

MODERN STANDARD THAI SIGN LANGUAGE, INFLUENCE FROM ASL, AND ITS RELATIONSHIP TO ORIGINAL THAI SIGN VARIETIES

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Abstract

It is known that vocabulary from North American Sign Language (ASL) was introduced into Thailand in the 1950's and that ASL vocabulary has influenced varieties of Modern Standard Thai Sign Language (MSTSL) used in urban areas. To date, however, no one has attempted a systematic study of the extent of this influence or of the relationship of MSTSL to sign language varieties existing in Thailand prior to ASL influence. This paper reports the results of using techniques of historical-comparative linguistics to determine (a) the extent to which ASL has influenced basic vocabulary in MSTSL; and (b) the relationship of MSTSL to sign language varieties used in Thailand prior to ASL influence. Comparisons were made of published vocabulary data and also of videotaped signing of younger Bangkok signers and of older signers from Bangkok and Chiangmai.

Modern Standard Thai Sign Language (MSTSL)

Since sign language varieties in many countries have not been studied in depth, little is known about their historical origins. Thailand is a case in point. The language called Modern Standard Thai Sign Language (MSTSL) in this paper is the sign

language variety used by the great majority of younger (under 40) Thai signers living in urban areas of Thailand. It is the type of signing found in the National Association of the Deaf in Thailand and the four regional associations of deaf people in Thailand, all of which tend to be frequented mostly by younger deaf people who live in urban areas. It is the kind of signing described in sign language manuals in Thailand (Suwanarat et al. 1986, Suwanarat et al. 1990) and the kind of signing that the average visitor to Thailand will probably see. MSTSL is commonly called Thai Sign Language or TSL in Thailand.

However, it is generally recognized that MSTSL has been influenced by signs from ASL, which were brought to Thailand in the 1950's by some hearing Thai individuals who were interested in formal education for deaf individuals in Thailand. To date, however, there have been no formal studies to determine the extent to which ASL vocabulary has influenced MSTSL vocabulary.

Cognate comparisons, lexicostatistics & glottochronology

While it is common to use the original 200-word Swadesh list to compare for cognates in basic vocabulary across spoken languages, it is not generally desirable to use the same list for sign language research. Use of the original 200-word Swadesh list in sign language research may result in slight overestimation of the relationship of closely related sign languages, moderate overestimation of the relationship of loosely related sign languages, and great overestimation of the relationship of historically unrelated sign languages (Woodward 1993a).

These overestimates occur because the original 200-word Swadesh list contains many items, such as body parts and pronouns, which are represented indexically (i.e. by simply pointing) in many sign languages. The comparison of indexic signs results in a number of false potential cognates.

Table 1.

Special modified Swadesh vocabulary list for Sign Lgs.

1. all	26. grass	51. other	76. warm
2. animal	27. green	52. person	77. water
3. bad	28. heavy	53. play	78. wet
4. because	29. how	54. rain	79. what
5. bird	30. hunt	55. red	80. when
6. black	31. husband	56. right	81. where
7. blood	32. ice	57. river	82. white
8. child	33. if	58. rope	83. who
9. count	34. kill	59. salt	84. wide
10. day	35. laugh	60. sea	85. wife
11. die	36. leaf	61. sharp	86. wind
12. dirty	37. lie	62. short	87. with
13. dog	38. live	63. sing	88. woman
14. dry	39. long	64. sit	89. wood
15. dull	40. louse	65. smooth	90. worm
16. dust	41. man	66. snake	91. year
17. earth	42. meat	67. snow	92. yellow
18. egg	43. mother	68. stand	93. full
19. fat/grease	44. mountain	69. star	94. moon
20. father	45. name	70. stone	95. brother
21. feather	46. narrow	71. sun	96. cat
22. fire	47. new	72. tail	97. dance
23. fish	48. night	73. thin	98. pig
24. flower	49. not	74. tree	99. sister
25. good	50. old	75. vomit	100. work

To avoid these problems of overestimation, a special vocabulary list (Table 1) was used for the

comparisons reported here. The list in Table 1 is a modification of the 200-word Swadesh list and has proven useful in earlier comparisons of French Sign Language (FSL) and ASL (Woodward 1978), of Modern Costa Rican Sign Language (NLESCO) and ASL (Woodward 1992), and of several South and East Asian sign language varieties (Woodward 1993b).

