sign when signers need to make an immediate challenge to what has been asserted by an interlocutor; as one of the negative particles in the analysis in 6.5.1, this explains the role of negative interjections. Negative questions are also found to favour the use of particles. This could be due to the use of the predicate-TIDAK ordering, described in 6.2.1(i), to form interrogative constructions. TIDAK is not the only particle that may occur in a clause-final position in order to form an interrogative: another particle, TIDAK-ADA, also occurs in the Solonese data to form questions of the type 'Has X happened or not yet?' (See section 5.1.3(ii) for more details of this kind of construction.)

Finally, it should be remembered that, even though it was not possible to include it as a factor in the quantitative analysis, the predicate that is being negated appears to have notable consequences on the paradigmatic variants that are available, as is evident from Figure 6.24. Indeed, the predicate that is being negated may even prove to be a linguistic constraint (see the discussion in 6.1.5). It is important to try and establish this in future by analysing more tokens, through the introspection of language users, or through the inclusion of lexical effects in the quantitative analysis, as explained in the introduction to section 6.5.

¹⁵⁵ In much the same way, a speaker from the North of England might reconstruct the accent of a speaker from the South of England when reporting a previous conversation to a Northern friend.

¹⁵⁶ It has been commented elsewhere in the literature that sign language users tend to have a strong episodic memory (Sahasrabudhe, 2010:84).

6.6. Syntactic variation

In the examples shown throughout section 6.2, it can be seen that paradigmatic variants differ in the syntactic slots that they occupy. I refer to this as syntagmatic variation, because the entire negative construction moves horizontally relative to the main predicate. To take a hypothetical example, consider the following two variants with the meaning ‘I do not want’, where the predicate MAU (‘want’) is negated with the particle TIDAK:

- | | | | |
|-----|------|--------------------------|----------------|
| | (i) | PT:PRO1 <u>TIDAK</u> MAU | pre-predicate |
| and | (ii) | PT:PRO1 MAU <u>TIDAK</u> | post-predicate |

Both variants, (i) and (ii), are considered to be syntactic, rather than syntagmatic. However, it is also possible for (i) and (ii) to contain an additional predicate, such as MAKAN (‘eat’). The following variants mean ‘I do not want to eat’ (the generic gloss (not want) indicates a negative structure such as (i), (ii), or a different paradigmatic variant such as TIDAK^{/mau}):

- | | | | |
|--|-------|-----------------------------------|----------------|
| | (iii) | PT:PRO1 (<u>not want</u>) MAKAN | pre-predicate |
| | (iv) | PT:PRO1 MAKAN (<u>not want</u>) | post-predicate |

Examples (iii) and (iv) are considered to be syntagmatic (not syntactic) variants, because (not want) is a paradigmatic variant that moves horizontally relative to the main predicate MAKAN (see Figure 6.1). Certain negative tokens have been coded for the syntagm of variation; that is, for the syntactic slot that the negative particle, or negative paradigm, occupies relative to the main predicate. Only tokens where negative marking is sequential have been included; paradigms where negative marking is coextensive with a predicate, for example TIDAK with mouthed predicate constructions, are disregarded (n = 431). Accordingly, (i) and (iii) are pre-predicate, and (ii) and (iv) are post-predicate. The distribution of this variable is as follows: 24.1% of tokens occur in a pre-predicate position, and 75.9% occur in a post-predicate or clause-final position.

i) Motivation and dependent variables

As can be seen above, negative constructions vary in syntactic complexity, from clauses with only a predicate and a sequential manual negative (104, 109) to those where negation occurs simultaneously, sometimes in a sequence with other predicates (151, 152). Because of this, the remainder of 6.6 is concerned only with syntactic variation (as in examples (i) and (ii)), rather than syntagmatic variation (examples (iii) and (iv)). This is accomplished by excluding complex contexts from the analysis, and including only contexts where a negative particle occurs with a single predicate, as in (157) and (158).

- | | | | |
|-------|-------------------------|--------------------|-------------|
| (157) | TIDAK | KAWIN | <i>Solo</i> |
| | NEG | marry | |
| | ‘They are not married.’ | | |
| (158) | PT:PRO2 | SABAR=TIDAK | <i>Solo</i> |
| | PRO2 | patient=NEG | |
| | ‘You are not patient!’ | | |

This leaves 238 tokens for analysis; these are coded as occupying either a pre-predicate slot (157) or a post-predicate slot (158). Hence the two dependent variables are **pre-predicate negation** and **post-predicate negation**, the latter of which is used in the quantitative analysis as the application value.

ii) Independent variables and *Rbrul* findings

For the independent linguistic variables, predicate type, interrogative status and headshake are included in the analysis on the basis that these might be significant, but this proves not to be the case. Of the social factors, region and sex are statistically significant. The *Rbrul* findings are shown in Table 6.15.

Table 6.15. *Rbrul* findings for the selection of the post-predicate slot for negative particles.

deviance	222.369			
DF	4			
grand mean	0.761			
application value	post-predicate slot (pred-NEG)			
total (N)	238			
factors	L-O	%	N	CFW
region	(p = 0.0436)			
Makassar	0.668	87.6	89	0.661
Solo	-0.668	69.1	149	0.339
	<i>range: 32</i>			
sex	(p = 0.0222)			
male	0.634	86.9	122	0.653
female	-0.634	64.7	116	0.347
	<i>range: 31</i>			
age	(p = 0.194)			
continuous (+1)	Log odds: 0.036			
predicate type	(p = 0.22)			
not a lexical predicate	0.630	89.2	37	0.653
active	0.008	79.4	63	0.502
nominal	-0.194	77.1	35	0.452
stative/adjectival	-0.445	68.9	103	0.391
	<i>range: 26</i>			
interrogative status	(p = 0.195)			
question (direct)	0.307	83.3	30	0.576
question (other)	0.258	85.7	14	0.564
no question	-0.565	74.2	194	0.362
	<i>range: 21</i>			
headshake	(p = 0.239)			
no headshake	0.212	77.7	184	0.553
headshake	-0.212	70.4	54	0.447
	<i>range: 11</i>			

Signers in Makassar are more likely to place the negative particle in a post-predicate slot, while signers in Solo are less likely to do this. For the first time in this investigation of the analysis of factors that predict the realisation of negative variables, sex is found to be significant. Sex is slightly more significant statistically ($p=0.0213$) than region ($p=0.0391$), although the range is similar for both factors (34 and 36 respectively). These findings suggest that female signers are more likely to produce a NEG-predicate order, as are Solonese signers.

iii) Discussion

Given that most of the negators included in this analysis are tokens of the basic clause negator TIDAK, and that predicate type is not found to be significant, it seems that the tendency of the basic clause negator to occur after verbal predicates but before non-verbal predicates, reported by Bergman for STS (6.3.2), does not hold true for these varieties.

Age is not a significant factor in predicting the syntactic slot of the negative particle, which means that the syntax of simple negative clauses seems to be diachronically stable. However, the finding that female signers exhibit a significant divergence from male signers in the order of the negative particle relative to the predicate is intriguing, since it accords with a clear and consistent sociolinguistic principle, namely that women 'are more sensitive than men to the prestige pattern' (Labov, 1972:243). This principle has been observed repeatedly in the literature on spoken languages (Wolfram & Fasold, 1974:93; Cameron & Coates, 1988:13; Labov, 1990:205; Cheshire 2002:430).

For sign languages, Lucas et al. (2001) find that female signers favour the expression of the subject pronoun, while male signers are more likely to drop this pronoun. They offer two possible explanations, one of which is that women may

produce more pronouns than men because overt pronouns represent a prestige variant... ASL has made great strides in the last 35 years in gaining recognition as a natural human language. Nevertheless, English, which is not a pro-drop language, enjoys a certain prestige in the Deaf community, in recognition of the fact that access to power and resources is still very restricted for people who do not have a working command of English (Lucas et al., 2001:172).

The 'great strides' reported for ASL have not yet been made in Indonesia, and prestige is even more tied up with Standard Indonesian (see section 1.4.2). It seems likely that female signers in the Corpus may therefore be more likely to place the negative in a pre-predicate slot due to the prestige associated with this order.

That Makassarese signers are less likely to prefer a negative-predicate order, compared to Solonese signers, is possibly a reflection of the relative influence of Indonesian and/or SIBI. In this area, as in others, Makassarese signers in the CISLV appear to be less susceptible to influence from other languages. For example, when using fingerspelling, Makassarese signers seem to be more attached to their indigenous manual alphabet, while several Solonese signers use a mixture of forms from the indigenous manual alphabet and from SIBI (see 4.4.1).

6.7. Headshake variation

i) Motivation and dependent variables

In section 6.2.5 it is noted that 194 out of 804 tokens feature the presence of headshake. All 804 negative tokens are included in the quantitative analysis presented in section 6.7, and the

dependent variables for this analysis are **headshake presence** and **headshake absence**. Headshake presence is used as the application value.

ii) Independent variables and Rbrul findings

All three social factors were initially included in the quantitative analysis, but none of these factors are significant. The best *Rbrul* run includes three linguistic factors: the type of negation, the function of negation, and the predicate type. All three are found to be significant. The results of this run are shown in Table 6.16.

Function is the most significant factor ($p=0.00044$) followed by the type of negation and the predicate type. Based on effect size (range) alone, the constraint hierarchy for this variable is as follows:

function > type of negation > predicate type

In terms of function, modal negatives favour headshake presence, (0.680), followed closely by basic clause negation (0.676). Conversely, negative completive/adverbial and negative existential/possessive functions disfavour headshake presence, and the imperative function strongly disprefers headshake presence with a factor weight of 0.261. Regular negation prefers headshakes (0.588) and irregular negation does not. For predicate type, active predicates favour headshake presence (0.602), while nominal predicates disfavour headshake presence (0.430), and stative/adjectival predicates strongly disfavour headshakes with a factor weight of 0.377.

