

Central Lancashire Online Knowledge (CLoK)

Title	Sign language varieties of Indonesia: A linguistic and sociolinguistic investigation
Type	Article
URL	https://clock.uclan.ac.uk/id/eprint/20679/
DOI	https://doi.org/10.1075/sll.20.1.06pal
Date	2017
Citation	Palfreyman, Nick (2017) Sign language varieties of Indonesia: A linguistic and sociolinguistic investigation. Sign Language and Linguistics, 20 (1). pp. 135-145. ISSN 1387-9316
Creators	Palfreyman, Nick

It is advisable to refer to the publisher's version if you intend to cite from the work.
<https://doi.org/10.1075/sll.20.1.06pal>

For information about Research at UCLan please go to <http://www.uclan.ac.uk/research/>

All outputs in CLoK are protected by Intellectual Property Rights law, including Copyright law. Copyright, IPR and Moral Rights for the works on this site are retained by the individual authors and/or other copyright owners. Terms and conditions for use of this material are defined in the <http://clock.uclan.ac.uk/policies/>

Article

Sign language varieties of Indonesia: A linguistic and sociolinguistic investigation

Palfreyman, Nicholas

Available at <http://clock.uclan.ac.uk/20679/>

Palfreyman, Nicholas ORCID: 0000-0002-9095-4937 (2017) Sign language varieties of Indonesia: A linguistic and sociolinguistic investigation. Sign Language and Linguistics, 20 (1). pp. 135-145. ISSN 1387-9316

It is advisable to refer to the publisher's version if you intend to cite from the work.
<http://dx.doi.org/10.1075/sll.20.1.06pal>

For more information about UCLan's research in this area go to
<http://www.uclan.ac.uk/researchgroups/> and search for <name of research Group>.

For information about Research generally at UCLan please go to
<http://www.uclan.ac.uk/research/>

All outputs in CLoK are protected by Intellectual Property Rights law, including Copyright law. Copyright, IPR and Moral Rights for the works on this site are retained by the individual authors and/or other copyright owners. Terms and conditions for use of this material are defined in the <http://clock.uclan.ac.uk/policies/>

DISSERTATION ABSTRACT

Sign language varieties of Indonesia:

A linguistic and sociolinguistic investigation

Nick Palfreyman

University of Central Lancashire

The field of sign language sociolinguistics took a giant leap forward with pioneering research on variation in American Sign Language by Lucas et al. (2001), and this thesis applies similar techniques to two Indonesian sign language varieties used in the cities of Solo (Java) and Makassar (Sulawesi). Where Lucas and her colleagues looked at handshape, location drop, null-pronoun variation and lexical variation, this thesis is concerned with the grammatical domains of completion and negation. In the Solo and Makassar varieties, both domains are beset by forms exhibiting complex multifunctionality, with typologically unusual features and grammatical variants that are unattested in other sign languages. Considerable lexical and grammatical variation is found in both varieties, but there are very few categorical differences, and quantitative analysis confirms that this variation rarely patterns according to urban centre. Instead, there is extensive intra-urban variation. But while grammaticalisation can be observed for both domains in both varieties, there is evidence to suggest that Solo – particularly its younger signers – sometimes favours variants that are more morphologically complex. One of the aims of the thesis is to identify some of the key linguistic and social factors that can explain this variation.

Indonesia is spread across a vast archipelago with a population of over 240 million, and census data suggest that at least 500,000 people have a profound level of deafness (Palfreyman, this thesis). Given the size of the sign community and the great cultural and ethnic diversity that typifies Indonesia and other parts of South East Asia, the dearth of attention that they have received from sign linguists is remarkable (Fischer and Gong 2010:518). An exception is Kata Kolok, a rural sign language variety used in the north of Bali, documented by Marsaja (2008) and de Vos (2012).

