

**A PRELIMINARY SURVEY OF THE SIGNED LANGUAGES OF MALAYSIA**

Hope M. Hurlbut

Summer Institute of Linguistics

Malaysia

American Sign Language (ASL) was first introduced to Malaysia in the early 1960s by Mr. Tan Yap, who took a leave of absence from work for one year to study ASL and help the deaf of Malaysia. He is now called the “Father of the Deaf” by the Malaysian Deaf.

The only school for the Deaf in Malaysia then was in Penang, and oralism was the method of teaching. The students themselves developed their own indigenous sign language, now called Penang Sign Language (PSL). In 1976, ASL was introduced into the school in a pilot class and eventually was approved for widespread use in 1979. With the introduction of ASL, the use of PSL diminished and is mainly used now only by the older generation.

According to the Ethnologue, a comprehensive listing of the world’s languages, there are three sign languages in Malaysia, namely Malaysian Sign Language or Kod Tangan Bahasa Malaysia (KTBM), Penang Sign Language, and Kuala Lumpur Sign Language. KTBM is a sign language borrowed from ASL mixed with some local signs. It is used to teach Malay, the national language to deaf students. Kuala Lumpur Sign Language (KLSL) also began with ASL as introduced by Mr. Tan Yap.

In 1999, the SIL International undertook a survey of the signed languages of Malaysia. Word lists were taken in Penang, Kuala Lumpur, Kuching and Kota Kinabalu. There were some unexpected results from comparisons of the word lists, especially two that were only 51% cognate taken from two speakers of KLSL, an older and a younger man.

The results of the word list comparisons pointed out the need for intelligibility testing between speakers of the various sign languages. The paper focusses on is the results of

the intelligibility testing done between the various languages and dialects using videotaped stories.

## **0. INTRODUCTION**

According to the Ethnologue (1996), there are three sign languages in Malaysia, namely, Kuala Lumpur Sign Language (KLSL) which is based on American Sign Language (ASL), Malaysian Sign Language, (also known as Bahasa Malaysia Kod Tangan (sic) (KTBM)), which is being developed by the Malaysian government,<sup>1</sup> and Penang Sign Language (PSL), which was developed by the Deaf<sup>2</sup> children outside the classroom in the days of oralism.

As part of the language survey of Malaysia, Hope Hurlbut (a member of the Summer Institute of Linguistics (SIL)<sup>3</sup>), and Anne Laura Raymond (a Deaf Kadazan lady), started a survey of the Signed Languages of Malaysia in August 1999. Later another Deaf Kadazan lady, Irene Gubud, took over from Anne Laura Raymond, and worked on the project full-time for several months. Word lists were videotaped from all the states in Malaysia. Stories were also videotaped from many subjects, usually two-six in each place visited.

This initial phase of the survey was a level 1 or Rapid Appraisal Survey (see Parkhurst 1998).

The level 2 phase of the survey or Recorded Text Testing was begun in March 2000 when some of the states were revisited and ten or more subjects saw some of the stories and were asked questions to test their comprehension of other dialects and languages.

## **1. BACKGROUND**

Only a small percentage of Deaf children in Malaysia attend school. Based on a worldwide average of .3%<sup>4</sup> of a given population being born deaf, there are approximately 66,000 congenitally deaf people in Malaysia. About 20% of them are

---

<sup>1</sup> The government recognizes only Manually Coded Malay (KTBM) as the language of communication for the Deaf.

<sup>2</sup> Some years ago the convention was started in the United States of using upper case Deaf to refer to those who are hearing impaired, use sign language and consider themselves to be part of a community of Deaf people. Lower case deaf refers to the hearing impaired, often older people, who are more comfortable in the hearing world. (Parkhurst, 1997)

<sup>3</sup> SIL International is an organization that has specialized in working with minority groups around the world for more than 60 years. SIL International began to be interested in the signed languages of the world only about 10 years ago.

<sup>4</sup> Parkhurst (1997) uses this figure to refer to the profoundly deaf in Spain, but the figure has been documented elsewhere as well.

registered with the Social Welfare Department, so probably only 20% of Deaf children ever go to school. These figures do not include children who have been deafened by illness or accident. Altogether throughout Malaysia there are twenty-three Primary Schools for Deaf children, and a few deaf children are integrated in mainstream classes. Some of these children continue on to secondary school. Currently there are over 500 high school age Deaf students in Peninsular Malaysia, 300 in Shah Alam Vocational School and 225 in Penang Special Education High School. In Sabah there are about fifty Deaf children in high school and Sarawak has approximately the same number.

## **2.0 HISTORY OF DEAF EDUCATION IN MALAYSIA**

### **2.1 Deaf Education in Penang**

The Signed Language Survey began in Penang at the Special Education High School, which is a school for the Deaf. On the same premises there is also a primary school for the Deaf. The primary school was started in 1954 on the initiative of a doctor, C.E. Fields, who learned that nothing was being done to educate Deaf children, although a blind school had been started in 1928. The school was based on oralism and signing was forbidden, though one Deaf man informed us that whenever the teacher would write on the board the students would “whisper” to each other (i.e. make small signs down near their hips). Thus Penang Sign Language was born. Until the introduction of Total Communication<sup>5</sup> in 1976, Penang Sign Language (PSL) was the language of communication for the Deaf who studied in Penang. These children came from all over what is now known as Malaysia, as there were no other classes for Deaf children for several years. There were probably a total of about 4,800 speakers of PSL before American Sign Language was introduced.

One of the most important people in the history of the school in Penang is Dato’ Hajah Saleena Yahaya Isa. She began helping at the school on a voluntary basis in 1954, while still teaching at another school. Eventually she transferred to the Federation School for the Deaf (FSD) as the school was then called, and was made headmistress in 1961. She remained with the school until her retirement in 1987. During her tenure, Eleanor Culas became the first Deaf Student from Malaysia to be accepted into Gallaudet College in Washington, D.C. in the early 1970's. Eleanor persuaded one of her professors, Frances M. Parson, to stop by Penang when she was on a world tour. Professor Parson introduced the concept of Total Communication to Dato’ Saleena and the teachers in the school using American Sign Language (ASL) in 1976. With the permission of the then Minister of Education, Dato Seri Dr. Mahathir bin Mohammad, a pilot class was started on a trial basis for five years. After three years when it was demonstrated that the children in the pilot class were far ahead of their peers, permission was granted to introduce Total

---

<sup>5</sup> Total Communication is a concept used in most countries now for the education of the Deaf. It includes manual signs, finger spelling, lip-reading, facial expressions and body language.