When comparing for cognates, it is possible to use several techniques in historical linguistics. This paper primarily uses lexicostatistics in the comparison of cognates, although some reference is also made to glottochronology. While the terms lexicostatistics and glottochronology are often used interchangeably, it is quite useful to distinguish between the terms.

Lexicostatistics is best seen as a more general method of determining the possible historical relationship of language varieties through comparisons for cognates in basic vocabulary. Glottochronology is best seen as a way to determine the nature of historically related language varieties. Viewed in this way, lexicostatistics is clearly accepted as one of the standard methods used in Historical Linguistics, while glottochronology is less well accepted, except in cases of arguing for possible earlier creolization in a language (Hymes 1971).

Standard books on historical linguistics (e.g. Crowley 1992, Lehmann 1992) point out that lexicostatistics is best used for determining relationships across unwritten languages which are under-described or undescribed and for which there are relatively limited amounts of data available (e.g. original sign language varieties in Thailand). Lexicostatistics has been especially useful in the classification of 959 distinct, under-described Austronesian languages and 250 distinct, under-

described Australian languages (Lehmann 1992). Once genetic/historical relationships have been recognized through lexicostatistics, other historical linguistic methods can and should be used.

Influences of ASL Vocabulary on Basic Vocabulary in MSTSL

Table 2 shows the results of comparing signs in published data on ASL and signs in published data on MSTSL. ASL translations of the words shown in Table 2 were taken from standard basic reference materials on ASL (Stokoe et al. 1965, Humphries et al. 1980). MSTSL translations of the words shown in Table 2 are from standard basic reference materials on MSTSL (Suwanarat et al. 1986, 1990). In Table 2, possible cognates are shown in bold; items for which no MSTSL sign occurred in the MSTSL printed sources are in italics; and non-cognates are shown in straight print. As Table 2 shows, there is a 57% rate (42/74 pairs) of possible cognates between ASL and MSTSL.

According to classic lexicostatistical subgroupings (Gudschinsky 1956, Crowley 1992, Lehmann 1992), dialects of the same language should have an 81% to 100% rate of cognates, and languages belonging to the same language family should have a 36% to 81% rate of cognates. With a 57% rate of cognates, ASL and MSTSL should be classified as distinct languages that are closely related historically and that belong to the same language family.

Table 2.
ASL/MSTSL sign comparisons: 57% possible cognates.

1. <i>all</i>	26. <i>grass</i>	51. <i>other</i>	76. <i>warm</i>
2. <i>animal</i>	27. green	52. person	77. water
3. <i>bad</i>	28. heavy	53. play	78. <i>wet</i>
4. <i>because</i>	29. <i>how</i>	54. <i>rain</i>	79. what
5. bird	30. <i>hunt</i>	55. red	80. <i>when</i>
6. black	31. <i>husband</i>	56. right/corr.	81. where
7. <i>blood</i>	32. <i>ice</i>	57. river	82. <i>white</i>
8. child	33. <i>if</i>	58. <i>rope</i>	83. who
9. <i>count</i>	34. <i>kill</i>	59. <i>salt</i>	84. wide
10. day	35. <i>laugh</i>	60. <i>sea</i>	85. <i>wife</i>
11. <i>die</i>	36. <i>leaf</i>	61. <i>sharp</i>	86. wind
12. dirty	37. <i>lie</i>	62. <i>short</i>	87. <i>with</i>
13. dog	38. <i>live</i>	63. <i>sing</i>	88. <i>woman</i>
14. dry	39. long	64. <i>sit</i>	89. wood
15. <i>dull</i>	40. <i>louse</i>	65. smooth	90. worm
16. <i>dust</i>	41. <i>man</i>	66. snake	91. year
17. <i>earth</i>	42. meat	67. <i>snow</i>	92. yellow
18. egg	43. <i>mother</i>	68. stand	93. full
19. <i>fat/grease</i>	44. <i>mountain</i>	69. <i>star</i>	94. <i>moon</i>
20. <i>father</i>	45. name	70. <i>stone</i>	95. <i>brother</i>
21. <i>feather</i>	46. narrow	71. <i>sun</i>	96. <i>cat</i>
22. fire	47. <i>new</i>	72. <i>tail</i>	97. <i>dance</i>
23. fish	48. <i>night</i>	73. thin	98. pig
24. flower	49. <i>not</i>	74. <i>tree</i>	99. <i>sister</i>
25. <i>good</i>	50. old	75. <i>vomit</i>	100. work

In order to verify the data from dictionaries shown in Table 2 with additional empirical data, we interviewed four younger signers (1 male and 3 females in their thirties) and recorded their MSTSL signs for items in the special vocabulary list. Each of these signers has worked or is working for the National Association of the Deaf in Thailand.