Lexicostatistical methods championed by Woodward (1993, 2000, 2011) have recently been applied to Indonesia (Isma 2012), but there are several concerns as to how appropriate this is from a theoretical point of view, and given the Indonesian context. Chapter 2 summarises these concerns, and makes a case for marrying methods from linguistic typology and Variationist Sociolinguistics. Typological methods are applied to document each grammatical domain with reference to structures found cross-linguistically. Methods from Variationist Sociolinguistics are then applied to see whether factors such as region are statistically significant in predicting the realisation of lexical and grammatical variables. The research is guided by three questions:

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

These are operationalised and investigated with respect to linguistic data from the Corpus of Indonesian Sign Language Varieties, which comprises three hours of mostly spontaneous conversation from 38 signers in Solo and Makassar, filmed in dyads, triads and tetrads. Data are transcribed and variants from each target domain are annotated to enable further analysis. In addition, a range of sources are used to shed light on the sociohistorical context, including a mapping exercise; written documents obtained from the archives of schools and deaf organisations; and interviews with deaf individuals and Dutch missionaries who worked in deaf schools. Details of the methods used, and ethical considerations, are provided in chapter 3.

Language contact: the sociohistorical context

Historic links are identified between sub-communities of signers across the Indonesian archipelago in chapter 4. These links signal the emergence and development of an extensive network through which sign language has been transmitted, and variants diffused. Given the absence of records, it is impossible to be certain about the origins of sign varieties used by urban deaf communities in Indonesia, but the available evidence suggests that these varieties developed following the establishment of private deaf schools by the Dutch from the 1930s onwards. An interview with an elder member of the community suggests that urban sign varieties have been used in Indonesia since at least the 1950s, suggesting a probable time-depth of around 60 years. Enrolment books show that, in the early years, deaf children attended these schools from across the archipelago, enabling diffusion on their return home, while the huge distances between urban centres allowed for considerable local innovation in relative isolation.

The subsequent convergence and divergence of varieties across Indonesia has been enabled partly through contact between sub-communities of signers, beginning with alumni associations that went on to become social deaf organisations. These networks became stronger and more elaborate as a result of internal migration and social contact facilitated by deaf people searching for work, marriages, national gatherings of scouts and guides, and national sports events. More recently, new technologies such as 3G phones have reinforced social networks at the national level.

Four kinds of linguistic diffusion are noted in chapter 4: (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). Deaf Indonesians increasingly take part in events at local, regional, national and international levels, and this has inevitable consequences for the structure of Indonesia's sign varieties.

Variation in the domain of completion

There are compelling reasons to look at the grammatical domain of completion in these varieties, including the relatively high frequency of completive aspect markers, the existence of formal variation, and the cultural significance of completion in Indonesia. Chapter 5 introduces four particles from the data that have a core completive meaning: these are glossed SUDAH:1, SUDAH:2, SUDAH:3 and SUDAH:4 after the Indonesian completive *sudah*. Evidence is presented to suggest that these may have grammaticalised from signs meaning 'lost', 'run out', 'that's all' and 'good/ready', respectively. These lexical variants occur in both varieties, with a strikingly similar distribution in each variety. In addition to their use as free particles (1), all four may cliticise, i.e. lose their phonological independence and become bound to a host, usually the predicate, as in (2).

- | | | | | |
|-----|-------------------------------|---------|-----|-------------------------------|
| (1) | MEET | SUDAH:3 | (2) | MEET=SUDAH:3 |
| | '(I) have already met (her).' | | | '(I) have already met (her).' |

While manual particles are usually accompanied by a simultaneous mouthing, completion can also be expressed through mouthing alone. In these cases, the mouthing is often coextensive with other predicates, on which it confers a completive aspect (3). While completive mouth gestures have been attested for Turkish Sign Language (Dikyuva 2011) and Kata Kolok (de Vos 2012), the grammatical use of completive mouthings does not appear to have been noted in the literature before. In addition, while the Makassarese variety borrows a completive mouthing *sudah* from the national spoken language, Indonesian (3), the Solo variety borrows both *sudah* and *wis*, a completive in the local language, Javanese (4). Recent research

suggests that, for Solonese signers, the choice of mouthing is socially significant, and is used to create a distinct Javanese identity (Palfreyman forthcoming).

- (3)

CL:CARRY-BASKET	<u>sudah</u> CL:PUT-BASKET-DOWN
-----------------	------------------------------------

'(I) carried the basket of clothes (upstairs) and put it down, and then...'

- (4)

ADULT	<u>wis</u> SUDAH:3
-------	-----------------------

'He is already grown up now.'