Communication in all the classrooms for the Deaf children of Malaysia. Special education teachers from around Malaysia went to Penang to learn the new concepts. As a result of the introduction of ASL, Penang Sign Language (PSL) began to lose its importance. At present mainly older people use it, though some young people have also learned it. Some of the older people told us that they have dropped the use of PSL now and use only ASL, though only one subject achieved a score of 90% on the ASL story during the testing phase of the survey, demonstrating high proficiency with ASL.

## **2.2 Deaf Education in Kuala Lumpur**

In the early 1960's a man by the name of Tan Yap was in contact with some deaf children in Johor. (He is now called the "Father of the Deaf" by some of the Deaf.) Mr. Tan Yap was a pharmacist, but he was so moved by the plight of the Deaf in the country that several times he took a short leave of absence without pay from his work in Johor and went to the United States to take courses in sign language and interpreting for the Deaf. In the evenings, Mr. Tan Yap would teach American Sign Language (ASL) to the Deaf children. He also persuaded some nurses to help out and he taught a few other hearing people how to sign.

In 1964 the Social Welfare Department helped him to start a class for the Deaf which was free. At first the school was small with only two or three children, but later it expanded to five or six children, all school dropouts. They were taught the basics of reading, writing and arithmetic, as well as sign language. Eventually there were thirty-five enrolled in the class.

In 1968 Mr. Tan Yap was transferred to Kuala Lumpur where he started another class for about twelve Deaf children who were school dropouts. In the early 1970's the classes were moved to Bukit Nanas. Eventually the school grew to about 200 children before it was moved to a new school in Kelana Jaya built by a Japanese philanthropist in 1993. Mr. Tan Yap retired from the school in 1995, and started the Community Service Centre for the Deaf at the end of the year. The centre is a beehive of activity and offers counselling, help in seeking employment, some education for the Deaf (especially those with special needs), tutoring and other services.

Another entity that has had a major influence on the Deaf in Kuala Lumpur is the YMCA. The Deaf Club there was founded in 1973 by Mr. Tan Yap, the YMCA's Men's Club and some other volunteers. There is now also a centre for the Deaf at the YMCA called "Pusat Majudiri Y". There are a couple of interpreters working there, who help the Deaf with legal problems, arrange for excursions, sports meets, and lectures on various topics for the Deaf, among other things. There are classes in American Sign Language for the hearing, a small kindergarten class to teach sign language to Deaf pre-schoolers and tutoring for older Deaf children. A Laundrette run completely by the Deaf is housed at the YMCA as well.

Mr. Tan Yap introduced the idea of Deaf teachers teaching Deaf children at the Bukit Nanas school. He also invited three Peace Corps volunteers to help there in the early 1970's. More recently an American Deaf lady by the name of Heather joined the teaching staff in the early 1990's. She was a graduate from Gallaudet University and provided an example to the Malaysian Deaf of what can be achieved by a Deaf person who works hard and perseveres.

Mr. Tan Yap is now eighty-three years old, and officially retired, but he is still active in promoting the welfare of the Deaf. In addition to his work as a pharmacist, and work with the Deaf, Mr. Tan Yap has taught American Sign Language (ASL) and Deaf Culture to government officers, and the trainees in the Specialist Teachers' Training Institute. He also taught ASL to the nurses and pharmacists in several hospitals, the police force and welfare workers in Kuala Lumpur, Ipoh and other cities throughout Malaysia.

### **2.3 Deaf Education in Sarawak**

The government began a primary class for Deaf children in Kuching in the 1960's. The children were allowed to spend up to two extra years in the early grades of primary school as necessary. There are now three primary schools for Deaf children in Sarawak and one high school. Probably only 15% of the Deaf children of Sarawak go to school.

A lady by the name of Nouline Patterson began the use of Total Communication using American Sign Language (ASL) to educate the Deaf children in 1980-1985. The children now use Malaysian Sign Language (MSL) outside of class.

Uneducated Deaf adults are able to go to the Sarawak Society for the Deaf (SSTD) to learn some sign language and practical skills. The women are taught sewing, and some are now in private business. The men are taught car-washing and other skills.

### **2.4 Deaf Education in Sabah**

Many years ago the Deaf children of Sabah had no choice for education except to go to the Federation School for the Deaf in Penang. Some children were sent to normal schools, but did not benefit much. In 1975 the Rotary Club of Kota Kinabalu started the Sabah Society for the Deaf (SSD), but the Society was inactive for ten years. In 1986 the government set aside classrooms for Deaf primary school children at Peter Mojuntin School where these children could pursue their education. Since many of the children came from rural areas the Rotary Club started their first project for the Deaf students, a hostel for the rural children. They discovered that the children had no background in education and decided to fill the need by starting a kindergarten for them. They advertised for someone willing to learn sign language and start a kindergarten for Deaf children. Geraldine Chin responded to their advertisement and was sent to Kuala Lumpur

for training. While she was studying, Anne Laura Raymond, a Deaf lady, and Doris Kow, a teacher and mother of two Deaf children, started classes for the hearing. When Geraldine returned she started with a class of five children.

Deaf children in Sabah can now study up to Form Three high school. To finish high school it is still necessary for Deaf students to go to the residential school for the Deaf in Penang.

## **2.5 Deaf Education in Other States**

Over the years the government has started a school for the Deaf in every state in Malaysia. However some states are very large and distances are great, so many parents are reluctant to send their Deaf children to the school. Enrollment tends to be low compared to the number of potential students.

## **3.0 RAPID APPRAISAL SURVEY**

For the Rapid Appraisal survey we used a word list of two parts. Part one consisted of 111 pictures, most of them borrowed from the Canadian Signed Language Survey done in 1998 (Staley 1998).

Part two consisted of 129 words. There were three languages available for the written word section, i.e. Malay (Bahasa Melayu), English and Chinese. The Malay words were on flash cards using size 72 point type printed out from a computer. The English and Chinese were the same size of type, but were in a single column on A4 paper. This gave a total of 240 words. Unfortunately part one and part two each had the words “man” and woman”, leaving 238 unique items. Later it was discovered that a few other words such as “strawberry” were not well known and had to be eliminated. In some cases the pictures were not contextualized for Malaysia, such as “bathroom” from North America. When all the potentially ambiguous or unknown words were eliminated the list contained only 196 clearly distinct and well-known items. In no case were we able to get a “perfect” list, i.e. a sign for every word and picture.

The subjects were asked which language they preferred and we used that word list when eliciting the signs. Many of the older Deaf know very little Malay since they went to school before the formation of Malaysia and all their schooling was in English.