Table 3 shows the results of a comparison of the younger signers' signs with ASL signs taken from

standard basic reference materials on ASL (Stokoe et al. 1965, Humphries et al. 1980). Possible cognates are shown in bold and non-cognates in plain text. Table 3 shows that there is a 57% rate (57/100 pairs) of possible cognates between ASL and MSTSL. This is identical to the earlier percentage obtained from the dictionary data in Table 2. According to classic lexicostatistical procedures (Gudschinsky 1956, Crowley 1992, Lehmann 1992), this new percentage confirms that ASL and MSTSL should be classified as distinct languages that are closely related historically and that belong to the same language family.

Table 3.
ASL/MSTSL, Bangkok signers: 57% possible cognates.

1. all	26. grass	51. other	76. warm
2. animal	27. green	52. person	77. water
3. bad	28. heavy	53. play	78. wet
4. because	29. how	54. rain	79. what
5. bird	30. hunt	55. red	80. when
6. black	31. husband	56. right/corr.	81. where
7. blood	32. ice	57. river	82. white
8. child	33. if	58. rope	83. who
9. count	34. kill	59. salt	84. wide
10. day	35. laugh	60. sea	85. wife
11. die	36. leaf	61. sharp	86. wind
12. dirty	37. lie	62. short	87. with
13. dog	38. live	63. sing	88. woman
14. dry	39. long	64. sit	89. wood
15. dull	40. louse	65. smooth	90. worm
16. dust	41. man	66. snake	91. year
17. earth	42. meat	67. snow	92. yellow
18. egg	43. mother	68. stand	93. full
19. at/grease	44. mountain	69. star	94. moon
20. father	45. name	70. stone	95. brother
21. feather	46. narrow	71. sun	96. cat
22. fire	47. new	72. tail	97. dance
23. fish	48. night	73. thin	98. pig
24. lower	49. not	74. tree	99. sister
25. good	50. old	75. vomit	100. work

It is possible, however, that some of the possible cognates listed in Tables 2 and 3 might not actually be cognate, but might be false cognates. Iconicity, chance and/or other causes might account for the presence of some of these signs in older sign language varieties that existed in Thailand before the arrival of ASL vocabulary in Thailand in the 1950's. In order to investigate this possibility more thoroughly, three older signers were located, interviewed, and videotaped about signs used in

Thailand before ASL influence. Each of these signers has worked extensively in the National Association of the Deaf in Thailand and/or in one of the four regional associations of Deaf people in Thailand and is fluent in one original sign language variety as well as in MSTSL. One of the signers, a man in his late forties, is from Chiangmai. The other two signers, a woman in her late forties and a man in his early fifties, are from Bangkok.

Table 4 below shows the results of a comparison of the signs used by these older signers in Thailand before ASL influence with ASL signs taken from standard basic reference materials on ASL (Stokoe et al. 1965, Humphries et al. 1980). In Table 4, possible cognates are in bold face and non-cognates in plain text. Table 4 shows that there is only a 10% rate (10/100 pairs) of possible cognates between ASL and sign language varieties in Thailand before they were influenced by ASL. According to classic lexicostatistical studies (Gudschinsky 1956, Crowley 1992, Lehmann 1992), this very low percentage of potential cognates clearly demonstrates that ASL and original sign language varieties in Thailand should be classified as historically unrelated languages in completely separate language families. Therefore, it is extremely likely that these 10 potential cognates are false cognates and should be eliminated from any analysis of the influence of ASL on MSTSL.

Table 4.
ASL/older Thai Sign Languages: 10% possible cognates.