In total, 299 instances of completion are identified in the corpus, and coded for form, sub-function and other linguistic and social factors. Multivariate analysis of the lexical variable (discounting instances of completion by mouthing alone) shows that region is a statistically significant factor for predicting the realisation of only two variants (SUDAH:3 and SUDAH:4); the former favoured by Solonese signers and the latter by Makassarese signers. Region is not significant for the two most frequent variants, SUDAH:1 and SUDAH:2. Other factors found to be significant in the choice of variant are syntactic position (pre-/post-predicate), presence of narrative advancement, previous realisation of the variable, and text type (narrative or dialogue).

Instances of completion can also be categorised as one of three grammatical variants: (i) free particle (n=215), (ii) cliticised particle (49), and (iii) completion by mouthing alone (35). According to analysis of this grammatical variable, region and age are statistically significant for the realisation of completion, with older signers and signers from Makassar disfavoured the use of completive clitics. These findings imply language change in the domain of completion, with younger Solonese signers preferring forms that are more morphologically complex. Conversely, the expression of completion through mouthing alone appears to be relatively stable, with no indication that this is becoming more or less frequent.

Variation in the domain of negation

The Solo and Makassar varieties are found to be manual dominant (Zeshan 2006), relying on manual forms to reverse the polarity of the clause. This is similar to several other Asian sign languages such as Kata Kolok (de Vos 2012) and Hong Kong Sign Language (Tang 2006). A search of the corpus for instances of grammatical negation results in 808 tokens, of which the four most frequent types of negation are as follows:

- (i) negative particles (n=377), including TIDAK, the basic clause negator

- (ii) negative clitics (134)

The inventory of particles and clitics is similar in both varieties, with one exception: the Solo variety exhibits layering (Hopper 1991:22), with a new dedicated form, TIDAK-ADA, available alongside TIDAK. This new form expresses negative existence and completion, while in the Makassar variety TIDAK expresses all of these functions, and has a larger functional load.

- (iii) constructions with a predicate mouthed simultaneously with TIDAK (131)

This occurs for high frequency predicates. For example, the Indonesian mau ('want') can be mouthed co-extensively with the basic clause negator, TIDAK, giving the meaning 'not want'. This may be rare cross-linguistically, but there are many examples in the corpus where signers creatively isolate the function of manual and non-manual articulators, signifying two or more discrete meanings concurrently.

- (iv) negative suppletives (126), where the predicate is negated not by regular means of negation but using a single sign with a maximally irregular form. These occur for high frequency predicates and have meanings such as 'cannot', 'not know a person', 'never' and 'not yet'. This variant occurs in both varieties, though Solo appears to have a larger set of suppletive forms. There is a notable difference between these and suppletives reported for other sign languages to date. In Catalan Sign Language PODER ('can') cannot be negated with a regular particle, and the suppletive PODER-NEG must be used (Pfau & Quer 2007:21).

Conversely, negative suppletives in the Corpus of Indonesian Sign Language Varieties often co-occur with other grammatical variants, for example the predicate might be negated using a suppletive, in one clause, and by variants (i), (ii) or (iii) in the next; with this in mind, chapter 6 argues for extending the definition of suppletion.

These four types of negation are regarded as variant paradigms, since many frequent predicates are negated using more than one type, and some can be negated using all four. Factors found to be statistically significant in predicting the realisation of the paradigmatic variable include several factors: predicate type (active, stative, nominal), response status (response, interjection or neither), constructed dialogue (deaf role, hearing role or neither), headshake presence, and syntagm of negation. As with completion, social factors are also important. With negative suppletion as an application value, age and region are significant: again, older signers in Makassar are found to disprefer the use of negative suppletive variants, and so it is younger signers in Solo who appear to be driving language change here.

Syntactic variation is also covered in chapter 6. Once the variable is circumscribed, 24.1% of negative constructions are found to occur in a pre-predicate slot, and 75.9% in a post-predicate or clause-final slot (n=238). Region and gender are significant factors, with women favouring a pre-predicate position (which reflects the order of Indonesian), along with signers from Solo. For gender, this would seem to mirror findings from other studies: Lucas and colleagues, for example, report that women may ‘produce more pronouns than men because overt pronouns represent a prestige variant’ (Lucas et al. 2001: 172).