In a survey of spoken languages, a variety of age groups is tested with an equal number of men and women. We found that this was not possible for the survey of the Signed Languages of Malaysia. Firstly, Penang Sign Language and Kuala Lumpur Sign Language are basically used only by older people between the ages of forty and fifty-five. The oldest subject for these two groups was fifty-four and we tested two as young as thirty-five, as they had spent a few years studying in the days of oralism. Secondly, most

of the Deaf we met were Chinese. The Chinese in the past considered it more important for the boys to be educated than for the girls, especially if they were handicapped in any way. In the one state where we tested only Muslims there were an almost equal number of men and woman. (See Appendix A.)

Subjects were usually limited to educated people as the uneducated usually did not know much sign language, unlike the subjects for spoken languages who are proficient in their own language regardless of their educational status.

### **3.1 Penang**

Three word lists and several stories were collected in Penang,<sup>6</sup> namely, Penang Sign Language (PSL), Manually Coded Malay or Kod Tangan Bahasa Malaysia (KTBM) and Malaysian Sign Language (MSL), the language that is in every day use by the Deaf in Penang. Malaysian Sign Language is a term used by the Deaf to refer to their language. (Another term that is being introduced is *Bahasa Isyarat Malaysia* (BIM), literally "Language Sign Malaysia".) Sometimes they shorten the term to "Malaysian" which can refer to both their own language and spoken Malay.

Manually Coded Malay has been adapted from American Sign Language (ASL) by the government with the addition of some local signs, and signs representing the affixation of the nouns and verbs in spoken Malay. It is used in the schools for the deaf for the purpose of teaching the national language, Malay (also known as *Bahasa Malaysia*).

### **3.2 Kuala Lumpur**

In Kuala Lumpur two word lists were collected, one for Malaysian Sign Language (MSL) as used in Kuala Lumpur and one for MSL as used in Kedah. Two stories were collected from each of the language assistants. Two other word lists were collected for Kuala Lumpur Sign Language (KLSL), one from a thirty-eight year old man, and one from a forty-eight year old man. A total of seven stories were also collected in KLSL.

We paid an official visit to the President of the Malaysia Federation of the Deaf (MFD), Mohamad Sazali Shaari, who is a multilingual Deaf. He can speak both Bahasa Malaysia and English, as well as Malaysian Sign Language. He founded the Kuala Lumpur Society of the Deaf (KLSL) in 1987, and currently is the President of that body which works out of the same premises as the MFD. He stated that the sign language used in Johor is different from the other sign languages, but he also mentioned that every state has its own sign language and suggested that we do a comprehensive survey of sign language in all the states.

---

<sup>6</sup> See the map in Appendix B for the location of the various states in Malaysia.

Nine of the state level Deaf Clubs and Associations of Malaysia have united under the umbrella of the MFD. There are Deaf clubs or associations in all but one of the remaining states that have not yet become members.

The KLSA is going ahead with their production of a dictionary of Malaysian Sign Language (MSL), in spite of the fact that the government does not yet recognize MSL.

### **3.3 Sarawak**

In Sarawak, we were able to collect a word list in Chinese Sign Language from a Deaf lady who had studied in Taiwan. We were not able to find out where she went to school in Taiwan, but her Chinese seemed to be quite good. She could readily look up a sign that she had forgotten in a Chinese to Sign Language dictionary she had. We also got a story from her. Her Deaf sister who studied Malay in Penang was absent at the time so we could not get a word list from her.

We were also able to get a word list and story from a user of Malaysian Sign Language. Unfortunately her Malay was poor so she missed about 30% of the written part of the word list.

### **3.4 Other States**

A word list and story were collected in Sabah before the second data-collecting trip in Peninsular Malaysia. The second trip was undertaken to follow up the suggestion made by Mohamad Sazali, President of the Malaysian Federation for the Deaf, that all the states in Malaysia be surveyed.

Word lists and stories were collected in the following states on the Peninsula: Melaka, Johor, Kelantan, Terengganu, Pahang, Kedah, Perak, Selangor and Negeri Sembilan. Perlis was omitted because several Deaf (including two men from Perlis) assured us that their sign language was identical with that of the neighbouring state of Kedah. However, the president of one of the Deaf societies later insisted that we not neglect Perlis because it was different, so a list was collected on the next trip. In Negeri Sembilan we were not able to get a word list for Malaysian Sign Language, only Chinese Sign Language (from Singapore), bringing the total of Chinese Sign Language lists to five. We had to get the Malaysian Sign Language list at a later date also.

## **4.0 Results of the Preliminary Comparisons of the Word Lists**

The word lists were transcribed using the system known as SignWriter which was invented by Valeria Sutton (Sutton 1999). This system uses hand shapes based on the expressive point of view of the signer, with arrows to indicate the type of movement and direction, and other symbols to show the type of contact, the location of the hands and

place of contact, body movement and facial expression. Not all the parameters are significant in every sign, and the transcription only includes the significant features of each sign. For the first word list transcribed the subject was very expressive, so a lot of time was spent catching all the facial nuances. For succeeding word lists, some subjects showed no expression at all, or only showed expression for certain significant signs. Several of the subjects would mouth or say the words in English or Malay or a mixture of both. This would obscure the natural expression that would occur with the sign, but this seems to be a normal feature of the language used by the Deaf brought up with oralism.

There were several surprises in the comparisons of the word lists. For example, we expected the two word lists collected for Kuala Lumpur Sign Language (KLSL) to be similar, since one was from a thirty-eight year old man and the other from a forty-eight year old man who were both considered to be "older" Deaf who had learned American Sign Language (ASL) when it was first introduced. However, the two lists showed only 51% similarity at first. After the adjustments were made for the problem words, the percentage of similarities rose to only 58%. When the list from the thirty-eight year old man was compared with the list from the twenty-six year old man in Kuala Lumpur and adjusted for the problem words, the percentage of similarities rose to 82% showing that there is a wide variation in the dialects used in Kuala Lumpur. The list from the thirty-eight year old man can eventually be eliminated from the comparisons, since it seems to be a dialect of Malaysian Sign Language, not KLSL. The highest percentage of similarities compared with ASL was not with the older generation as expected since they supposedly had learned ASL originally, but with the youngest member of the Kuala