Table 6.16. *Rbrul findings for the selection of headshake.*

deviance	755.191			
DF	10			
grand mean	0.245			
application value	headshake presence			
total (N)	804			
factors	L-O	%	N	CFW
type of negation	(p = 0.00201)			
regular	0.354	29.2	544	0.588
irregular	-0.354	19.6	260	0.412
	<i>range: 18</i>			
function	(p = 0.00044)			
modal negative	0.752	34.9	129	0.680
basic clause negation	0.737	27.2	400	0.676
negative completive/adverbial	-0.193	23.4	145	0.452
negative existential/possessive	-0.256	20.0	85	0.436
imperative	-1.040	11.1	45	0.261
	<i>range: 42</i>			
predicate type	(p = 0.0112)			
active	0.412	33.3	75	0.602
not a lexical predicate	0.375	27.8	467	0.593
nominal	-0.283	27.5	40	0.430
stative/adjectival	-0.504	19.8	222	0.377
	<i>range: 23</i>			

iii) Discussion

The dispreference of constructions that express a negative imperative function for headshake can be explained in terms of the role of other non-manual features. In section 6.2.1(i) it is noted that the expression of negative imperative function is often accompanied by a particular facial expression. The absence of headshake is an important prerequisite for making eye contact and conveying the force of this expression.

That basic clause negation favours headshake complements the finding that regular negation favours headshake. This suggests that, although negation is not commonly expressed through headshake alone (6.2.5), there is an association between headshake and the basic clause negator. However, the reasons why the expression of negative modal function favours headshake is not yet clear.

Predicate type plays a significant role in the selection of headshake, and this is borne out by qualitative analysis. For example, the signer who keeps his head still and makes eye contact in the example in Figure 6.9 is negating a stative predicate (TAHU, 'know'). Although the reasons for this pattern are not clear, it is notable that while active predicates favour headshakes, it is stative and adjectival predicates that disfavour headshake presence. This may be because, while active predicates are dynamic, stative/adjectival predicates are not (Lyons, 1977:706); it is possible that the dynamic movement of headshakes is suited to the dynamicity of active predicates, and ill-suited to stative/adjectival predicates. Equally, however, there may be other factors involved in the determination of these trends that have not yet emerged.

Finally, the fact that the social factors of age, gender and region are not found to be significant predictors of headshake presence suggests that headshake is relatively stable between and within each variety. However, variation between individuals appears to be important. For example, of 11 informants who each produce between one and 23 tokens of negation in the CISLV – a total of 120 tokens – none produce headshake. Therefore further research is needed on the role of the individual as a factor in headshake presence. The possibility that other sociolinguistic phenomena such as mirroring may play a role has also been raised in section 6.2.5, and warrants further investigation.

6.8. Chapter summary

When comparing the expression of negation in Solo and Makassar, it is striking that the four most frequent types of negation in the CISLV – negative particles, negative clitics, *TIDAK with mouthed predicate* constructions, and negative suppletives – all occur in both varieties (6.2). Each of these types contain forms that are common to Solo and Makassar, including the particles TIDAK, PALM-UP and NOL; as well as the suppletive forms TIDAK-BISA ('cannot'), TIDAK-PERNAH ('never') and TIDAK-MENGERTI ('not understand'). Furthermore, the inventory of negative

clitics is the same for both varieties, and the hosts to which these clitics are bound are also similar: TAHU ('know'), UANG ('money'), LIHAT ('see') and so on. Additionally, the mapping of form and function is as complex in the Makassar variety as it is in Solo. For example, TIDAK performs a multiplicity of similar functions and sub-functions for each variety, as shown in section 6.2.1.

There are a few notable differences between the varieties. Solo appears to have a larger set of negative signs than Makassar, particularly in the range of suppletive forms (Table 6.9). While the negative suffix and handshape substitution described in 6.2.6 occurs in the Solo variety, I have not observed these phenomena in Makassar, and further research on the corpus data is needed to confirm this. There are also differences in the expression of negative completion and existence/possession. The distributions presented in Table 6.4 (section 6.2.1(iv)) show that the functional load of TIDAK appears to be lessening in Solo, compared to Makassar, with other forms – notably TIDAK-ADA – used more frequently to denote negative completion or existence/possession. In the Solo variety the split is not absolute, however, and variation persists in terms of how these functions are realised. Table 6.17 shows the distribution of these forms.¹⁵⁷

Table 6.17. *The formal expression of negative completion and negative existence/possession in Solo and Makassar.*

	negative existence/poss.		negative completion	
	Makassar	Solo	Makassar	Solo
TIDAK	12	5	25	14
TIDAK-ADA	–	44	–	53
TIDAK ADA/PUNYA	–	6	–	–
BELUM:sibi	–	–	–	10
	12	55	25	77

It seems likely that negative completion and existence/possession were originally expressed in Solo using only the basic clause negator, as continues to be the case in Makassar, but a larger sample is needed in order to test for a correlation between the age of Solonese signers and the use of the variant TIDAK-ADA. If these findings show that TIDAK-ADA is the more recent variant for negative existence/possession and completion in the Solo variety, this will confirm that layering is in progress, whereby new forms emerge alongside older ones to perform the same function (Hopper, 1991:22). The question of why TIDAK-ADA has come to signify both a negative existential/ possessive function and a negative completive function would then need to be considered, since it appears to be cross-linguistically unusual for one form to express both.

The form TIDAK-ADA is a curious one for another reason too: existence/possession is negated irregularly in this form, rather than by regular means. Consequently, it is regarded as a negative suppletive, even though there are a small number of instances in the data where signers *do* negate

¹⁵⁷ Since the purpose of Table 6.17 is to contrast the use of TIDAK with TIDAK-ADA and other variants, cliticised forms of these particles are combined with their corresponding free forms.

the existential/possessive regularly, as TIDAK ADA (see the discussion in 6.2.4(ii) and Table 6.17). As explained in 6.2.4, the situation where negative suppletive variants occur alongside regular grammatical variants *for the same predicate* is unattested in the literature on sign languages, and the case is made in this chapter for broadening the way in which negative suppletion is defined in order to allow for forms such as TIDAK-ADA to be categorised as suppletive. Semantic and morphosyntactic tests are applied in 6.2.4 to verify the status of these variants as suppletives, as opposed to lexical negatives. Although some suppletives appear to be particular to each variety, five of the 10 suppletives in Table 6.9 occur in Makassar and Solo. The fact that this irregular paradigmatic variant is common to both varieties – along with negative clitics and *TIDAK with mouthed predicate* constructions – is an important indicator of typological similarity.

The emergence of these classes of irregular negatives alongside regular negation by use of the basic clause negator is discussed further in 7.3, in light of the finding that both language varieties appear to be becoming more irregular (6.5.4). The class of *TIDAK with mouthed predicate* constructions seems to be cross-linguistically unusual – I am unaware of any other sign language for which the mouthing of a predicate simultaneously with a basic clause negator has been attested as a frequently-occurring grammatical variant. However, this strategy is not unusual when compared with other examples in the data where signers creatively isolate the function of manual and non-manual articulators in order to signify two or more discrete referents simultaneously. One example of this from a grammatical domain was reported in 5.2.3 – in particular, see example (57). Other examples of this kind of simultaneity, where mouthings add specific lexical meanings that do not occur elsewhere in the utterance, include (159), where *jagung* (‘corn’) occurs with BAKAR (‘roast’) to mean ‘roast corn’; and (160), where *ibu* (‘mother’) is co-extensive with DATANG (‘see’), generating the meaning ‘my mother came’.

(159)	<u>lain</u>		<u>jagung</u>	<u>lain</u>	<u>mengapa</u>	<i>Solo</i>
	LAIN	DUA	BAKAR	LAIN	MENGAPA	
	other	two	roast	other	why	
					‘...as well as that, he also sold roast corn. Why did he do these things?’	

(160)	<u>ibu</u>	<i>Makassar</i>
	DATANG	
	come	
	‘My mother came.’	

There is an ongoing debate in the literature concerning the status of mouthings in sign languages. Hohenberger and Happ (2001) contend that mouthings belong to a theory of performance, rather than a theory of competence: in their opinion, mouthings are not an integral part of sign languages in general and DGS in particular (ibid.:153). Of particular relevance here is their contention that ‘functional categories... typically resist mouthings’ (Hohenberger & Happ, 2001:165). Ebbinghaus and Hessmann (1996, 2001) take the opposite view, that mouthings are not

coincidental to sign languages but that manual signs, mouthings and other non-manual elements all contribute to the meaning of the utterance in DGS. In light of this debate, the findings in chapters 5 and 6 pertaining to mouthings are remarkable. First, it is clear from the corpus data that completion may be expressed by mouthings in both the Solo and Makassar varieties (5.2.3). The ability of mouthings to express the functional category of completion stands against Hohenberger and Happ's contention. Further, *TIDAK with mouthed predicate* constructions rely upon mouthing in order to convey which predicate is being negated. As noted in 6.2.3, this kind of negation is asymmetric, and mouthing is in no way redundant in this type of construction, since without it a key piece of information is lost and utterances such as (136) and (137) become meaningless. These findings indicate that, for Indonesian sign language varieties at least, mouthings have evolved beyond a tangential status as a by-product of language contact, and have become a fundamental part of linguistic organisation.

Following the quantitative analysis presented in chapter 6, the factors found to favour the realisation of the four negative variables are shown in Table 6.18.