1. all	26. grass	51. other	76. warm
2. animal	27. green	52. person	77. water
3. bad	28. heavy	53. play	78. wet
4. because	29. how	54. rain	79. what
5. bird	30. hunt	55. red	80. when
6. black	31. husband	56. right/corr.	81. where
7. blood	32. ice	57. river	82. white
8. child	33. if	58. rope	83. who
9. count	34. kill	59. salt	84. wide
10. day	35. laugh	60. sea	85. wife
11. die	36. leaf	61. sharp	86. wind
12. dirty	37. lie	62. short	87. with
13. dog	38. live	63. sing	88. woman
14. dry	39. long	64. sit	89. wood
15. dull	40. louse	65. smooth	90. worm
16. dust	41. man	66. snake	91. year
17. earth	42. meat	67. snow	92. yellow
18. egg	43. mother	68. stand	93. full
19. fat/grease	44. mountain	69. star	94. moon
20. father	45. name	70. stone	95. brother
21. feather	46. narrow	71. sun	96. cat
22. fire	47. new	72. tail	97. dance
23. fish	48. night	73. thin	98. pig
24. lower	49. not	74. tree	99. sister
25. good	50. old	75. vomit	100. work

Table 5 shows a re-analysis of potential cognates between ASL and MSTSL with these 10 false cognates removed. In Table 5, possible cognates are in bold face; false cognates in struck-thru caps; and non-cognates in plain text. Table 5 shows that there is a 52% rate (47/90 pairs) of possible cognates between ASL and MSTSL. This is quite close to the earlier percentages (57%) obtained from the analyses discussed in Tables 2 and 3. According to classic lexicostatistical procedures (Gudschinsky

1956, Crowley 1992, Lehmann 1992), all of these percentages indicate that ASL and MSTSL should be classified as distinct languages that are closely related historically and that belong to the same language family.

Table 5.
ASL/MSTSL, Bangkok signers (w/o false cognates):
52% cognates.

1. all	26. grass	51. other	76. warm
2. animal	27. green	52. person	77. water
3. bad	28. heavy	53. play	78. wet
4. because	29. how	54. rain	79. what
5. BIRD	30. hunt	55. RED	80. when
6. black	31. husband	56. right/corr.	81. WHERE
7. blood	32. ice	57. river	82. white
8. CHILD	33. if	58. rope	83. WHO
9. count	34. kill	59. salt	84. WIDE
10. day	35. laugh	60. sea	85. wife
11. die	36. leaf	61. sharp	86. wind
12. dirty	37. lie	62. short	87. with
13. dog	38. live	63. sing	88. woman
14. dry	39. long	64. sit	89. wood
15. dull	40. louse	65. smooth	90. WORM
16. dust	41. man	66. snake	91. year
17. earth	42. meat	67. snow	92. yellow
18. egg	43. mother	68. stand	93. full
19. fat/grease	44. mountain	69. star	94. moon
20. father	45. name	70. stone	95. brother
21. feather	46. NARROW	71. sun	96. cat
22. FIRE	47. new	72. tail	97. dance
23. FISH	48. night	73. thin	98. pig
24. lower	49. not	74. tree	99. sister
25. good	50. old	75. vomit	100 work

Having examined the influence of ASL vocabulary on MSTSL, we can now begin to shift our focus to the second major concern of this paper: the relationship of MSTSL to original sign

languages in Thailand prior to the arrival of ASL. In order to do this, we must first try to determine if there was one or more than one original sign language in Thailand prior to the arrival of ASL.

Original sign language varieties in Thailand

To determine if there was one or more than one original sign language in Thailand prior to the arrival of ASL, we used the videotaped data from the three older signers previously discussed in Table 4 for further analysis. As noted earlier, one of these older signers is a man from Chiangmai, and the other two (one man and one woman) are from Bangkok.

Table 6 shows the results of comparing the videotaped vocabularies of older sign language varieties in Chiangmai and in Bangkok. In the table possible cognates are shown in bold and non-cognates in plain type. The table shows that there is a 65% rate (65/100 pairs) of possible cognates between original signs in Chiangmai and original signs in Bangkok. According to classic lexicostatistical procedures (Gudschinsky 1956, Crowley 1992, Lehmann 1992), this percentage indicates that original signs in Chiangmai and original signs in Bangkok should be classified as distinct languages that are closely related historically and that belong to the same language family.

Table 6.
OCMSL/OBSL: 65% possible cognates (65/100).