<b>CHART OF PERCENTAGE OF SIMILARITIESS FOR THE INITIAL SURVEY</b>																			
<b>ASL</b>	<b>ASL</b>																		
<b>MSL-KL</b>	82	<b>MSL-KL</b>																	
<b>MSL-SLR</b>	72	75	<b>MSL-SLR</b>																
<b>MSL-NS</b>	69	79	73	<b>MSL-NS</b>															
<b>MSL-MEL</b>	61	82	73	74	<b>MSL-MEL</b>														
<b>MSL-JOH</b>	77	72	68	69	75	<b>MSL-JOH</b>													
<b>MSL-PAH</b>	69	75	71	74	72	75	<b>MSL-PAH-</b>												
<b>MSL-TER</b>	55	74	69	65	71	68	75	<b>MSL-TER</b>											
<b>MSL-KEL</b>	69	80	73	79	75	68	80	73	<b>MSL-KEL</b>										
<b>MSL-PRS</b>	72	84	76	80	75	71	80	75	83	<b>MSL-PRS</b>									
<b>MSL-KED</b>	75	80	68	74	75	64	67	63	72	77	<b>MSL-KED</b>								
<b>MSL-PEN</b>	70	88	70	74	75	70	74	69	79	84	76	<b>MSL-PEN</b>							
<b>MSL-PRK</b>	71	80	74	78	74	72	77	74	78	80	73	76	<b>MSL-PRK</b>						
<b>MSL-SBH</b>	77	80	66	72	69	73	72	69	75	74	68	76	75	<b>MSL-SBH</b>					
<b>MSL-SWK</b>	68	83	70	73	81	68	68	68	76	80	72	79	71	70	<b>MSL-SWK</b>				
<b>KLSL-30+</b>	74	82	78	75	74	75	77	75	76	83	70	82	76	77	74	<b>KLSL -30+</b>			
<b>KLSL-40-50</b>	52	59	61	55	51	53	65	54	54	59	48	60	60	55	54	58	<b>KLSL-40-50</b>		
<b>PSL</b>	40	44	43	43	41	35	49	51	39	43	39	52	42	46	43	44	59	<b>PSL</b>	
<b>KTBM</b>	80	88	67	75	75	69	67	63	75	70	76	79	66	72	82	71	52	36	<b>KTBM</b>
<b>CSL-TAI</b>	37	39										45							<b>CSL-TAI</b>

## Abbreviations in Chart

ASL	American Sign Language
MSL-KL	Kuala Lumpur version of Malaysian Sign Language
MSL-SLR	Selangor version of Malaysian Sign Language
MSL-NS	Negeri Sembilan version of Malaysian Sign Language
MSL-MEL	Melaka version of Malaysian Sign Language
MSL-JOH	Johor version of Malaysian Sign Language
MSL-PAH	Pahang version of Malaysian Sign Language
MSL-TER	Terengganu version of Malaysian Sign Language
MSL-KEL	Kelantan version of Malaysian Sign Language
MSL-PRS	Perlis version of Malaysian Sign Language
MSL-KED	Kedah version of Malaysian Sign Language
MSL-PEN	Penang version of Malaysian Sign Language
MSL-PRK	Perak version of Malaysian Sign Language
MSL-SBH	Sabah version of Malaysian Sign Language
MSL-SWK	Sarawak version of Malaysian Sign Language
KLSL-30+	Kuala Lumpur Sign Language - 30-40 years old
KLSL-40-50	Kuala Lumpur Sign Language - 40-50 years old
PSL	Penang Sign Language
KTBM	Kod Tangan Bahasa Malaysia (Manually Coded Malay)
CSL-TAI	Chinese Sign Language from Taiwan

Lumpur group of Deaf with 82% similarity to ASL. Manually Coded Malay which is based heavily on ASL has 80% similarity to ASL. The rest of the percentages of similarity between ASL and word lists from other Malaysian Signed Languages dropped from there down to only 40% between ASL and Penang Sign Language which was expected. The highest percentage of similarities between Malaysian Sign Language as used in KL and that used in other states was 88% with Penang.

Comparing the word lists between the various states showed that the majority of the states shared more similarities with the Malaysian Sign Language (MSL) used in Kuala Lumpur than elsewhere. As a result the Kuala Lumpur word list was chosen as the standard for the word lists, and also the story in MSL Kuala Lumpur was used later in testing the comprehension of the subjects during the Recorded Text Testing phase.

### **5.0 Recorded Text Testing**

The Recorded Text Testing (RTT) phase was carried out in 6 areas - Penang, Terengganu, Pahang, Johor, Kuala Lumpur/Selangor and Negeri Sembilan. Any of the states which had word lists of 80% similarity and above with MSL Kuala Lumpur were not tested during this first phase of the testing because of time constraints.

The initial testing phase was carried out by using the previously collected stories on videotape. Most of these had blanks at the appropriate places for asking questions. A few that were collected later had no blanks because of lack of technical assistance, but the operator stopped the tape at the appropriate place in the story for the assistant to ask the questions. This left the picture on the screen, often with the sign needed for the answer visible on the screen. This did not seem to affect the answer of the subjects. If the subject understood the story, he or she always turned to the assistant to get the question and answered immediately. Those who did not understand would often stare at the screen, hoping for help from what was visible, but would miss the answer even though it was visible.

In the RTT phase the aim is to get ten subjects whose sign language is good enough to be able to answer the questions accurately. (In Negeri Sembilan we were only able to find a total of eight subjects.) First of all, the procedure was explained to the subject. Then a story was shown signed by a man now living in Kuala Lumpur. (See Appendix C.) Ten questions were asked about the story, trying to accustom the subject to the procedure. Many subjects assumed that the man in the story was there to give them an example of what to answer. Sometimes it took several explanations to help the subject understand that he or she was supposed to answer the questions about the man on the screen, not about their personal stories.

The next tape was the ``Hometown Tape``, which was a story by someone in the same state, often a person well known to the subject. Sometimes this posed a problem, as the

subject would try to answer from his or her knowledge of the person rather than answering from the story on the screen. The assumption is that every subject will understand the hometown tape perfectly and should get all ten questions correct. However, this happened in only five cases out of the seventy-eight people tested. For spoken languages the score on the hometown tape always has to be at least eight out of ten questions correct, but we found that this did not work for the Deaf. No matter how badly the subject did at answering questions on the hometown tape we always showed him or her at least one or two more stories, so as not to embarrass the subject by quitting too abruptly. Sometimes to our surprise the scores kept improving with each succeeding tape, showing that the subjects were gradually learning the procedure. If the score of any of these tapes reached or exceeded eight we continued the testing to the end. We found that often it took them up to three or four tapes before they understood the procedure well enough to get scores of eight, nine or ten on any tape. This factor skewed the results of the RTT. Negeri Sembilan was the only state where no one was able to attain a score of eight or more on the hometown tape, but the number of subjects were too few for this to be significant.

The next two tapes shown were from neighbouring states.