Table 6.18. A summary of factors that favour the realisation of negative variables.

variable and application value	factors found to be statistically significant in predicting the realisation of the variable
(6.4) Basic clause negation	
<ul style="list-style-type: none"> • basic clause negator 	predicate type > response status > constructed dialogue > region > headshake presence > syntagm of negation
(6.5) Paradigmatic variation	
<ul style="list-style-type: none"> • particle • <i>TIDAK with mouthed predicates</i> • negative suppletion 	response status, age, interrogative status constructed dialogue age, region } predicate*
(6.6) Syntactic variation	
<ul style="list-style-type: none"> • post-predicate slot 	sex, region
(6.7) Headshake variation	
<ul style="list-style-type: none"> • headshake presence 	function > type of negation > predicate type

Not all variables appear to be influenced by social factors. For example, headshake presence is not favoured by the region, age or sex of the signer. However, the syntactic variable is clearly a sociolinguistic one, and two of the three paradigmatic variants included in quantitative analysis also correlate with social factors, suggesting that the paradigmatic variable is also sociolinguistic. Needless to say, further investigation in these and other sign language varieties is required before a better understanding of such factors can be reached. Additional methodological innovation is necessary in order to establish the role of the predicate in predicting the choice of variant. As explained in section 6.5, there appears to be a strong correlation, and some predicates have a clear

preference for certain paradigmatic variants (see Figure 6.24), but this has not yet been tested through multivariate analysis.

In section 5.6 it is noted that sociohistorical developments can help to explain similarities in the expression of completion in the two sign language varieties, and the same is true for negation. However, while the correspondence of grammatical categories is undoubtedly due in part to contact between sub-communities of signers, there are other contributory factors. In 6.2.1 it was noted that TIDAK has emerged from a negative gesture used by hearing people in both Solo and Makassar. Even if it is that TIDAK has spread through language contact, its occurrence in the co-speech gestures of hearing people in each location is still significant. Further, formal elements of all negative particles described in 6.2.1 occur in other sign languages described by Zeshan (2004), which underlines the universal role of iconicity as a motivation for these signs. Again, even if these particles have become diffused by means of language contact, iconicity is undoubtedly a key factor in explaining similarities.

The contact that both sub-communities have had with the Indonesian spoken language has led to similar mouthings in the negative constructions of both varieties, and may also influence the behaviour of certain kinds of special negatives, including the cultural use of negative completion (5.1.3(ii)). Contact with SIBI – described in 4.4.1 – may also be a source of convergence: while BELUM:sibi does not occur in the Makassar dataset (see Table 6.17), it occurs 10 times for Solo, and this will contribute towards similarities between Solo and other varieties that *have* been influenced by SIBI. Finally, the differences between the two varieties, noted above, are reminders of the continuous impact of the vast distances that stand between some of the sub-communities. Geographical isolation impedes communication and restricts convergence (Siebenhaar, 2010:250), promoting linguistic innovation and maintaining heterogeneity. These and other factors that favour and disfavour convergence are discussed further in section 7.2.

As for future research, the analysis of more tokens of grammatical negation is highly desirable, in part because lists of mouthed predicates that occur with TIDAK (6.2.3) and negative suppletives (Table 6.9) are not necessarily complete. For example, most of the mouthed predicates in Table 6.7 occur only once. While the general use of these forms was confirmed by research consultants, it will be possible to make a stronger case once a larger number of tokens is analysed. Even with those predicates identified so far, however, there appear to be frequency effects at play. The set of predicates that participate in several irregular strategies are very similar (see comments in 6.2.3 and Zeshan, 2004:50), and the importance of frequency effects is considered further in section 7.3. More generally, the notion of paradigmatic variation – whereby attention is paid to the various ways in which the same predicate may be negated – has turned out to be a useful one, and this notion may offer new ways of looking at variation both in other grammatical domains and for other sign language varieties.

One final point to consider is the relevance of findings on headshake for our understanding of grammaticalisation processes. As noted in 6.2.5, only 2.0% of tokens appear to use headshake *alone* to express negation, and these varieties are therefore best typified as having a manual dominant negation system. However, the finding that headshake occurs in a further 24.1% of tokens, alongside other negative elements, may have implications for future development. Pfau and Steinbach (2013:43) propose that different types of systems ‘might reflect different stages in the diachronic development of negation systems’, as with some spoken languages. They further suggest that the gestural head movements that occur with negative utterances may over time be reanalysed as a ‘lexical non-manual component’ of the manual negator (ibid.:52). It would be most interesting to trace the role of headshakes over time, to see if such a reanalysis actually occurs. From the data on negative constructions discussed in chapter 6, it seems that synchronic differences between varieties may provide evidence of diachronic variation – see the discussion of layering at the beginning of this section – and once data from other Indonesian sign language varieties have been analysed, it may be that similar differences can be seen in headshake behaviour.

In chapter 6, the domain of negation has been the target of typological and sociolinguistic analysis. Having documented lexical and morphosyntactic variants in detail (6.2), and coded the data (6.3), several linguistic and social factors are found to affect the realisation of a range of variables (6.4–6.7), including the age and sex of the signer, and the region where the variety is used (Solo or Makassar). Younger signers in Solo appear to be using variant forms of negatives that are more irregular and morphologically complex, and this matches the finding in section 5.4.5 that younger Solonese signers in the data favour completive clitics.

In the concluding chapter, the findings of chapters 5 and 6 are brought together in several ways. Firstly, I consider how completive and negative variants become diffused across the Indonesian sign community (section 7.1). Secondly, given the complex array of similarities and differences between Solonese and Makassarese varieties in both domains, the factors that favour and disfavour the convergence of Indonesian varieties are discussed (7.2). This includes the implications of completive mouthings (5.2.3) and the gestural origins of negative particles (6.2.1), as well as the potential social/accommodative functions that variants may carry (5.5). Finally, directions for future research on sign languages are identified, based on the investigation of the two grammatical domains (7.3). For example, if completive and negative forms are indeed increasing in morphological complexity (cliticisation) and irregularity (suppletion) over time – as suggested in 5.6 and earlier in this section – might the relative complexity of social networks have a role to play in these changes?

CHAPTER 7

CONCLUSION.

In the concluding chapter, Indonesian sign language varieties are considered more broadly in terms of their significance for academics – including (socio)linguists who study sign languages and spoken languages – and for the sign community in Indonesia. Having covered findings for individual chapters elsewhere (see sections 4.5, 5.6 and 6.8), the aim here is to synthesise these findings and draw conclusions pertaining to overarching issues. In particular, through a discussion of social networks (7.1) and the factors that favour and disfavour the convergence of sign language varieties (7.2), I seek to address the question of how the history of contact between urban sub-communities of signers can help to explain the patterns observed (RQ3). The broader significance of findings from multivariate analysis is considered, as well as the need for methodological innovation in the field of sign language sociolinguistics (7.3). Gaps that are covered as a result of this research are highlighted, alongside ideas for future study that have emerged during the course of the project.

The key findings of this investigation are as follows. Historic links have been identified between sub-communities of sign language users across the archipelago, comprising an extensive network through which sign language has been transmitted and variants diffused. The grammatical domains of completion and negation are both beset by forms that exhibit complex multifunctionality, and have revealed considerable lexical and grammatical variation, but this variation rarely patterns according to urban centre. Rather, both the Solo and the Makassar varieties are typified by extensive intra-urban variation. Linguistically, the patterns of variation found across the archipelago appear to be highly complex, and this can be explained by a range of linguistic and social factors that are acting simultaneously. Some factors exert a converging force, while other factors have an opposite effect, resulting in the continuation of linguistic heterogeneity. The findings of multivariate analysis suggest that the domains of completion and negation are becoming more irregular over time, with forms increasing in morphological complexity (cliticisation) and irregularity (suppletion), and the corpus data indicate that this change is being led by younger Solonese signers.

Finally, this investigation presents a methodological challenge to sign language sociolinguists who continue to use lexicostatistical methods devised in the 1950s. It is shown that rapid wordlist elicitation and lexicostatistics motivated by language delineation cannot cope with the complexity of linguistic and sociolinguistic variation in Indonesia, and is of little value for sign communities. Practitioners in the field of sign language sociolinguistics are urged to embrace conceptual frameworks and analytic practices developed by spoken language sociolinguists over the past 50 years, and to implement these frameworks and practices with the active and ongoing participation

of the sign community, in line with the continuous engagement model (Dikyuva et al., 2012; Dikyuva, 2013).

The general picture of sign language variation in Indonesia is highly complex. At the outset, it must be reiterated that references to ‘the Solo variety’ and ‘the Makassar variety’ are pragmatic labels referring to the language used in each urban centre (2.1). Indeed, these varieties are typified by so much internal variation that they do not qualify as ‘language varieties’ according to some of the definitions proposed in the literature. For example, Lenz describes a ‘variety’ as

a subsystem of a language characterized by internal linguistic cohesion, clear system boundaries (separating it from other varieties), well-defined pragmatic functions and an emic status (Lenz, 2010:296).

Were such a stringent definition of ‘variety’ to be adopted, the ‘Solo variety’ and the ‘Makassar variety’ would fail to meet it. While they have clear geographical boundaries and pragmatic functions, the internal linguistic cohesion of these varieties is questionable, and they are not necessarily considered as distinct varieties by their users – although ‘emic’ perspectives are in much need of research (see sections 2.4 and 7.4).

7.1. Social networks and the diffusion of variants

The finding that the Solo and Makassar varieties exhibit considerable lexical and grammatical variation in the domains of completion and negation accords with findings from the semantic domains of numerals and colour terms. For numerals, it is found that:

Strategies for creating larger numbers do not pattern regionally, and there is more variation within urban centres than between them. Analysis of data from different cities shows that some lexical sets are common to several cities, even on different islands... Conversely, five different lexical sets have been found in a single urban centre (Palfreyman, forthcoming:35).