1. all	26. grass	51. other	76. warm
2. animal	27. green	52. person	77. water
3. bad	28. heavy	53. play	78. wet
4. because	29. how	54. rain	79. what
5. bird	30. hunt	55. red	80. when
6. black	31. husband	56. right/corr.	81. where
7. blood	32. ice	57. river	82. white
8. child	33. if	58. rope	83. who
9. count	34. kill	59. salt	84. wide
10. day	35. laugh	60. sea	85. wife
11. die	36. leaf	61. sharp	86. wind
12. dirty	37. lie	62. short	87. with
13. dog	38. live	63. sing	88. woman
14. dry	39. long	64. sit	89. wood
15. dull	40. louse	65. smooth	90. worm
16. dust	41. man	66. snake	91. year
17. earth	42. meat	67. snow	92. yellow
18. egg	43. mother	68. stand	93. full
19. fat/grease	44. mountain	69. star	94. moon
20. father	45. name	70. stone	95. brother
21. feather	46. narrow	71. sun	96. cat
22. fire	47. new	72. tail	97. dance
23. fish	48. night	73. thin	98. pig
24. lower	49. not	74. tree	99. sister
25. good	50. old	75. vomit	100. work

We now know that there were at least two original sign languages in Thailand prior to ASL influence: Original Chiangmai Sign Language (OCMSL) and Original Bangkok Sign Language (OBSL). It is highly likely that other distinct original sign languages existed in Thailand, especially in the Northeastern and in the Southern regions of Thailand. Unfortunately, we currently have no data

on what these sign languages might have looked like, so we can only examine the possible relationship of MSTSL to OCMSL and to OBSL.

Table 7.
OCMSL/MSTSL, dictionary comparisons:
27% possible cognates (17/64).

1. <i>all</i>	26. <i>grass</i>	51. <i>other</i>	76. <i>war,</i>
2. <i>animal</i>	27. <i>green</i>	52. <i>person</i>	77. <i>water</i>
3. bad	28. <i>heavy</i>	53. <i>play</i>	78. <i>wet</i>
4. <i>because</i>	29. <i>how</i>	54. rain	79. <i>what</i>
5. BIRD	30. <i>hunt</i>	55. RED	80. <i>when</i>
6. <i>black</i>	31. <i>husband</i>	56. <i>right/corr.</i>	81. WHERE
7. <i>blood</i>	32. <i>ice</i>	57. <i>river</i>	82. white
8. CHILD	33. <i>if</i>	58. <i>rope</i>	83. WHO
9. count	34. <i>kill</i>	59. <i>salt</i>	84. WIDE
10. <i>day</i>	35. <i>laugh</i>	60. <i>sea</i>	85. <i>wife</i>
11. <i>die</i>	36. leaf	61. <i>sharp</i>	86. <i>wind</i>
12. <i>dirty</i>	37. lie	62. <i>short</i>	87. <i>with</i>
13. <i>dog</i>	38. <i>live</i>	63. <i>sing</i>	88. <i>woman</i>
14. <i>dry</i>	39. <i>long</i>	64. <i>sit</i>	89. <i>wood</i>
15. dull	40. <i>louse</i>	65. <i>smooth</i>	90. WORM
16. <i>dust</i>	41. <i>man</i>	66. <i>snake</i>	91. <i>year</i>
17. earth	42. <i>meat</i>	67. <i>snow</i>	92. <i>yellow</i>
18. <i>egg</i>	43. <i>mother</i>	68. <i>stand</i>	93. <i>full</i>
19. <i>fat/grease</i>	44. mountain	69. star	94. moon
20. <i>father</i>	45. <i>name</i>	70. <i>stone</i>	95. brother
21. <i>feather</i>	46. NARROW	71. <i>sun</i>	96. <i>cat</i>
22. FIRE	47. new	72. <i>tail</i>	97. <i>dance</i>
23. FISH	48. <i>night</i>	73. <i>thin</i>	98. <i>pig</i>
24. <i>flower</i>	49. not	74. <i>tree</i>	99. sister
25. good	50. <i>old</i>	75. <i>vomit</i>	100. <i>work</i>

Relationship of MSTSL to OCMSL & to OBSL

Since OCMSL and OBSL are separate languages, we must make separate comparisons of OCMSL with MSTSL and of OBSL and MSTSL if we want to understand the relationship of MSTSL to original

sign language varieties in Thailand prior to the arrival of ASL.

To determine the relationship of OCMSL with MSTSL and of OBSL with MSTSL, we compared the videotaped data from the three older signers with dictionary and videotaped data on MSTSL.

Table 7 (above) shows the results comparing videotaped data on OCMSL with published data on MSTSL obtained from standard basic reference materials on MSTSL (Suwanarat et al. 1986, 1990). In Table 7, possible cognates are shown in bold type; non-cognates are shown in plain text; the ten excluded items are shown in struck-thru caps; and items for which no MSTSL sign occurred in the MSTSL printed sources are shown in italics. As Table 7 shows, there is a 27% rate (17/64 pairs) of possible cognates between MSTSL and OCMSL. According to classic lexicostatistical procedures (Gudschinsky 1956, Crowley 1992, Lehmann 1992), this percentage indicates that OCMSL and MSTSL should be classified as distinct languages that belong to separate language families.