The last tape had three stories, the first in Malaysian Sign Language (MSL) from Kuala Lumpur, the second in Manually Coded Malay (KTBM) and the third in American Sign Language (ASL). According to the Ethnologue (1996), the KLSL speakers had studied in Penang, so we added a story from Kuala Lumpur Sign Language (KLSL) preceding the story from MSL Kuala Lumpur when testing in Penang, even though the percentage of similarities between the Penang Sign Language (PSL) and KLSL word lists was quite low at 58%.

The following states shared 80% similarities or above with MSL Kuala Lumpur: Melaka, Perak, Penang, Kedah, Perlis, Kelantan, Sabah, Sarawak and the list taken from the 38-year old Deaf man in Kuala Lumpur (see Chart - KLSL-30+). The percentage of similarities varied from 80-88%.

Except for Negeri Sembilan, the other states had shared similarities of only 71-75% with MSL Kuala Lumpur. Negeri Sembilan had 80% similarity with Perlis, but only 79% similarity with MSL Kuala Lumpur.

## **5.1 RECORDED TEXT TESTING IN PENANG**

Since Penang Sign Language (PSL) was proved to be a separate language by counting the percentages of similar words from all the states in Malaysia, Recorded Text Testing (RTT) was carried out first with speakers of Penang Sign Language. As mentioned above, the language developed in the Federation School for the Deaf in Penang during the

late 1950's and 1960's during the days of oralism. The highest percentage of similarities was with Kuala Lumpur Sign Language at 59%.

In the RTT phase the tapes used were the practice tape, the hometown tape (PSL), the Malaysian Sign Language tape taken in Penang (MSL-PEN), the Malaysian Sign Language tape taken in Kedah (MSL-KED) the neighbouring state, the Kuala Lumpur Sign Language (KLSL) tape, the Malaysian Sign Language tape taken in Kuala Lumpur (MSL-KL), the Manually Coded Malay (KTBM) tape and the American Sign Language (ASL) tape.

Thirteen subjects were interviewed and tested on the above tapes. Three of those proved to be unable to learn the testing procedures and had to be eliminated from the comparisons. Figure 1 displays the results of the intelligibility testing. (See also Appendix D for the combined results of the intelligibility testing.)

Tapes	H o m e t o w n - PSL	M S L - PEN	M S L - KED	KLSL	MSL-KL	KTBM	ASL
Test Point							
P e n a n g (PSL)	84	63	83	77	87	63	53

Figure 1 Intelligibility testing results for Penang Sign Language

The scores for MSL-PEN and KTBM were the same and were quite low. The latter was not surprising because none of the subjects had learned KTBM in school as it was introduced after they had completed their schooling. The score for MSL-PEN was surprisingly low since the PSL speakers said they had switched over to ASL and Malaysian Sign Language. The problem may have been that the signer for MSL-PEN signed very quickly, and the subjects ranged in age from thirty-nine to fifty-four. Some had not brought their glasses and had a problem seeing the signer on the camcorder screen. The score on the MSL-KL tape was equally surprising, showing that Malaysian Sign Language is the language in use now rather than ASL. Part of the problem with the ASL tape was the smallness of the image on the screen as the ASL speaker was standing ten to twelve feet away from the camera. All the other stories were videotaped with the signer seated only five to six feet from the camcorder.

## 5.2 RECORDED TEXT TESTING IN TEREANGANU

The second place where RTT was carried out was Terengganu, which had the lowest scores of similar words with other states in the country, the highest being 75% between Terengganu and Pahang, the neighbouring state to the south.

The tapes used in Terengganu for the RTT phase were as follow: the practice tape, the hometown tape (MSL-TER), the Malaysian Sign Language tape taken in Pahang (MSL-PAH), the Malaysian Sign Language tape taken in Kelantan (MSL-KEL) and the group of three tapes, MSL-KL, KTBM and ASL.

Fifteen subjects were interviewed and tested. Six of those proved to be unable to learn the testing procedures and had to be eliminated from the comparisons, leaving only nine subjects with satisfactory scores. The scores from the test were added up and divided by nine. Figure 2 displays the results of the intelligibility testing.

Test Point	Tapes Hometown- MSL-TER	M S L PAH	M S L KEL	MSL-KL	KTBM	ASL
MSL-TER	77	69	76	77	72	44

Figure 2: Intelligibility testing results for Malaysian Sign Language in use in Terengganu

Unlike other states there did not seem to be the same learning curve in Terengganu whereby the subjects continued to improve the more tapes they saw. However everyone improved enough to obtain at least a score of eight on one or more tapes. The lowest score on the hometown tape was six and the highest was ten. In the case of the MSL-PAH the lowest score was six and the highest was eight. For MSL-KEL the lowest score was six and the highest was nine. For MSL-KL the lowest score was five and the highest was nine. For KTBM the lowest score was 5.5 and the highest was ten. For ASL the lowest score was three and the highest was six.<sup>7</sup>

### 5.3 RECORDED TEXT TESTING IN PAHANG

From Terengganu we went south to the next state, Pahang. The highest percentage of similarities that Pahang shared with another state was 80% with both Kelantan and Perlis.

The tapes used in Pahang for the RTT phase were as follows: the practice tape, the hometown tape (MSL-PAH), the Malaysian Sign Language tape taken in Selangor (MSL-SEL), the Malaysian Sign Language tape taken in Perak (MSL-PRK) and the group of three tapes, MSL-KL, KTBM and ASL.

---

<sup>7</sup> After the testing in Terengganu we discussed the validity of the questions, because in some cases the sentence that was followed by a question was very short. We decided to change two of the questions on the Pahang tape and one on the KTBM tape to make it easier for people to follow the story, and hopefully improve understanding. This may have helped improve the scores in the succeeding testing.

Fourteen subjects were interviewed and tested in Pahang, but five of those proved to be unable to learn the testing procedures and had to be eliminated from the comparisons. Another subject from Pahang living elsewhere was added to the number later, giving a total of ten satisfactory results. Figure 3 displays the results of the intelligibility testing.

Tapes	Hometown-	M S L -	M S L -	MSL-KL	KTBM	ASL
Test Point	MSL-PAH	SEL	PRK			
MSL-PAH	83	69	84	83	75	75

Figure 3: Intelligibility testing results for Malaysian Sign Language in use in Pahang.

The results in Pahang showed that in spite of the low percentage of similarities on the word list with other states, the people of Pahang have an understanding of the Malaysian Sign Language used in other states that approximates their understanding of MSL at home. It is interesting to note that the scores for KTBM and ASL are the same. All of the subjects except one were below thirty, so presumably most of them studied in school using the medium of KTBM.