How can these patterns be accounted for? In section 2.4.3 the concept of the social network was introduced, and it has been shown that the Indonesian sign community comprises a web of connections, a complex social network of language users that stretches across the archipelago (section 4.6). On further examination, it seems that members of urban sign language communities belong to a different kind of social network compared with typical spoken language communities, and that this is profoundly significant for the diffusion of sign language variants. There is of course no such thing as a ‘typical spoken language community’, but users of spoken languages tend to live in close proximity (families, neighbourhoods etc.) and most do not have to travel to find other speakers with whom they can converse. They therefore inhabit networks that are densely distributed geographically, as represented in Figure 7.1. By comparison, sign language users are often born into hearing families (section 1.3) and, in Indonesia at least, hearing family members are not usually proficient in sign language. This means that sign language users seek each other out, and may often travel to do so. In this way, sub-communities of signers in Indonesia comprise a network typified by a *sparse* geographical distribution (Figure 7.2).

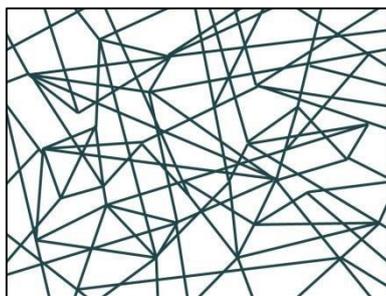


Figure 7.1. The dense geographical distribution of many spoken language communities.

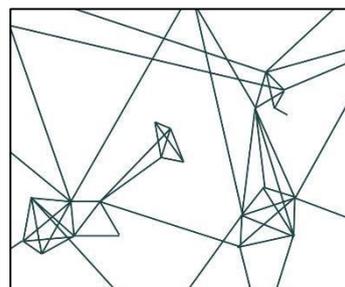


Figure 7.2. The sparse geographical distribution of sign language sub-communities in Indonesia (based on findings in chapter 4).

The nature of social networks of signers therefore seems to offer a useful explanation for complex patterns of sign language variation. The two most important facets are (i) the network as a means for the transmission of sign language and the diffusion of variants, and (ii) the relative isolation of sign communities, which restricts communication and promotes local linguistic innovation. I have described this pattern elsewhere when accounting for the diffusion of a variant strategy used to create large numerals, referred to as the ‘mata’ strategy:

sign language is used in deaf schools and cities that are isolated enough to stimulate local innovation and resist levelling, but in enough contact to enable the dispersion of lexical sets of variants between sub-communities... The distribution of the ‘mata’ strategy across several islands... points towards language contact, and perhaps a common origin, possibly in one of the deaf schools founded in Java. It is... likely that the strategy diffused as a simple iconic principle... and diversified locally (Palfreyman, forthcoming:24).

The impact of networks of sub-communities with a sparse geographical distribution on the spread of variants has been noted for other stigmatised groups of language users too. The lesbian, bisexual, gay and transgender (LBGT) community inhabits a network typified by the sparse geographical distribution of its sub-communities. The network of LBGT sub-communities across Indonesia fosters linguistic innovation, exemplified by the *ludling* – a secret language or argot that is used by the transgender community in Papuan Malay (Gil, 2013). The *spread* of linguistic innovations through a national LBGT network in Indonesia has been noted by Boellstorff (2004), whose research on *bahasa gay*, a linguistic phenomenon that uses derivational processes and word substitution, suggests that, although there are ‘local variations’, *bahasa gay* is ‘a self-consciously nationwide way of speaking’, and

all of the derivational patterns used to produce *bahasa gay* lexemes originated in one region of Indonesia but became nationally distributed through *gay* social networks (Boellstorff, 2004:253).

The nature of social networks of Indonesian sign language users has important consequences for sign language variation and the diffusion of variants over time. Many lexical and grammatical variants may be used in a given urban centre because of the different contact that its signers have had with other sign communities. For urban centres in Indonesia, it often seems that there is no

‘norm’, and it is not always possible to identify any one variant that is ‘typical’ of that centre (Palfreyman, forthcoming:9). For example, the semantic domain of colour terms exhibits

considerable diversity in the constellations of variants that constitute the active and passive lexicons of sign language users, regardless of how large the pool of variants is in the city where they live (Palfreyman, forthcoming:15).

This kind of variation seems to be more akin to what is found in language contact situations for spoken languages. In section 1.4 the notion of ‘feature pools’ was briefly introduced, a notion that seems particularly apposite for understanding sign language variation in Indonesia. Lim describes speakers of Singapore English as

making selections from a pool of linguistic variants available to them in a contact setting that consists of the sum total of the individual forms and variants that each of the speakers involved, with different language backgrounds and varying linguistic experiences, brings into the contact situation (Lim, 2011:99).

In the second part of her description, Lim refers to the choice of variants from these feature pools as ‘stable elements of the newly emerging variety’, and it seems that this process is still in progress for sign language varieties. If stable elements are still emerging, this may help to explain the lack of internal cohesion within each sign language variety.

Spoken language variables that pattern regionally across geographically dense networks can be represented as isoglosses (see for example Chambers & Trudgill, 1998 on dialects of English). In the Iberian peninsula, speakers are similarly densely distributed geographically, and an isogloss can be used to mark the region where the diphthong [éi] is used in the suffix *-eiro*, in contrast to the region where the corresponding suffix is pronounced [é] (Penny, 2004:58). Furthermore, isoglosses for spoken languages may move over time – although this is not a given – and the [éi]/[é] isogloss is thought to be receding towards the northwest (ibid.). It has been said that, over time, such language change resembles a wave, as the change is actuated and spreads across densely distributed networks in towns and villages (Pulgram, 1972).

Conversely, the distribution of sign language users in Indonesia seems to preclude the possibility of analysing features using isoglosses. Signers are not distributed evenly, and transmission patterns limit the possibility of orderly continuity, so the patterning of variants tends to seem much more chaotic. Zeshan (2000b:42) observes a similar situation for sign language varieties in India and Pakistan:

The combination of regional variants in constellations that are different in each case [i.e. for each sign/concept] is characteristic of the lexical comparisons overall. This means that there is no evidence of regional dialects at a larger scale, such as a differentiation of the sign language in terms of a southern and a northern dialect (Zeshan, 2000b:42; her translation).

The kind of complex variation identified in this thesis is not in fact out of keeping with most of the world’s languages, whether signed or spoken.

As Stanford and Preston (2009:8) note:

unlike studies of relatively homogeneous speech communities, many indigenous languages exist in situations of extensive multidialectal or multilingual contact with ambiguous boundaries and no established single standard for the researcher to use as a reference point.

The absence of discernible isoglosses for variation across urban sign language varieties in Indonesia has implications for explaining convergence, and is discussed further in section 7.2.

As a result of exposure to a wide range of variants associated with feature pools, many sign language users are multidialectal (see sections 4.2.4 and 4.3.3), and appear to have a high level of sociolinguistic competence. Signers seem to develop a level of such competence that matches their needs, and the complex nature of variation requires signers to hone their communication skills daily. It has been shown in chapter 4 that signers who travel to new areas use mouthings to make themselves understood, acquire local signs, and where necessary ask interlocutors to sign more slowly so that they understand. In reality, however, once they have settled, signers tend to stay in the same friendship groups and socialise in the same way. Although it has not yet been demonstrated by research, it seems that local networks form their own norms, and those who belong to more than one network – the deaf school, the football team, the deaf organisation – automatically adjust to meet the norms of each network. Research in this area, applying a social network framework to an urban centre such as Solo, would greatly enlighten our understanding of how variation plays out at the interactional level.¹⁵⁸

One final point must be made, relating to the ease with which variants are dispersed and adopted. The reason that variants are able to be shared so easily is not only because of the networks through which they spread, but also because of the typological similarity among varieties. This point has been made several times in the literature on spoken languages in Southeast Asia. For example, Lim (2011:100) refers to surface similarities and the typological degrees of relatedness between the languages involved as important factors in the emergence of contact-induced varieties, while Klammer (2002:378) notes that ‘the typological distance between the source language and the recipient language’ is a linguistic predictor of contact-induced language change among Austronesian languages in Central and Eastern Indonesia:

even features that are highly marked or highly integrated are readily exchanged between languages that are typologically similar. The most obvious instance of this is in dialect borrowing... (Klammer, 2002:379).

In the case of the varieties concerned, this structural and typological similarity is not simply because they are sign languages, but because of their common characteristics as *urban*, *Indonesian* sign language varieties, such as their relative age, and the cultural elements in their

¹⁵⁸ Clark (2006) suggests that linguistic knowledge may be encoded in cognitive networks that replicate social networks, and perhaps even occupy the same cognitive structures, and this would make for a fascinating hypothesis to test in the Indonesian sign community.

sociolinguistic settings. However, structural elements do contribute to this similarity, and Quinto-Pozos (2007b) deliberates the way in which interlingual structural similarities may affect contact phenomena between sign languages. All of these factors are discussed further in section 7.2 as factors that favour or disfavour linguistic convergence among sign language varieties.