Table 8 shows the results of comparing videotaped data on OBSL with published data on MSTSL. (The typographic details are the same as in Table 7.) Table 8 shows a 25% rate (16/64 pairs) of possible cognates between OBSL and MSTSL. This indicates that OBSL and MSTSL should be classified as distinct languages that belong to separate language families.

In addition to comparing data from OCMSL and from OBSL with MSTSL data from printed sources, we also compared data from OCMSL and from OBSL with videotaped MSTSL data from four younger Bangkok signers (See Table 3).

OBSL
 OCMSL/MSTSL, dictionary comparisons: 25/91
 possible cognates (17/64).
 16

1. <i>all</i>	26. <i>grass</i>	51. <i>other</i>	76. <i>war,</i>
2. <i>animal</i>	27. <i>green</i>	52. <i>person</i>	77. <i>water</i>
3. bad	28. <i>heavy</i>	53. <i>play</i>	78. <i>wet</i>
4. <i>because</i>	29. <i>how</i>	54. <i>rain</i>	79. <i>what</i>
5. BIRD	30. <i>hunt</i>	55. RED	80. <i>when</i>
6. <i>black</i>	31. <i>husband</i>	56. <i>right/corr.</i>	81. WHERE
7. <i>blood</i>	32. <i>ice</i>	57. <i>river</i>	82. <i>white</i>
8. CHILD	33. <i>if</i>	58. <i>rope</i>	83. WHO
9. <i>count</i>	34. <i>kill</i>	59. <i>salt</i>	84. WIDE
10. <i>day</i>	35. <i>laugh</i>	60. <i>sea</i>	85. <i>wife</i>
11. <i>die</i>	36. <i>leaf</i>	61. <i>sharp</i>	86. <i>wind</i>
12. <i>dirty</i>	37. lie	62. <i>short</i>	87. <i>with</i>
13. <i>dog</i>	38. <i>live</i>	63. <i>sing</i>	88. <i>woman</i>
14. <i>dry</i>	39. <i>long</i>	64. <i>sit</i>	89. <i>wood</i>
15. dull	40. louse *	65. <i>smooth</i>	90. WORM
16. <i>dust</i>	41. man	66. <i>snake</i>	91. <i>year</i>
17. earth	42. <i>meat</i>	67. <i>snow</i>	92. <i>yellow</i>
18. <i>egg</i>	43. mother *	68. <i>stand</i>	93. <i>full</i>
19. <i>fat/grease</i>	44. mountain	69. star	94. <i>moon</i>
20. father*	45. <i>name</i>	70. <i>stone</i>	95. brother
21. <i>feather</i>	46. NARROW	71. <i>sun</i>	96. <i>cat</i>
22. FIRE	47. <i>new</i>	72. <i>tail</i>	97. <i>dance</i>
23. FISH	48. <i>night</i>	73. <i>thin</i>	98. <i>pig</i>
24. <i>flower</i>	49. not	74. <i>tree</i>	99. sister
25. good	50. <i>old</i>	75. vomit	100. <i>work</i>

* The older signer of OBSL did not use cognate signs for the starred items, but the younger signer did.

Table 9 shows the results of comparing videotaped data on OCMSL with videotaped data on MSTSL. (The typographical details in Table 9 are the same as those in Tables 7 and 8.) There is a 29% rate (26/90 pairs) of possible cognates between OCMSL and MSTSL. This is very close to the earlier percentage (27%) obtained from the dictionary data

in Table 7, and it confirms that OCMSL and MSTSL should be classified as distinct languages that belong to different language families.

Table 9.
OCMSL/MSTSL, Bangkok signers: 29% poss. cognates
(26/90).