#### 5.4 RECORDED TEXT TESTING IN JOHOR

RTT was carried out next in Johor, the next state south of Pahang. The highest score for similar words in Johor was with ASL at 77%. The highest score for similar words with another sign language from Malaysia was 75% with Pahang and Melaka, its neighbouring states.

The tapes used in Johor for the RTT phase were as follows: the practice tape, the hometown tape (MSL-JOH), the Malaysian Sign Language tape taken in Melaka, (MSL-MEL), the Malaysian Sign Language tape taken in Pahang (MSL-PAH) and the group of three tapes, MSL-KL, KTBM and ASL.

Thirteen subjects were interviewed and tested. Four of those proved to be unable to learn the testing procedures and had to be eliminated from the comparisons, leaving nine with satisfactory scores. Once again the scores had to be added up and divided by nine. Figure 4 displays the results of the intelligibility testing.

Tapes	Hometown-	M S L -	M S L -	MSL-KL	KTBM	ASL
Test Point	MSL-JOH	MEL	PAH			

MSL-JOH	78	75	83	92	69	73
---------	----	----	----	----	----	----

Figure 4: Intelligibility testing results for Malaysian Sign Language in use in Johor.

The scores for KTBM were to be expected. The age range was twenty to fifty years old, and the older people had probably not encountered KTBM before. However, given the percentage of similarities of 77% with ASL, it was surprising that the comprehension score was only 73%, since many times comprehension scores exceeded the percentage of similar words by as much as 20% or more. For example, MSL-JOH and MSL-KL had similarities of only 72%, but the comprehension score reached 92%, one of the highest comprehension scores encountered. One of the problems was probably that mentioned above that the video of the ASL speaker was very small, so the older people especially had trouble seeing it.

### 5.5 RECORDED TEXT TESTING IN KUALA LUMPUR/SELANGOR

Kuala Lumpur, the capital of Malaysia, is a Federal Territory surrounded by the state of Selangor. The language called Kuala Lumpur Sign Language in the Ethnologue (1996) is used mainly in the surrounding state of Selangor, so the Deaf themselves call it **Selangor Sign Language**. In the chart of percentage of similarities the language is called KLSL–40-50 because most of the speakers fall in that age range. Most of the KLSL speakers studied in Penang first during the days of oralism, learned Penang Sign Language and later returned to Kuala Lumpur where they learned ASL. Others learned ASL first and went on to Penang where they picked up Penang Sign Language. The stories we got from KLSL speakers looked like Penang Sign Language, which is very different from either Malaysian Sign Language or ASL. The signs tend to use a very large signing space, many signs are adaptations of the gestures used by hearing people, and there is a greater mixture of miming than in the other sign languages used in Malaysia. For example, one of the PSL speakers instead of using his fingers for dates, wrote 1955 in the air, with numbers about twelve inches high. Interestingly, the percentage of similarities between KLSL – 40-50 and PSL is only 59%, and the percentage of similarities between KLSL–40-50 and ASL is only 52%.

The tapes used for KLSL–40-50 testing were as follows: the practice tape, the hometown tape (KLSL), the Malaysian Sign Language tape taken in Selangor (MSL-SEL), Penang Sign Language (PSL) and the group of three tapes: MSL-KL, KTBM and ASL.

Fourteen subjects were interviewed and tested. Four of those proved to be unable to learn the testing procedures and had to be eliminated from the comparisons. Many of the others had very good scores, except for the hometown tape. Figure 5 displays the results of the intelligibility testing.

Tapes	Hometown- KLSL	M S L - SEL	PSL	MSL-KL	KTBM	ASL
Test Point						
KLSL	68	67	90	81	64	67

Figure 5: Intelligibility testing results for Kuala Lumpur Sign Language.

These scores proved to be very interesting. The scores for the Malaysian Sign Language by the Selangor lady were unexpectedly low, since she used a lot of KLSL signs in her story. It is interesting that one can almost recognize a speaker of MSL-SEL because of the mixture of KLSL signs that they tend to use. The scores for Penang Sign Language (PSL) were better than the scores of the PSL speakers themselves for their hometown tape which was the most interesting finding of all. The scores for the Malaysian Sign Language (MSL) as used in Kuala Lumpur were generally good, showing that the KLSL speakers have done a lot of language learning. Amongst themselves they still prefer KLSL unlike Penang Sign Language speakers who claimed to have switched over to MSL. This may be because there are still a lot of KLSL signers living in close proximity to each other. The younger people in general seem to have changed over to MSL because of their broader contacts, especially at clubs and associations, sports meets, etc. The scores for KTBM were low as expected since this was probably their first encounter with it. However the scores on ASL were surprising since several of the subjects claimed to have studied ASL in the past. One of the problems may have been the age of the subjects, as all were between the ages of forty and fifty except two younger subjects of thirty-five years old who claimed to have studied in Penang in the days of oralism and learned ASL later. As mentioned above the small picture on the camcorder screen was not easy for older people to see. In a few cases we were able to borrow a TV, but most subjects had to watch the videos on the camcorder screen.

## 5.6 RECORDED TEXT TESTING IN NEGERI SEMBILAN

The RTT survey in Negeri Sembilan proved to be rather disappointing. We ruled out anyone who helped with the collection of data before, so were only able to work with eight subjects. Most of them were illiterate and could not answer questions, so we only found three subjects with satisfactory results. In fact one of those only got three on her hometown tape and would have automatically been ruled out except for her quick improvement on the succeeding tapes. She got scores of 8 or 9 on three of the six tapes, including ASL.

The tapes used in Negeri Sembilan for the RTT phase were as follows: the practice tape, the hometown tape (MSL-NS), the Malaysian Sign Language tape taken in Melaka

(MSL-MEL), the Malaysian Sign Language tape taken in Pahang (MSL-PAH) and the group of three tapes: MSL-KL, KTBM and ASL.

Figure 6 displays the results of the intelligibility testing.

Tapes	Hometown-MSL-NS	M S L -MEL	M S L -PAH	MSL-KL	KTBM	ASL
Test Point						
MSL-NS	56	50	81	93	66	73

Figure 6: Intelligibility testing results for Malaysian Sign Language in use in Negeri Sembilan.

All of the subjects did badly on their hometown tape unlike the other states where there were always a few people who got scores of eight, nine or ten on their hometown tape. They also did badly on the Melaka tape, though when that tape was used in Johor some of the subjects got very high scores. The Pahang and Kuala Lumpur tapes were satisfactory. Two of the ladies who were in their mid-thirties did poorly on the KTBM tape probably because KTBM was not yet taught while they were in school. Two of them got high scores on ASL, while the results of the third pulled the score below 80%.