7.2. Factors that favour and disfavour the convergence of sign language varieties.

Linguistic convergence refers to the ‘reduction of differences between varieties’ (Siebenhaar, 2010:242), and may happen at every level of the linguistic system. Convergence may be produced by internal and external factors, although the two may be difficult to distinguish, and may also be horizontal (diatopic) or vertical (diastratic) – see Røyneland (2010). The concern here is with horizontal convergence, which for spoken languages may occur in three ways: (i) the displacement of isoglosses; (ii) dialect levelling; and (iii) koineisation. However, it was established in 7.1 that isoglosses are not applicable to sign language varieties, at least in Indonesia. Dialect levelling (see 2.3.2) has been identified in BSL (Stamp, 2013; Stamp et al., 2014) and Japanese Sign Language (Sagara, 2014; Sagara & Palfreyman, 2014). Koineisation – the emergence of a de-localised variety which may or may not entail the neglect of basic dialects (Siebenhaar, 2010:243) – has been applied to the variety (or varieties) known as International Sign (Supalla & Webb, 1995) but is not attested for other sign languages. Given the geography of the archipelago, both dialect levelling and koineisation are possible in Indonesia, although any de-localised variety is likely to be strongly influenced by Javanese varieties (see 4.3.2, 4.5). It could still be argued that koineisation is more likely, because regional varieties are unlikely to be entirely supplanted by Javanese varieties.

During this investigation, several factors have emerged as having favoured or disfavoured the convergence of urban sign language varieties. Two of these factors were discussed in section 7.1: the significance of social networks in allowing for the spread of variants (convergence) and the relative isolation of sub-communities. Although migration and language contact present opportunities for convergence, further research is necessary to identify fine-grained linguistic changes. For example, when a signer moves from one island to another in order to marry – as in the case of Santi, introduced in 4.3.3 – the signer often acquires variants from the new setting. An important and hitherto unanswered question is the impact of the signer on the language variety of the new setting: to what extent does a signer’s multidialectalism actually affect this variety? While convergence is easier if deaf people know the signs for more than one region, it is by no means certain. It is not sufficient to simply assume that language contact and migration make a permanent change: this needs to be demonstrated (as with TELINGA^{MATI} in section 4.3.3) – and, if possible, quantified – through research.

Several other factors may be noted as drivers of linguistic convergence. Although urban sign language varieties may have emerged in different parts of Indonesia at different times, the

influence of early deaf schools in Java (noted in 4.2) and the early dominance of Java-based deaf organisations (4.3.1) provide an important source of convergence, because it appears that, for several years, networks of sign language users were much stronger in Java compared with other areas. Additionally, the role of the national language, Indonesian, provides an important common ‘reference language’ for many signers. In Palfreyman (forthcoming) I note that, through language contact, categories for the semantic domain of colour terms in the Solo and Makassar varieties appear to calibrate with equivalent categories in Indonesian through contact with the surrounding spoken language. Shared practices at the socio-pragmatic level promote conditions for convergence. It is notable that signs such as MAAF (‘sorry’) and TIDAK-APA-APA (see 6.3.1) fulfil very similar purposes in the Solo and Makassar varieties, and the need for at least some of these discourse features seems to arise from familiarity with the socio-pragmatic formulas used by hearing people. Shared experiences of being deaf are mediated through language, and similar linguistic ideas or forms are often used to express occurrences that happen often to deaf people, such as the difficulty of communicating with hearing peers.

As discussed in section 4.4.1, the impact of SIBI on sign language varieties has been variable, but it is undoubtedly a converging force, especially on the lexicon used by younger signers, who may have encountered it at school. In theory, SIBI has been used in schools across Indonesia, which means that, in certain circumstances, signers from areas that have had no direct contact may be able to use it to communicate immediately. Assuming that all parties concerned have a reasonable understanding of SIBI signs, the relative ease of using these signs, compared with the mutual effort required in forging a contact variety, gives impetus to the use of SIBI. Further to this, the prestige that SIBI has gained through its association with Indonesian and the education system may also enhance its appeal. This is the main reason why indigenous sign language varieties face endangerment if SIBI continues to be promoted, and explains the concern that some deaf people now have with promoting *isyarat lama* (see 4.4.2).

In some cases, factors may combine. It has been noted that the sign for 100,000 Indonesian rupiah is the same in two unrelated varieties: Kata Kolok and the Makassar sign language variety (Palfreyman, forthcoming). This is not arbitrary, and can be explained with reference to the colour of the national bank note, which is red, and the visual representation of the colour ‘red’ by means of an indexical point to the lips. While iconicity is a truly internal factor, ‘red’ is often represented cross-linguistically using a similar form.¹⁵⁹ Here it combines with an external factor – the currency used by signers of both varieties – to create conditions that have led to the emergence of the same form for the same referent. In this way, certain propitious factors may lead to the

¹⁵⁹ Iconicity is also a plausible explanation for the fact that some formal elements of the negative particles documented in 6.2.1 – including the side-to-side movement and the ‘O’ handshape – occur in several unrelated languages.

development of the same form, and sociolinguists face the sometimes impossible dilemma of determining whether similar signs have spread from a common source, or have simply been reconstructed – through lexicalisation, grammaticalisation or other similar processes – due to the cultivation of sign language in settings that share similar sociolinguistic and socio-cultural features.

In many other cases the same factor may promote convergence in one situation, and constrain it in another.¹⁶⁰ For example, the role of gesture as a source for the negative sign TIDAK, highlighted in chapter 6, favours convergence since this particular gesture is used by hearing people in both Solo and Makassar. However, another gesture – the raising and lowering of the eyebrows to mark affirmation – is used by hearing people only in Makassar. While this eyebrow movement is used by Makassarese signers as an affirmative marker, I have found that its meaning out of context is unintelligible to Solonese signers. In this way, gestures that are used in only parts of the archipelago have led to differences between varieties.

Another example is the internal variation that exists within each variety, with many options available to express the same concept or function. This can favour convergence in as much as the same variant may occur in two different varieties. However, it can also favour divergence, since the signers who use any one variety have the option of increasing the use of variants that are particular to that variety. The idea of variation as a resource that signers can employ to reduce or augment the space between themselves and others – variation ‘in the moment’ – has been raised several times in this investigation, notably in section 5.5, where examples of intra-individual persistence and variation were examined in the grammatical domain of completion. Given that the grammatical variants for expressing completion are common to both varieties, this variable would not be a marker of regional identity.

Mouthings serve as a means of coping with variation (see the comments in 4.3.2), and this accords with observations made by Eichmann (2008), Stamp (2013) and Sáfár et al. (in press) concerning the role of mouthings for intelligibility in DGS, BSL and VGT/NGT respectively. Mouthings may therefore facilitate convergence, but in another respect they may also foreground differences between regions. For example, in 5.2.3 it is noted that a completive mouthing borrowed from Indonesian is intelligible to signers from either city, yet if a Solonese signer uses a Javanese mouthing, this may confound a signer from Makassar. This is another instance where, presumably, a Solonese signer could choose to drop Javanese mouthings, or – in certain situations – use them to express in-group identity. Given the large number of regional and local spoken languages in Indonesia, it is highly likely that many deaf people who have not encountered

¹⁶⁰ Note that the use of the notion of ‘divergence’ here does not necessarily refer to a kind of language change, whereby varieties become more dissimilar (Harnisch, 2010), but primarily to differences in form, which may or may not be the result of a linguistic process.

Indonesian through schooling have a much better understanding of local languages than of Indonesian, which could feasibly disfavour the use of mouthings in certain contact situations. A second example is local transport, which is referred to in spoken language by many different terms across the archipelago, including *pete-pete* (Makassar), *bemo* (Bali), and *angkot* (Solo). When presented with an unknown manual form for transport, mouthings are unlikely to offer any clues as to the meaning of the manual form unless the relevant spoken language term is already known. In some circumstances, mouthings may also disfavour convergence in a different way. If signers are able to use mouthings from Indonesian to understand each other, it might be less necessary for manual signs to converge. For the domain of colour terms, Stamp (2013) reports that BSL signers do not generally accommodate their interlocutor's manual forms, instead making recourse to mouthings alone in order to understand one another.

Cultural factors are described above as a source of commonality, both in terms of national culture and deaf culture, and it is likely, for example, that the religious practices of Muslims living on other sides of the archipelago create similar referents that need to be encoded linguistically. However, regional and local cultural differences in areas such as religious beliefs, family practices, and cuisine may also exert a strong heterogenising force. In the interview when I asked Jayeng to demonstrate which signs he encountered in Bali that were different to those in Solo, one of the first examples that he gave was a sign meaning *ngaben*, a cremation ceremony practiced by Balinese Hindus. This is not a regional variant but a cultural difference, which clearly made an impression on Jayeng – a Solonese Muslim – and such differences have the potential to colour the views that people form concerning linguistic variation more generally. Cultural elements therefore constitute another good example of how a factor may in the long term lead to instances of convergence in some cases, and to the retention of linguistic heterogeneity in other cases.

Language identity, as realised through affiliation or language loyalty, is another good example of a sociolinguistic factor that may over time generate, in some cases, instances of convergence, and in others the retention of linguistic heterogeneity. Although reports of communication problems are rare, signers quite often make comments expressing an ideological desire for a 'single' Indonesian sign language variety, as in Figure 7.3.



Translation: Thanks! Across Indonesia, sign language is very different. Let's teach each other so that it is fair/equal. Clear and correct sign language only, ok.

Figure 7.3. A comment made on the Facebook page 'Movement of 1,000 sign language users' on 2 February 2012.

On the other hand, there are incidental occurrences in the corpus data where participants explicitly or implicitly express affiliations with local and regional linguistic identities, suggesting that there is some tension between the two (Palfreyman, 2014). These data are in the process of being analysed in order to gain a better understanding of attitudes and identities as expressed through linguistic practices.

In light of the conflicting tendencies of uniformity and diversity discussed above, it should be noted that monolingual spoken language communities also display these tendencies, which work simultaneously (Saussure, [1915] 1966:205-6). At the same time, some of the factors that have exerted a homogenising force on other spoken and signed languages are not currently active for Indonesian sign language varieties, although they may become significant in the future. These include the absence of sign language in the national media, the lack of documentation and codification, and the absence of formal sign language teaching and training (Palfreyman, forthcoming). Television is noted to have had a strong impact on the convergence of BSL, especially through a long-running television programme first broadcast in 1981 (Woll, 1994; Sutton-Spence & Woll, 1999:30).