Conclusion

The final chapter brings the findings together, and explores how completeive and negative variants came to be diffused across an extensive network of sign sub-communities across the archipelago. Linguistically, the patterns of variation found across Indonesia appear to be highly complex, and this can be explained by a range of linguistic and social factors that act simultaneously. Several factors exert a converging force, such as the education system, the abundance of contact between sub-communities, and widespread contact with the national language. Conversely, other factors have the opposite effect, such as geographic isolation and the existence of local languages, gestures, identities, religions and customs. This tension results in the perpetuation of linguistic heterogeneity across Indonesian sign varieties.

The grammatical domains of completion and negation reveal considerable lexical and grammatical variation and, on the surface, variation does not seem to pattern according to urban centre. However, there is evidence to suggest that, in some ways, these domains are more complex in Solo, compared with Makassar. Findings of multivariate analysis point to the conclusion that these domains 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 signers, especially from Solo. If completeive and negative forms are indeed increasing in complexity and irregularity, as this thesis contends, then further research is needed to investigate whether the relative complexity of social networks has a role to play in these changes.

Given the dearth of linguistic documentation, there was uncertainty at the outset of this study as to whether the Solo and Makassar varieties are more appropriately regarded as separate languages, or dialects of the same language, namely BISINDO (Bahasa Isyarat Indonesia, or ‘Indonesian Sign Language’). BISINDO is the preferred term of the Indonesian Association for the Welfare of the Deaf, but this term exists in conflict with the findings of lexicostatistical approaches. The (socio)linguistic perspectives explored in this investigation suggest that Indonesian sign varieties have striking and informative parallels with variation across isolects of Malay, the spoken language used all over the archipelago. It therefore seems to make sense to refer to isolects of a single language (Solo BISINDO, Makassar BISINDO, and so on) while still identifying BISINDO as a single linguistic entity.

This investigation raises a methodological challenge to practitioners who continue to use lexicostatistical methods that were devised in the 1950s. It shows that rapid wordlist elicitation and lexicostatistics motivated by language delineation cannot cope with the complexity of (socio)linguistic variation in Indonesia, and offers little value for sign communities. Sign language sociolinguists are urged to welcome

conceptual frameworks and analytic practices nurtured by spoken language sociolinguists over the last 50 years, and to apply these practices and frameworks with active and ongoing participation from sign communities, in line with a model of continuous engagement (Dikyuva et al., 2012; Dikyuva, 2013).

References

- De Vos, Connie. 2012. Sign-Spatiality in Kata Kolok: How a village sign language of Bali inscribes its signing space. PhD dissertation, Max Planck Institute of Psycholinguistics, Nijmegen.
- Dikyuva, Hasan. 2011. Grammatical non-manual expressions in Turkish Sign Language. MA dissertation, University of Central Lancashire, Preston.
- Dikyuva, Hasan. 2013. Academics and Deaf communities: The 'Deaf voice'. A presentation at the iSLanDS workshop on Realising the Link – Academics and Deaf Community Development, 17 June 2013, University of Central Lancashire, Preston.
- Dikyuva, Hasan, Cesar Ernesto Escobedo Delgado, Sibaji Panda and Ulrike Zeshan. 2012. Working with village sign language communities: Deaf fieldwork researchers in professional dialogue. In: Ulrike Zeshan & Connie de Vos (eds.) *Sign Languages in Village Communities. Anthropological and Linguistic Insights*. Berlin: de Gruyter and Ishara Press, 313-344.
- Fischer, Susan and Qunhu Gong. 2010. Variation in East Asian sign language structures. In: Diane Brentari (ed.) *Sign Languages*. Cambridge: Cambridge University Press.
- Hopper, Paul J. 1991. On some principles of grammaticalization. In: Elizabeth Closs Traugott and Bernd Heine (eds.) *Approaches to Grammaticalization, Volume 1*. Amsterdam: Benjamins, 17–36.
- Isma, Silva Tenrisara Pertiwi. 2012. Signing varieties in Jakarta and Yogyakarta: Dialects or separate languages? MA thesis, CUHK, Hong Kong.
- Lucas, Ceil, Robert Bayley and Clayton Valli. 2001. *Sociolinguistic Variation in ASL*. Washington DC: Gallaudet University Press.
- Marsaja, I. Gede. 2008. *Desa Kolok – A Deaf Village and its Sign Language in Bali, Indonesia* Nijmegen: Ishara Press.
- Palfreyman, Nick. submitted. 'Social meanings of linguistic variation in Indonesian Sign Language'.
- Pfau, Roland and Josep Quer. 2007. On the syntax of negation and modals in German Sign Language (DGS) and Catalan Sign Language (LSC). In: Pamela Perniss, Roland Pfau and Marcus Steinbach (eds.) *Visible Variation: Comparative Studies on Sign Language Structure*. Berlin: de Gruyter.
- Tang, Gladys. 2006. Questions and negation in Hong Kong Sign Language. In: Ulrike Zeshan (ed.) *Interrogative and Negative Constructions in Sign Languages*. Nijmegen: Ishara Press. 198-224.
- Woodward, James. 1993. The Relationship of Sign Language Varieties in India, Pakistan, and Nepal. *Sign Language Studies* 78, 15-22.
- Woodward, James. 2000. Sign languages and sign language families in Thailand and Vietnam. In: Karen Emmorey and Harlan Lane (eds.) *The Signs of Language Revisited: An Anthology to Honor Ursula Bellugi and Edward Klima*. Mahwah, NJ: Erlbaum, 23-47.
- Woodward, James. 2011. Some observations on research methodology in lexicostatistical studies of sign languages. In: Gaurav Mathur and Donna Jo Napoli (eds.) *Deaf Around the World: The Impact of Language*. Oxford: Oxford University Press, 38-53.
- Zeshan, Ulrike. 2006. *Interrogative and Negative Constructions in Sign Languages*. Nijmegen: Ishara Press.