## 6. RESULTS OF THE RECORDED TEXT TESTING

Penang Sign Language and Kuala Lumpur Sign Language are definitely related languages in spite of the low count of similar words at 59%. At 90% the Kuala Lumpur Sign Language speakers obviously understand Penang Sign Language very well, even though there has been little contact between the two groups for twenty-five years or so because of the distance. (Actually the Deaf are generally a very well travelled group of people, going to various places in Asia, Australia and Europe. There were very few subjects who had never travelled.) However the Penang Sign Language speakers did not understand KLSL as well as the KLSL speakers understood them, since their combined score was only 77%, the lowest score being five and the highest being nine. This is understandable since KLSL has many signs borrowed from ASL. The Penang Sign Language speakers say they are now using ASL, but only attained a score of 53% on ASL. This can partly be attributed to the problems mentioned above, but cannot be entirely due to the problems, as one man got 8 on his hometown tape and 0 on the ASL tape.

Except for the Pahang tape the Terengganu speakers got scores of 77%, 76% and 77% on Malaysian Sign Language as used in other places. This was the same as the score on their own hometown tape. Terengganu probably needs to be revisited at some time to do

further testing to determine whether Malaysian Sign Language as spoken in Terengganu is in fact a different language to be called Terengganu Sign Language.

The subjects in Pahang, Johor and Negeri Sembilan in general did poorly on the first Malaysian Sign Language tape that occurred after their hometown tapes with individual scores varying from five to nine and the average scores varying from 50% to 75%. On the following two tapes in each case the scores averaged between 81% and 93 % showing that the comprehension of other speakers of Malaysian Sign Language is adequate, and that in each of the states tested a different dialect of Malaysia Sign Language is used rather than a different language.

## **7. Conclusion**

There are at least four sign languages in use in Malaysia at this time, namely Penang Sign Language, Selangor Sign Language (called Kuala Lumpur Sign Language elsewhere in this paper), Malaysian Sign Language with its many different dialects spoken in the different states and Manually Coded Malay.

Penang Sign Language and Kuala Lumpur Sign Language are basically only spoken by the older people, though many of the younger people can understand it. Even some of the users of the languages now laugh at the languages and call them "Kids' Language".

Currently the most important sign language in Malaysia for everyday use by the Deaf is Malaysian Sign Language with its many dialects.

The sign language used in Terengganu may or may not be a dialect of Malaysian Sign Language. The people there seem to understand other Deaf Malaysians with no difficulty, so the problem we encountered may only be with the equipment and the procedures that we used.

Manually Coded Malay (KTBM) is important for use in the schools for the Deaf for the purpose of teaching Bahasa Malaysia, the National Language.

American Sign Language has greatly influenced the sign languages of Malaysia, but Malaysian Sign Language has now diverged from it by about 20%-40% depending on the state. When the subjects were tested for their comprehension of American Sign Language their scores varied from a low of 44% to a high of 75%, showing that Malaysian Sign Language is now a language in its own right.

Since Chinese Sign Language is not indigenous to Malaysian we did not pursue the transcription of all the word lists and stories at this time. But it should make an interesting study in the future, especially as one Chinese Sign Language user who studied in Taiwan said he did not understand the language from Singapore.



**Appendix A: Number of Subjects Tested for Comprehension of the Stories**

State	Male	Female	Total
Penang	8	5	13
Terengganu	8	7	15
Pahang	8	7	15
Johor	9	4	13
KLSL	11	3	14
Negeri Sembilan	3	5	8
Totals	47	31	78



Appendix B: Map of Malaysia

## APPENDIX C

### Story in Malaysian Sign Language by Joshua Cheah Sii

1. saya isteri dia 'B'.  
1st(sg) wife 3rd(sg) Bibi.  
I have a wife, that-is-her, Bibi.
2. nama saya S -> I.  
name 1st(sg) S-I.  
My name is Sii.
3. kahwin sudah.  
marry already.  
I am already married.
4. perempuan anak umur tahun 5 dan lelaki anak umur tahun 3. \*\*1  
female child age year 5 and male child age year 3.  
My daughter is 5 years old, and my son is 3 years old.
5. sekarang work dari menjaga bangunan ukuran tahun 8. \*\*2  
now work from look-after building measure year 8.  
I have now worked at supervising the measurements of buildings for 8 years.
6. ada beli sendiri rumah dan kereta dan motorsikal dan kerja. \*\*3  
have buy own house and car and motorcycle and work.  
I have a house that I am buying and a car and a motorcycle, and I have work.
7. kerja habis datang selalu dia kacau.  
work finish arrive always 3rd(sg) bother.  
When I finish work and arrive home he is always bothering me (pointing at the little boy).
8. budak main-main kacau selalu.  
child play bother always.  
The child is playing and always bothering me.
9. susah dan dia isteri kerja saya kongsi tolong.  
difficult and 3rd(sg) wife work 1st(sg) work-with help.  
It is difficult and my wife works, I help share in the work at home.
10. isteri masak mari makan OK.  
wife cook come eat OK.

My wife cooks, calls me to come and eat, it's OK.

11. sebab susah dan ada sebab-sebab rumah bayar dan kerta bayar  
because difficult and have reasons house pay and car pay  
Because it is difficult, and we have several reasons, house payments, car payments,

dan rumah bayar, cukai bayar, elektrik lain. \*\*4  
and house pay, taxes pay, electricity other.  
and house assessment, pay taxes, electricity and other things.

12. banyak bayar.

many pay.  
We have many payments to make.

13. sebab saya mesti kerja makan hidup.

because 1st(sg) must work eat live.  
Because of that I must work to eat and live.

14. dan dari sekolah dahulu Pulau Pinang sudah. \*\*5

and from school before Pulau Pinang finish.  
And I am from the school on Pinang Island before.

15. dan saya sendiri jaga rumah sendiri OK.

and 1st(sg) self look-after house own OK.  
And I myself look after my own house alright.

16. dan saya jaga dan jaga dia normal kacau

and 1st(sg) take-care and look-after 3rd(sg) normal bother  
And I take-care and look-after him who is normal, (he) bothers (things),

jahat curi, jaga tutup pagar, pintu tutup jaga.  
bad steal, take-care close gate, gate close guard.  
is naughty steals, I take care, close the gate, close the door and guard it.

17. ada kawan jiran setengah gaduh ada. \*\*6

have friend neighbour half fight/quarrel have.  
There are friends next door, half of whom quarrel with me.

18. saya akan, saya mahu business fikir tapi pekak susah.

1st(sg) will, 1st(sg) want business think but deaf difficult.  
I will or want to go into business I think, but being Deaf it is difficult.