1. all	26. grass	51. other	76. war,
2. animal	27. green	52. person	77. water
3. bad	28. heavy	53. play	78. wet
4. because	29. how	54. rain	79. what
5. BIRD	30. hunt	55. RED	80. when
6. black	31. husband	56. right/corr.	81. WHERE
7. blood	32. ice	57. river	82. white
8. CHILD	33. if	58. rope	83. WHO
9. count	34. kill	59. salt	84. WIDE
10. day	35. laugh	60. sea	85. wife
11. die	36. leaf	61. sharp	86. wind
12. dirty	37. lie	62. short	87. with
13. dog	38. live	63. sing	88. woman
14. dry	39. long	64. sit	89. wood
15. dull	40. louse	65. smooth	90. WORM
16. dust	41. man	66. snake	91. year
17. earth	42. meat	67. snow	92. yellow
18. egg	43. mother	68. stand	93. full
19. fat/grease	44. mountain	69. star	94. moon
20. father	45. name	70. stone	95. brother
21. feather	46. NARROW	71. sun	96. cat
22. FIRE	47. new	72. tail	97. dance
23. FISH	48. night	73. thin	98. pig
24. flower	49. not	74. tree	99. sister
25. good	50. old	75. vomit	100. work

Table 10 shows a 26% rate (23/90 pairs) of possible cognates between OBSL and MSTSL. This is almost identical to the earlier percentage (25%) obtained from the dictionary data in Table 9. This confirms that OBSL and MSTSL should be classified

as distinct languages that belong to different language families.

^{OBSL}
~~OBSL~~ **Table 10.**
OBSL/MSTSL, Bangkok Signers:
26% poss. cognates (23/90).

1. all	26. grass	51. other	76. warm
2. animal	27. green	52. person	77. water
3. bad	28. heavy	53. play	78. wet
4. because	29. how	54. rain	79. what
5. BIRD	30. hunt	55. RED	80. when
6. black	31. husband	56. right	81. WHERE
7. blood	32. ice	57. river	82. white
8. CHILD	33. if	58. rope	83. WHO
9. count	34. kill	59. salt	84. WIDE
10. day	35. laugh	60. sea	85. wife
11. die	36. leaf	61. sharp	86. wind
12. dirty	37. lie	62. short	87. with
13. dog	38. live	63. sing	88. woman
14. dry	39. long	64. sit	89. wood
15. dull	40. louse	65. smooth	90. WORM
16. dust	41. man	66. snake	91. year
17. earth	42. meat	67. snow	92. yellow
18. egg	43. mother	68. stand	93. full
19. fat/grease	44. mountain	69. star	94. moon
20. father	45. name	70. stone	95. brother
21. feather	46. NARROW	71. sun	96. cat
22. FIRE	47. new	72. tail	97. dance
23. FISH	48. night	73. thin	98. pig
24. flower	49. not	74. tree	99. sister
25. good	50. old	75. vomit	100. work

Summary of Findings

In summary, this study has shown that:

1. MSTSL has been influenced by ASL and by original sign language varieties that existed in Thailand prior to ASL influence in the 1950's;
2. The original sign language varieties in Chiangmai (OCMSL) and Bangkok (OBSL) are distinct but closely related languages belonging to the same language family;
3. MSTSL is a separate language from ASL as well as from OCMSL and from OBSL;
4. MSTSL shows a greater influence from ASL (52% cognates) than it does from either OCMSL (29% cognates) or OBSL (26% cognates);
5. Lexicostatistical procedures would classify MSTSL and ASL as closely related languages belonging to the same language family;
6. These procedures would classify MSTSL as being in a separate language family from original sign language varieties in Thailand.

These findings also strongly suggest that:

1. There were probably a number of original indigenous sign languages in Thailand before ASL influence;
2. MSTSL was probably formed out of a process of creolization of some or many of these original indigenous sign languages and ASL signs brought to Thailand in the 1950's;
3. The development and spread of MSTSL, while providing a nationally unifying force for Thai Deaf people, has at the same time endangered original sign languages in Thailand.

Other original sign languages in Thailand

This study has shown that there were at least two original sign languages existing in Thailand prior to ASL influence: OCMSL in Chiangmai and OBSL in Bangkok. It is highly unlikely that these were the only original sign languages in Thailand. The Northeastern and the Southern areas of Thailand are often described as more "distinctive" than the Central (Bangkok) and the Northern (Chiangmai) areas of Thailand. Therefore, if there were distinct original sign languages in Chiangmai and Bangkok, it is highly likely that other original distinct sign languages existed in the Northeastern and the Southern regions of Thailand prior to ASL influence.

Further rationale for the existence of other original sign languages is related to the strong possibility that MSTSL developed through creolization, since creolization normally occurs in linguistically heterogeneous populations.