Table of contents

1. Introduction: Sign language varieties of Indonesia
 - 1.1. Signed languages, modality and variation
 - 1.2. Natural sign languages and artificial sign systems
 - 1.2.1. Natural sign languages and language contact
 - 1.2.2. Educational intervention through artificial sign systems
 - 1.3. The concept of an ‘urban sign community’
 - 1.4. The linguistic ecology of urban sign language varieties in Indonesia
 - 1.4.1. Indonesia: a brief geographic, demographic and historical overview
 - 1.4.2. Spoken languages in Indonesia
 - 1.4.3. Demography and proximity of sign community members
 - 1.4.4. Attitudes towards deafness and sign language
 - 1.5. Existing research on sign language varieties in Indonesia
 - 1.6. Research questions and thesis structure
2. Analysing sign language variation: Methodological approaches
 - 2.1. Sociolinguistic dilemmas for linguists
 - 2.1.1. Mutual intelligibility and competing definitions of ‘language’
 - 2.1.2. Language as a socio-political construct
 - 2.1.3. The naming and delineation of sign languages
 - 2.2. The use of lexicostatistical methods in sign language research
 - 2.2.1. What is lexicostatistics?
 - 2.2.2. Lexicostatistical studies of sign language varieties
 - 2.2.3. Applying lexicostatistical methods to sign languages: some problems
 - 2.2.4. Comments on the application of lexicostatistical methods
 - 2.2.5. Summary: the need to move away from lexicostatistics in Indonesia
 - 2.3. Approaches to analysing sign language variation
 - 2.3.1. Variationist Sociolinguistics
 - 2.3.2. Linguistic typology and contrastive linguistics
 - 2.3.3. Corpus linguistics
 - 2.4. Chapter summary
3. Method and research design
 - 3.1. Conceptual and empirical framework
 - 3.1.1. Conceptual and methodological approaches
 - 3.1.2. Empirical data and data interpretation
 - 3.2. Fieldsites and fieldtrips
 - 3.3. Linguistic data collection and sampling
 - 3.3.1. Convenience sampling
 - 3.3.2. The selection of spontaneous, natural texts
 - 3.3.3. Balanced sampling and the selection of texts
 - 3.3.4. Text types and the comparability of texts
 - 3.4. Identifying target domains, variables and variants
 - 3.5. Transcription and annotation of linguistic data
 - 3.5.1. Glossing and the identification of variants
 - 3.5.2. Annotation
 - 3.6. Quantitative analysis of linguistic data
 - 3.7. Ethical considerations
 - 3.7.1. Working with and through the community
 - 3.7.2. Practical ethical issues associated with data collection and storage
 - 3.7.3. Actual and anticipated research outputs for the sign community
4. A history of contact between sign language sub-communities
 - 4.1. Sources of sociohistorical data