19. dan dia Ahad sahaja saya kerja free masa ada isteri keluarga pergi  
and 3rd(sg)/that Sunday only 1st(sg) work free time have wife family go  
And on Sunday only I have free time from work to go with my family

YMCA language belajar language. \*\*7  
YMCA language learn language  
to the YMCA for language, to learn language.

20. dan ada kawan-kawan banyak cakap-cakap gaul belajar-belajar gaul  
and have friends many speaking mix learn mix  
And we have many friends to talk to and mix with to learn and mix with

dan travel.  
and travel.

21. and some dia isteri mahu travel ikut saya kerja tinggal.  
and some 3rd(sg) wife want travel follow 1st(sg) work stay.  
and sometimes my wife wants to travel with me leaving behind her work

22. jaga hari kerja mesti, mesti Ahad selalu hingga O.T. over, selalu  
take-care day work must, must Sunday always until overtime, always  
I take care, I must work in the day, on Sunday I always have to work

over.  
overtime.  
overtime.

23. saya ada drive datang larut malam datang lewat masa 8:30 atau 7 malam  
1st(sg) have drive arrive late night arrive late time 8:30 or 7 night  
I drive home late at night, arriving at 7 or 8:30 p.m.,

datang lewat, sebab jauh kerja, habis sesak jalan kereta. \*\*8  
arrive late, because far work, after-all crowded road vehicle  
I arrive home late, because it is far to my work, after all the roads are crowded  
with vehicles.

24. dan datang kawan lain jaga.  
and arrive friend other take-care.  
And another friend arrives to take-care of the children.

25. keluarga perempuan lelaki anak hantar dia jaga abang

family female male child send 3rd(sg) take-care older-brother  
As for my family, my son and daughter, I take them to be taken care of,

dia jaga dia saya bulan bayar RM300. \*\*9  
3rd(sg) take-care 3rd(sg) 1st(sg) month pay RM300.  
she takes care of the older one and I pay RM300 a month.

26. perempuan anak sekolah main gaul belajar-belajar. \*\*10  
female child school play mix learn.  
My daughter goes to school, she plays, mixes (with the others) and learns.
27. hantar dia pagi tengahari lepas.  
send 3rd(sg) morning noon let-out.  
I take her in the morning, and at noon she gets out.
28. saya kerja masa 9 pagi till 5 p.m. habis, O.T. 7 p.m. atau 8:30 p.m.  
1st(sg) work time 9 morning till 5 p.m. finish, overtime 7 p.m. or 8:30 pm.  
I work from 9 a.m. in the morning until I finish at 5 p.m., and perhaps have  
mungkin.  
perhaps.  
overtime until 7 or 8:30 p.m.
29. datang rumah habis.  
arrive house finish.  
I arrive at the house and that's it.

#### Questions for Story by Joshua Cheah Sii

1. Berapa anaknya?  
how-many child-his?  
How many children does he have?
2. Apa pekerjaannya?  
what work-3rd(sg)?  
What is his work?
3. Apa dia membeli?  
what 3rd(sg) buy?  
What is he buying?

4. Apa dia mesti bayar?  
what 3rd(sg) must pay?  
What must he pay for?
5. Di mana dia bersekolah?  
at where 3rd(sg) school  
Where did he go to school?
6. Siapa gaduh?  
who quarrel  
Who is quarrelling?
7. Apa mereka belajar?  
what 3rd(pl) learn  
What do they learn?
8. Kenapa dia lambat pulang?  
why 3rd(sg) late return-home?  
Why is he late returning home?
9. Berapa dia bayar orang yang menjaga anaknya?  
how-much 3rd(sg) pay person who care-for child-3rd(sg)  
How much does he pay for the person who cares for his child?
10. Siapa bersekolah?  
who has-school  
Who goes to school?

## APPENDIX D: Sign Language Intelligibility in Six States of Malaysia

	PSL	MSL- PEN	MSL- KED	KLS L	MSL- TER	MSL- PAH	MSL- KEL	MSL- SLR	MSL- PRK	MSL- -JOH-MEL	MSL- -NSKL	MSL- KL	KTBM	ASL	
PSL	84	63	83	77									87	63	53
MSL- TER					77	69	76						77	72	44
MSL- PAH						83		69	84				83	75	75
MSL- JOH						83				78	75		92	69	73
MSL- NS						81					50	56	93	66	73
KLSL	90			68				67					81	64	67

### Abbreviations in Chart

PSL	Penang Sign Language
MSL-PEN	Penang version of Malaysian Sign Language
MSL-KED	Kedah version of Malaysian Sign Language
KLSL	Kuala Lumpur Sign Language - 40-50 years old
MSL-TER	Terengganu version of Malaysian Sign Language
MSL-PAH	Pahang version of Malaysian Sign Language
MSL-KEL	Kelantan version of Malaysian Sign Language
MSL-SLR	Selangor version of Malaysian Sign Language
MSL-PRK	Perak version of Malaysian Sign Language
MSL-JOH	Johor version of Malaysian Sign Language
MSL-MEL	Melaka version of Malaysian Sign Language
MSL-NS	Negeri Sembilan version of Malaysian Sign Language
MSL-KL	Kuala Lumpur version of Malaysian Sign Language
KTBM	Kod Tangan Bahasa Malaysia (Manually Coded Malay)
ASL	American Sign Language

## REFERENCES

- Casad, Eugene. (1974). *Dialect Intelligibility Testing*. Summer Institute of Linguistics Publications in Linguistics and Related Fields, Number 38. Norman, Oklahoma: Summer Institute of Linguistics and the University of Oklahoma.
- Grimes, Barbara F. Ed. (1996). *ETHNOLOGUE: Languages of the World*. Thirteenth Edition. Dallas, Texas: Summer Institute of Linguistics.
- King, Julie K. and John Wayne King. (1984). *Languages of Sabah: A Survey Report*. Pacific Linguistics, Series C - No. 78. Canberra, ACT: The Australian National University.
- Parkhurst, Steven and Dianne. (1997). *Introduction*. (Part of the final write-up of the LSE survey). Unpublished paper.
- Parkhurst, Steven and Dianne. (1998). *Introduction to Sign Language Survey*. Notes on Sociolinguistics 3:215-242. Dallas, Texas: Summer Institute of Linguistics.
- Staley, Beverley. (1998). *Sign Language Survey in Canada*. Unpublished Paper.
- Sutton, Valerie. (1999). *Lessons in SignWriting: Textbook and Workbook*. Second Edition. LaJolla, CA: The Deaf Action Committee for SignWriting.