A summary of factors that favour and disfavour convergence is presented in Table 7.1. Although more factors are listed that favour rather than disfavour convergence, the relative impact of each factor has not yet been considered, and it is too early to draw conclusions about the overall pattern.

Table 7.1. *Factors that favour and disfavour the convergence of Indonesian sign language varieties.*

factors favouring convergence	factors disfavouring convergence
network of sub-communities	geographic isolation
dominance of Javanese sign language varieties	
common source – schools	
national spoken/written language	local/regional languages
mouthings from the national language	mouthings from local/regional languages
similar discourse features/socio-pragmatic needs	
shared experiences of being deaf in Indonesia	
SIBI, the government-sanctioned sign system	<i>isyarat lama</i> particular to certain groups/regions
universal iconicity across sign languages	
universal gestures/those used across Indonesia	regional/local gestures
shared national currency, transport, religious practices, cuisine, etc.	regional/local transport, religious practices, cuisine, etc.
the internal variation that characterises varieties (variants that are similar across varieties)	the internal variation that characterises varieties (variants that are different across varieties)
national affiliation/identities	regional/local affiliation/identities
lack of documentation of regional variation	lack of sign language documentation in general
use of communication technology e.g. 3G phones	the absence of sign language in national media

Striking and informative parallels can be noted in variation across Malay isolects, and Indonesian sign language varieties. Both have been shaped by language contact through complex networks and, more recently, political aims, and this has produced unifying elements across varieties as,

through language contact, variants have diffused across sub-communities. In each case, convergent forces exist in tension with the heterogeneity that inevitably stems from the geographical isolation of urban centres across much of the archipelago, and this has encouraged linguistic innovation and prevented levelling.¹⁶¹ In terms of the intelligibility of Malay across the archipelago, it is reported that language was ‘not a major barrier’, since ‘linguistic diversity was part of the everyday experience of Southeast Asian commerce’ (Reid, 1994:159), and the same seems to be true for sign language users.

As noted in 1.4.2, the standard variety of Indonesian used in the media and the education system is commonly evaluated as ‘good’ and ‘correct’, while colloquial varieties of Indonesian are often considered somewhat substandard, even though these are often used in daily life (Ewing, 2005). There are clear parallels here with the government’s attempt to introduce SIBI as a ‘standard’ sign system, and the influence of SIBI on sign language varieties may be similar in some respects to the influence of Standard Indonesian on regional and local isolects.¹⁶² Javanese has had an impact on Malay, with certain lexical items such as *bapak* (‘father’/‘sir’) and *ibu* (‘mother’/‘madam’) having been adopted by varieties of Malay without Java (Sneddon, 2003), and this is paralleled in the relative dominance of Javanese sign language varieties (4.3.2). There is a sense in which the choice of Malay rather than Javanese as the basis of the national language underlines the intention of language planners to choose a variety that is relatively free from ethnic ties (Bertrand, 2003). This also has an analogy with sign language since, despite local differences, urban sign language varieties appear to be used by signers who are united through their common experiences as deaf sign language users, regardless of ethnic ties.

To give but one example, the forms and syntactic behaviour of completive markers vary across Malay isolects, as shown in 5.1.4(i), and here too there are observable parallels with the expression of completion in sign language varieties (5.2). The complexity of form and function in this and other domains has led linguists to remark that Malay defies categorisation. For example, Ewing comments that

speakers of Indonesian continue to use a wide range of fluid and constantly interacting codes, styles, and lects, which are neither easily nor appropriately separated into neatly distinct varieties (Ewing, 2005:227).

A common way of dealing with this fluidity and interaction is to refer alternately to ‘Malay’ and to different isolects of Malay – Manado Malay, Makassar Malay, Ambon Malay, and so on – and

¹⁶¹ While speakers of Malay in urban centres inhabit geographically dense networks (Figure 7.1), the isolation imposed by the large distances between sub-communities of Malay speakers suggests a geographically sparse distribution when the perspective is scaled to include the whole archipelago (i.e. similar to Figure 7.2), at least prior to Indonesian independence in 1945.

¹⁶² If sign language varieties are regarded as equivalent to Malay isolects, some educators may harbour doubts about the suitability of these isolects for the classroom. However, a bilingual approach would regard Indonesian as the standard written form, and use indigenous sign language varieties in the classroom (see 1.2.2), rather than seeking to impose a standard signed variety through language planning.

this offers a model for describing Indonesian sign language varieties. In 4.4.2 the term *Bisindo* was introduced as an Indonesian acronym for ‘Indonesian Sign Language’. If this is regarded as sociolinguistically similar to Malay, it may therefore make sense to refer to isolects of *Bisindo* (Makassar *Bisindo*, Solo *Bisindo*, Jakarta *Bisindo*, and so on), while still identifying *Bisindo* as a single linguistic entity. Whether this proves a feasible or popular system with members of the sign community remains to be seen.

7.3. Directions for research on sign language variation and change

The factors found to predict the realisation of lexical and grammatical variables in the two target domains suggest that sign languages exhibit orderly heterogeneity, like spoken languages (2.3.1). Further, it is necessary to consider variation *and change*, since while some factors appear relatively stable, the realisation of other variables is affected by age, which is regarded as an indication of linguistic change over time (see 2.4). However, we are barely on the cusp of understanding the factors that affect the realisation of these variables. In section 7.3 I highlight some of the factors that warrant immediate further investigation, as well as the need for new methods in order to refine our understanding of (socio)linguistic variation and change across sign languages generally, and Indonesian varieties in particular.

One of the key findings to emerge from chapters 5 and 6 is that, within the corpus, certain changes are being led by Solonese signers. It is found that younger signers prefer irregular variants such as completive clitics (5.4.4) and negative clitics and suppletives (6.5.4), and this accords with the reported outcomes of grammaticalisation processes cross-linguistically (Hopper & Traugott, 2003). Specifically, however, language change is found to be led by younger *Solonese* signers, rather than those from Makassar (see 6.5.4 and 5.4.4). Willemyns (1997, cited by Taeldeman, 2010) notes that there may be differences in the way diachronic processes, such as levelling, take place in ‘central’ and ‘peripheral’ dialects. Meanwhile, Trudgill (2011) argues that morphosyntactic ‘complexification’ – which includes irregularity – tends to occur in small, dense communities with more communally-shared information (see also Schembri et al., 2013). Of the two varieties, it is the one in Solo that best fits the description of a ‘central’ dialect. Furthermore, the Solo variety is highly connected with other Javanese varieties (chapter 4, *passim*), while the Makassarese sign community is geographically and historically more ‘peripheral’. Might these sociolinguistic factors help to explain why irregular variants are preferred by Solonese signers? Such hypotheses can only be tested once further research has been conducted on these and other grammatical domains, with a larger sample that includes other varieties within and beyond Java.

Language-internal factors may also have a role to play in fostering irregularity. A relationship between frequency effects and irregularity has been established by linguists such as Bybee (1995:236), who notes that relatively high-frequency forms are more likely to be irregular since

they have stronger representations (see also Bybee, 2007, 2010).¹⁶³ Further, Werner (1987) suggests that suppletion increases the storage and processing efficiency of highly frequent items. The notion of frequency has been raised several times in relation to irregular forms of completion and negation, and the predicates that occur with irregular strategies appear to be relatively frequent (see 5.2.2 on completive clitics and 6.2.2–6.2.4 on irregular negatives). When frequency effects are included in sociolinguistic studies on the use of space with indicating verbs, and the location variable, these effects are found to be significant (see de Beuzeville et al., 2009; Schembri et al., 2009). There are therefore good reasons to return to the variables studied here to test the hypothesis that high frequency items are a significant predictor of completive clitics and irregular negatives.

Finally, the role of certain factors found to be significant predictors of variation is of particular interest because of the broader implications for sign language (socio)linguistics in general, and two such factors are discussed here. First, the finding of a correlation between syntax and gender (6.6) – namely that negative-predicate ordering is preferred by female signers, and predicate-negative ordering by males – is intriguing, especially in light of the fact that sex is not found to be significant in predicting variables at other levels of linguistic organisation. More qualitative research is needed on other syntactic variables to see whether the correlation between syntax and gender holds more generally. Secondly, the finding with regard to constructed dialogue and the ‘quoting’ of hearing gestures (see 6.4 and 6.5) could also be relevant to other corpus-based studies of sign languages in explaining patterns in the realisation of different variables. Additionally, the types of structures found in constructed dialogue could be a research topic by itself. If it were found that signers consistently reproduce the exact variants that were used in reported conversations, and that this happens across linguistic domains, this would constitute yet further evidence that signers are highly attuned to subtle sociolinguistic ‘accents’ used by other signers (6.5.4).

Several theoretical gaps have been addressed during the course of this thesis. First, a comprehensive overview of the inadequacies of lexicostatistical methods has been presented, with a special focus on the implications of applying these methods to sign language varieties (2.2).¹⁶⁴ In response to this, the need to use contemporary approaches from the field of sociolinguistics has been underlined. Since the 1960s, spoken language sociolinguists have developed a series of theoretical frameworks and analytical practices that have much to offer their sign language

¹⁶³ According to Ullman (2007, 2012), irregular forms have stronger representations than regular ones because they are processed by the ‘lexical’ declarative memory as whole units, rather than by the ‘grammatical’ procedural memory; the declarative memory is generally thought to require less cognitive effort (see Heffernan & Hiratsuka, 2014).