- 4.2. The development of deaf education
 - 4.2.1. Foundation of private deaf schools (1930s onward)
 - 4.2.2. National and transcolonial links in deaf education
 - 4.2.3. The likely origins of the two-handed alphabet
 - 4.2.4. 'Schoolization' and multidialectalism
- 4.3. The development of the sign community
 - 4.3.1. Emergence of local deaf organisations in Java (1960s onward)
 - 4.3.2. Gerkatin, the Indonesian Association for the Welfare of the Deaf
 - 4.3.3. Internal migration and social contact between sign sub-communities
 - 4.3.4. Transnational language contact
 - 4.3.5. The virtual sign community
- 4.4. The effects of language policy and planning on sign language varieties
 - 4.4.1. SIBI: Language contact and language planning
 - 4.4.2. BISINDO, isyarat lama and the growing awareness of sign language
- 4.5. Chapter summary

5. Variation in the grammatical domain of completion

- 5.1. Aspect and completion
 - 5.1.1. Perfect and perfective aspects
 - 5.1.2. A working definition of the completive aspect
 - 5.1.3. Motivation for targeting the grammatical expression of completion
 - 5.1.4. The completive aspect in spoken languages
 - 5.1.5. The completive aspect in signed languages
- 5.2. Completion in the Solo and Makassar sign language varieties
 - 5.2.1. Completive particles
 - 5.2.2. Completive clitics
 - 5.2.3. Completive mouthings
 - 5.2.4. Distribution of completive forms
- 5.3. The functions of completive markers
 - 5.3.1. Sentence level
 - 5.3.2. Discourse level
 - 5.3.3. Pragmatic level
- 5.4. Lexical and grammatical variation in the domain of completion
 - 5.4.1. Circumscribing the variable context
 - 5.4.2. Data coding
 - 5.4.3. Rbrul findings
 - 5.4.4. Variation in the form of manual completion (Analysis 1)
 - 5.4.5. Grammatical variation in the domain of completion (Analysis 2)
 - 5.4.6. Limitations
- 5.5. Intra-individual persistence and variation
 - 5.5.1. Data coding
 - 5.5.2. Findings
 - 5.5.3. Discussion
- 5.6. Chapter summary

6. Variation in the grammatical domain of negation

- 6.1. Negation and negative constructions
 - 6.1.1. Grammatical and psychological negation
 - 6.1.2. Motivation for targeting the grammatical domain of negation
 - 6.1.3. Negation in spoken languages
 - 6.1.4. Negation in sign languages
 - 6.1.5. (Socio)linguistic variation in sign languages
- 6.2. Negation in the Solo and Makassar sign language varieties
 - 6.2.1. Negative particles
 - 6.2.2. Negative clitics
 - 6.2.3. The negative particle TIDAK with mouthed predicate constructions
 - 6.2.4. Negative suppletion

- 6.2.5. Non-manual features and negation
 - 6.2.6. Negation through derivational morphology
 - 6.3. Grammatical variation in the domain of negation
 - 6.3.1. Circumscribing the variable context
 - 6.3.2. Coding for quantitative analyses
 - 6.4. Basic clause negator vs. other types of negation
 - 6.5. Paradigmatic variation
 - 6.5.1. Free negative particle
 - 6.5.2. The negative particle TIDAK with a mouthed predicate
 - 6.5.3. Negative suppletion
 - 6.5.4. Discussion
 - 6.6. Syntactic variation
 - 6.7. Headshake variation
 - 6.8. Chapter summary
7. Conclusion
- 7.1. Social networks and the diffusion of variants
 - 7.2. Factors that favour and disfavour the convergence of varieties
 - 7.3. Directions for research on sign language variation and change
 - 7.4. The significance for the Indonesian sign language community

Author's address

Dr. Nick Palfreyman

International Institute for Sign Languages and Deaf Studies
University of Central Lancashire, Preston PR1 2HE, United Kingdom
nickpalfreyman@cantab.net