¹⁶⁴ It seems particularly difficult to defend the value, for sign community members, of rapid appraisals and wordlist elicitation, especially where the aim of these activities is language delimitation through lexicostatistics.

counterparts. The field of sign language sociolinguistics has been slow to embrace the notion that signers use variation creatively to position themselves, and to augment and diminish social space between themselves and other constructed groups.

Furthermore, this kind of positioning is in opposition not simply to spoken language users, but also to other sign language users. For example, when Solonese signers use Javanese mouthings to express completion, rather than Indonesian mouthings (5.2.3), they are actually positioning themselves closer to hearing people who also use spoken Javanese, and augmenting the distance between themselves and other deaf signers who do not know Javanese (Palfreyman, 2014). This immediately demands a more complex sociolinguistic framework, where deaf signers use language to construct multiple identities, in opposition to the dichotomous notion that deaf signers are simply ‘deaf’ as opposed to ‘hearing’. Rather than treating variation solely as a tool for researchers to delineate languages and dialects, the field needs researchers who will identify how sign language variation is being used as a tool by signers themselves to create identities.¹⁶⁵

This study is the first of its kind to use a Variationist Sociolinguistics approach to examine sign language variation in the grammatical domain of negation, and is one of a small but growing number of studies to examine linguistic and sociolinguistic variation using grammatical variables as well as lexical ones. The use of sociohistorical analysis and social network theory is also innovative, and adds to studies that have sought to understand the unique sociolinguistic setting of sign languages (e.g. Nonaka, 2009; Zeshan & de Vos, 2012; and Schembri et al., 2013). Furthermore, this is one of a very few studies to use a corpus of linguistic data to study an urban sign language variety in a developing country (see Palfreyman, Sagara & Zeshan, in press), and as such it makes an important contribution to the small but growing number of studies based on sign language corpora.

The recent emergence of sign language corpora has much to offer sign language sociolinguistics, but the application of theoretical frameworks to a language corpus inevitably draws attention to areas where analytical practices need to be strengthened or refined. As noted in section 5.3, from a typological view it is usually possible to focus on canonical or prototypical examples of whichever phenomena are under review (for a good example see Corbett, 2007, on suppletion). From a quantitative perspective, however, this does not offer enough guidance for coding purposes. A certain degree of indeterminacy is to be expected when coding for linguistic characteristics, many of which exist along continua that defy easy categorisation. An example of this is the cliticisation of completive and negative particles (5.2.2 and 6.2.2). General theoretical

¹⁶⁵ Recent studies on gendered IrishSL (Leeson & Grehan, 2004) and Black ASL (McCaskill et al., 2011) are an indication that the field is travelling in this direction, but research must move beyond macro-social categories and look at how identity is forged at the micro-social level. As with research on spoken languages, such second and third-wave approaches have a place alongside Variationist Sociolinguistics, rather than replacing it (see also section 2.4).

criteria are discussed in the literature, as outlined in 3.5.2(i), but this investigation is the first attempt to classify tokens in sign languages as free or cliticised particles for the purposes of quantitative analysis, and there has not been enough general discussion about this kind of classification. As linguists seek to exploit the benefits of sign language corpora yet further, it will be increasingly necessary for linguists working on these corpora to come together and discuss robust criteria for linguistic classification.

The notion of functional equivalence is underexplored in sign language studies, but offers a new perspective for examining linguistic forms and can uncover important links between typology and sociolinguistics. For example, in sections 5.1.5 and 6.1.4 it has been shown that, for several sign languages, linguistic forms have been documented that appear to exhibit the same or similar functions: variants in all but name, yet not acknowledged as such. By combining the insights available from introspection (see 5.6) with the distribution of variant forms in corpora, it is possible to identify patterns that have been undetected hitherto. The scope of investigation can then be broadened further to consider not only linguistic constraints but also social constraints that shape the expression of variables across different sign languages. Through collaboration among corpus linguists working on sign languages, it will be possible to trace the linguistic *and* social behaviour of variables that express similar functions in different sign languages, and in the process, gain a better understanding of variation in every sense of the word.

The finding that the functional category of completion may be expressed through mouthings alone (5.2.3), and that mouthings also play a key role in *TIDAK with mouthed predicate* constructions (6.2.3), present a challenge for the way in which non-manual features are annotated in electronic corpora. Annotation practices confer a subtle priority to manual features, and this has created challenges when searching in the CISLV for tokens where functions are expressed simultaneously and only through mouthing. When using concordances, for example, the assumption that the key meaning of the text will be more or less inferable through a string of manual glosses does not hold. Likewise, the only lexical frequencies compiled for sign languages thus far have focused on manual signs. Analytical techniques need further refinement in order to ensure that non-manual elements can be fully incorporated.

Finally, it is not enough to focus solely on the forms of language. Sign language sociolinguists must contend also with attitudes towards language; perceptions of variation; manifestations of socio-political and linguistic identity; and strategies that signers use to cope with variation. In particular, many signers display a high level of sociolinguistic competence (7.1), and are usually able to converse with signers from different parts of Indonesia with relative ease. This is a very valuable communicative skill, and one that second language learners often find challenging – especially hearing learners (Eichmann, 2008). Improving the acquisition of sociolinguistic competence is particularly important for the success of applied sign linguistics in Indonesia, given

the need to train sign language interpreters and teachers of the deaf who can cope effectively with variation. Research on these areas is on-going, drawing upon qualitative analyses of corpus data and interviews.

7.4. The significance for the Indonesian sign language community

In this final section, I turn to the broader significance of this investigation for the Indonesian sign community. Documenting varieties in a way that reflects sociolinguistic patterns has several benefits for the target community. First, it affirms that their language does indeed have linguistic status. If this seems a strange point, it is worth explaining that it is highly significant for the Indonesian sign community. In section 1.4.4 I described how signers in Indonesia are sometimes considered to use a primitive ‘Tarzan’ language, which suggests little more than a series of basic gestures. The typologically-informed documentation in this investigation shows that, very far from being primitive, sign language varieties are highly complex both linguistically and sociolinguistically. It has also been suggested that many sign language users possess a high level of sociolinguistic competence and, as fluent users of sign language, command valuable communicative skills. Again, this invalidates the commonly-held notion that Indonesian sign language users are deficient or lacking in linguistic ability.

This is the first time that the details presented in chapter 4, concerning the sociohistorical development of the sign community, have been synthesised. It is important for deaf sign language users to know about the origins of their language and community because this often invokes a sense of pride which can counteract the pejorative attitudes that they continue to face. In particular, the conclusion that sign language varieties have been used in Indonesia for around 60 years (4.5) can help community members to emphasise the linguistic status of sign language. The recent advocacy of *Bisindo* by sign community members has led some to mistake it as simply one in a long line of created languages.¹⁶⁶ The finding that sign language varieties have developed naturally within the sign community, and over a much longer period of time than ISYANDO or SIBI, is therefore an important point to emphasise, because it highlights the provenance and relative weight of sign language as an effective means of communication.

Through continuous community involvement (3.7), a new generation of sign community members now have an enhanced level of metalinguistic awareness – especially in Solo – and are active in promoting further awareness and development both within and without the sign community. In addition to the development of human resources, language documentation and the Corpus of Indonesian Sign Language Varieties provide a strong foundation for the

¹⁶⁶ At a meeting in Makassar in May 2014, hearing teachers from deaf schools showed considerable confusion concerning the different communication methods, or posited ‘solutions’ that they have been told about through the years, such as oralism, ASL, ISYANDO and SIBI (see 4.4.1).

implementation of applied sign linguistics (Cresdee & Johnston, 2014; Jones & Palfreyman, 2014). As highlighted in 1.4, the community is in need of interpreters, better access to education through sign language, and metalinguistic skills to study their own language, and these needs are realisable through the implementation of sign language training. This also seems to be an effective means of improving the literacy skills of sign community members. A forthcoming report from the World Federation of the Deaf and the Finnish Association of the Deaf (to be published in 2015) demonstrates that sign language work is of critical importance for the development of sign communities, and through such research, deaf signers in other countries have fulfilled their potential. The conception of this investigation as part of a long-term partnership between the researcher and Gerkatin in Solo and Makassar means that it is reasonable to anticipate similar developments in Indonesia.

The question of sign language delineation has emerged as a critical one for urban varieties in Indonesia, and I have presented an overview of these issues that may be of use for Indonesian signers. No ‘decision’ has been taken here regarding the language-dialect question, but from a linguistic point of view the evidence points to striking similarities between varieties separated by hundreds of miles (see chapters 5 and 6; and Palfreyman, forthcoming). Several reasons have been found to account for this complex situation, and parallels with other sign and speech varieties have been drawn, highlighting the fact that Indonesian sign community members are not alone in the issues that they face. Indeed, most of the world’s languages do not have clear boundaries and standard varieties, which makes languages such as English and Indonesian the truly marked ones. It has also been suggested from observations that sign language users from different sub-communities do not often seem to have difficulties in understanding one other. Eichmann (2008) notes that regional varieties in particular are often problematised not by deaf signers themselves, but by hearing learners, and in section 7.3 it was suggested that finding ways of teaching sociolinguistic competence is an important aim for future work.

For such a populous country, it is somewhat surprising that the Indonesian sign community has been relatively neglected as a focus for research and development. It is my hope that this investigation will raise the profile of Indonesian sign language varieties nationally and internationally, leading to more research in different linguistic domains, particularly on sign language varieties outside of Java. Many of these varieties seem liable to become obsolescent (Palfreyman, forthcoming), and without further documentation, may be lost. Above all, I hope to see a growing number of deaf Indonesians leading research and conducting studies on the archipelago’s fascinating sign language varieties that are of value not only for their own sign community, but for many other deaf and hearing people around the world.

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Appendix 1: Consent form



Minta ijin...

Kegiatan: riset Bahasa Isyarat Indonesia

Silahkan centang kotak kalau kamu setuju.

Aku paham informasi tentang riset Pak Nick (lembar tngl _____). Aku sudah ber-tanya tentang kegiatan ini. Aku puas dengan jawaban.

Aku paham aku tidak harus bantu. Kalau aku mau bantu, dan nanti aku ganti pikiran, aku bisa beri tahu Pak Nick, tidak apa-apa.

Aku setuju bantu dengan riset Pak Nick.

Aku setuju di-rekam sementara aku pakai bahasa isyarat.

Aku setuju, data bahasa isyarat ku boleh disimpan di UCLAN, Inggris, untuk riset.

Aku mau nama ku diakui dalam riset Pak Nick

Aku **tidak** setuju, data ku tidak boleh diterbit (video atau foto).
Data ku hanya boleh dipakai seperti gambar garis atau transkripsi

atau

Aku setuju, kalau terkait dengan riset ini, data ku boleh di-pakai untuk...

- foto dalam tulisan
- video dalam presentasi
- video dalam CD-Rom
- foto dan video pada internet

NAMA _____ TANGGAL _____ TANDA TANGAN _____

The original Indonesian version (*above*); an English translation (*below*).



Asking for permission...

Activity: Indonesian Sign Language research

Please tick the box if you agree.

I understand the information about Nick's research (sheet dated _____).
I have asked questions about this research, and I am satisfied with the answers.

I understand I don't have to help. If I want to help, and later I change my mind,
I can tell Nick, and it won't be a problem.

I agree to help with Nick's research.

I agree to be filmed while I use sign language.

I agree, my data can be saved at UCLAN, England, for research purposes.

I want my name to be acknowledged in Nick's research.

I **don't** agree, my data cannot be published (as video or photos).
My data can only be used for line drawings or in a transcription

or

I agree, if it is linked to this research, my data can be used as ...

- photos in text
- videos in a presentation
- a video on a CD-Rom
- photos and videos online

NAME _____ DATE _____ SIGNATURE _____

Appendix 2: Coding scheme

tier	description	code
------	-------------	------

FOR EACH SIGNER

SIGNER 1 MOUTH	mouthing	(open field)
SIGNER 1 NMF	other non-manual feature	(focus on target structures only)
SIGNER 1 RH	signs in RH only, or two-handed signs	(open field)
SIGNER 1 LH	any signs different to RH, or signs in LH only (blank for two-handed signs)	(open field)
SIGNER 1 MEANING	meaning of clause/group of clauses	(open field)

SIGNER	which signer produces the target structure (used to attribute a signer code at the Excel stage)	1 (far left) 2 (second from left) 3 (right) 4 (farthest right)
--------	---	---

COMPLETION

comp-FORM	completive form ('target')	1 SUDAH:1 2 SUDAH:2 3 SUDAH:3 4 SUDAH:4 5 other manual form 06 completive mouthing
comp-CLITIC	completive marker is cliticised	1 enclitic 2 proclitic 3 free form
comp-HANDEDNESS	handedness of completive (if marked manually)	1 RH 2 LH 3 two-handed 4 non-manual
comp-PHRASE	string of glosses to contextualise the target	(open field)
comp-FUNCTION	the main sub-function of the completive	1 experiential perfect 2 anteriority 3 conditional 4 narrative advancement 5 meta-comment 6 pragmatic 7 not clear
comp-MEANING	the meaning of the phrase that includes the completive (demonstrating what is completed)	(open field)
comp-MOUTHING	the mouthing for completion	1 sudah 2 habis 3 wis 4 ya sudah/yowis 5 other mouthing 6 indistinct 7 no mouthing
comp-REPETITION	any observable kind of repetition	1 repetition 2 mirroring 3 not applicable
comp-SYNTAX	the syntactic position of the target	1 pre-predicate 2 post-predicate (not cf) 03 clause final 4 stand-alone 5 non-manual alone 6 non-manual with other predicate

comp-TEXT-TYPE	type of text in which the target occurs	1 narrative 2 dialogue
comp-PERSISTENCE	the variant is the same as the last realisation by the same signer	1 yes 2 no 3 not applicable
comp-ACCOMMODATION	the signer switches variants in favour of the one last used by another signer	1 yes 2 no 3 not applicable

NEGATION

neg-GLOSS	negative form ('target')	<p>particles</p> <p>1 TIDAK 2 TIDAK-ADA 3 PALM-UP 4 KOSONG-1 5 KOSONG-2 6 NOL</p> <p>proclitics</p> <p>7 TIDAK= 8 PALM-UP=</p> <p>enclitics</p> <p>09 =TIDAK 10 =PALM-UP 11 =TIDAK-ADA</p> <p>non-manual</p> <p>12 mouthing 13 headshake 14 facial expression</p> <p>suppletive</p> <p>15 TIDAK-BERANI 16 TIDAK-BISA 17 TIDAK-BOLEH 18 TIDAK-JADI 19 TIDAK-KENAL 20 TIDAK-KUAT 21 TIDAK-MENGERTI 22 TIDAK-MUNGKIN 23 TIDAK-PERNAH 24 TIDAK-SUKA 25 BELUM:sibi</p>
neg-HANDEDNESS	the handedness of the target	1 RH 2 LH 3 two-handed 4 non-manual
neg-MEANING		
neg-MORPHOLOGICAL	morphological realisation of target	1 particle 2 proclitic 3 enclitic 4 clitic (indeterminate) 5 suppletive 6 non-manual
neg-PARADIGMATIC	how negation is realised within a single syntactic slot	01 particle or clitic 02 non-manual alone 3 suppletive 4 TIDAK with mouthed predicate constructn 5 indeterminate

neg-SYNTAGMATIC	which syntactic slot the target assumes	1 N [neg] 2 PN [pred neg] 3 NP [neg pred] 4 DP [dropped pred] 5 double [neg pred neg] 6 simultaneous w pred 7 other
neg-FUNCTION	the main function of the target	01 basic clause negation 02 completion 3 quantifier 4 modal 5 lexical pred 6 existence/possession 7 imperative 8 adverb 9 conflated
neg-PREDICATE	the predicate that is being negated (even if dropped)	(open field)
neg-PRED-TYPE	the type of predicate	01 not a lexical pred. 02 active 3 stative/adjectival 4 nominal
neg-MOUTHING	which mouthing accompanies the target	1 closed 2 indistinct 3 mouth gesture 4 predicate only 5 full negator full pred 06 part negator full pred 07 part negator only 8 tidak 9 bukan 10 belum 11 jangan 12 kosong 13 nol
neg-HEAD-SHOULDERS	head/shoulder movement and facial expression accompanying the target	1 none 2 headshake 3 raised shoulders 4 facial expression
neg-SCOPE	elements with which the head/shoulder movement/expression occur	01 negative particle only 02 neg + pred (1 unit) 03 neg + pred (2 units) 04 part of longer string 05 other
neg-PHRASE	string of glosses to contextualise the target	(open field)
neg-QUESTION		1 direct question 2 other question 03 not a question
neg-RESPONSE		01 answer to a question 02 negative interjection 03 response to intrlctr 04 neither
COMMENT	any extra/useful information relating to the target	(open field)

Appendix 3: Manual alphabet charts

Two-handed alphabet

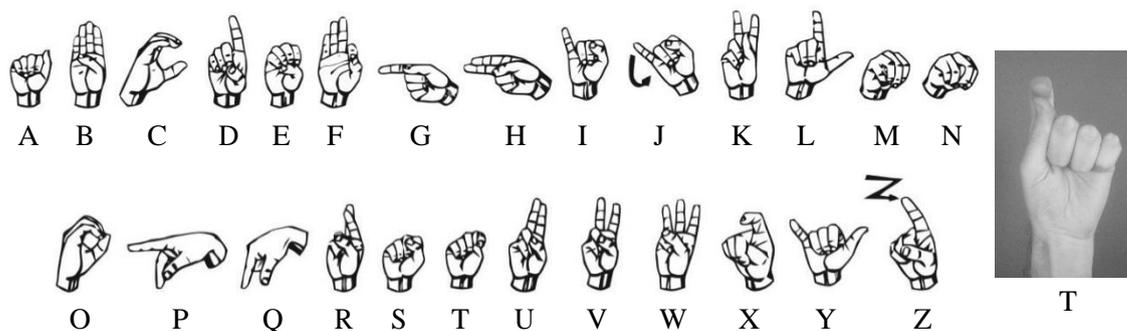
Two manual alphabets are used by signers across Indonesia. The two-handed manual alphabet (discussed in 4.2.3) is shown below. Note that these are variants; some of the signs used by older signers are more similar to the ‘Indonesian fingerspelling’ variants shown in Figure 4.8.



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One-handed alphabet

The one-handed manual alphabet is identical to the ASL alphabet (below, left), with the exception of ‘T’, which is shown below (right). The ASL alphabet is used in SIBI (see 1.2.2).



Appendix 4: Map of Indonesia

1	Aceh	5	Bandung	9	Biak	13	Makassar	17	Padang	21	Ruteng	25	Solo
2	Ambon	6	Banjarmasin	10	Denpasar	14	Manado	18	Pekanbaru	22	Sabang	26	Surabaya
3	Bali	7	Bengkala	11	Jambi	15	Medan	19	Pontianak	23	Samarinda	27	Wonosobo
4	Balikpapan	8	Bengkulu	12	Kupang	16	Merauke	20	Rangkasbitung	24	Semarang	28	Yogyakarta