Possible earlier creolization in MSTSL

MSTSL has arisen in the last fifty years, and the impact of ASL vocabulary on basic vocabulary in MSTSL is clear. As the analysis in this paper has shown, more than half (52%) of the basic MSTSL vocabulary in the modified Swadesh vocabulary list is cognate with ASL and is almost without a doubt derived from ASL influence. It should be noted that not only is the influence of ASL vocabulary on MSTSL massive, it is also abrupt. Standard glottochronological procedures would suggest that a 52% change in basic vocabulary through natural language change would take at least 1,700 years. Yet this change has occurred in less than 50 years.

The degree and rate of change from OCMSL to MSTSL and from OBSL to MSTSL is even more dramatic. MSTSL now shares less than 30% basic vocabulary with either OCMSL or OBSL. This means that MSTSL has essentially "lost" (through borrowing from ASL and the creation of new signs) 70% of the basic vocabulary of OCMSL and OBSL in approximately 50 years. Such a loss is totally inconsistent with natural language change, since standard glottochronological procedures would suggest that a 70% change in basic vocabulary would take at least 2,000 years.

The abrupt, massive influence of ASL on basic vocabulary in MSTSL and the sudden, dramatic "losses" of OCMSL and of OBSL vocabulary in MSTSL greatly exceed rates predicted by glottochronology and result in the "glottochronological distinctiveness" typically found in creolization. As Hymes (1971, p. 198) points out: "The glottochronological distinctiveness of pidgins and creoles was first discovered by Hall (1959), who showed that Neo-Melanesian had diverged from its base language, English, at a rate far exceeding that normally found."

It is also interesting to note that like other instances of creolization, MSTSL has resulted from "a sharp break in transmission [from original indigenous languages] and the creation of a new code" (Southworth 1971, p. 255) and that like other instances of creolization MSTSL appears to have developed out of traditionally linguistically heterogeneous populations.

The effect of MSTSL on original Thai SLs

All of the younger and the older people interviewed for this study had competence in MSTSL. All of the younger people were monolingual in MSTSL and had no knowledge of either OCMSL or OBSL. The only people who had any knowledge of OCMSL and OBSL in this study were people in their late forties and fifties. These older signers are bilingual in MSTSL and one of the original sign languages in Thailand, but now they rarely use OCMSL or OBSL. This offers indirect but compelling evidence that MSTSL has already replaced original sign languages in Thailand among younger Thai signers in their twenties and thirties.

Thus, the development and spread of MSTSL, while providing a nationally unifying force for Thai Deaf people, has, at the same time endangered original sign languages in Thailand. This is not surprising given the possibility of creolization, since by its very nature a creolized language normally becomes the new homogeneous language in a traditionally linguistically heterogeneous population by quickly replacing all of the original languages involved in the creolization process.

Conclusion

Although we have a slowly growing body of evidence about sign languages in Thailand, there are still many gaps in our knowledge. For example we still do not know:

1. How many original sign languages existed in Thailand prior to ASL influence;
2. How many families these original sign languages belong to;

3. What relationships, if any, these original sign languages in Thailand may have to other Southeast Asian sign languages;
4. What other evidence may exist related to possible creolization of ASL and original sign language varieties in Thailand; and
5. What the future of endangered original sign languages in Thailand may be.

What is needed at this point is a large-scale, in-depth sociolinguistic study of sign language varieties in Thailand. This study must look at the language use of a large number of Deaf linguistic informants who have competence in one or more sign languages in Thailand. These Deaf people must be selected from various stratified age groups and from various regions of Thailand. This research needs to focus on original sign language varieties in Thailand, especially on their inter-relationships, their relationships to MSTSL, and their relationships to other Southeast Asian sign language varieties.

Such research can provide a permanent record that will be of great value not only for deaf and hearing people in Thailand, but also for non-Thai people in Deaf Studies, in Historical Linguistics, and in other fields who wish to know about the history of sign languages and Deaf people in Thailand and Southeast Asia.

Fortunately, there still seem to be sufficient users of original sign languages in Thailand for proper documentation and comparison of these original sign languages; and fortunately, if creolization was involved, it happened so recently that MSTSL may be one of the few sociolinguistic situations where it may be possible to actually reconstruct a good part of the creolization process.

Unfortunately, the youngest users of original sign languages in Thailand are almost fifty years old and it is quite likely that if the documentation of these languages is not completed in one generation, that these languages will be lost to linguistic study forever, since there are currently no records of these sign languages.

Given the endangered status of original sign languages in Thailand, the window of opportunity for research on these sign languages and on possible creolization in MSTSL is fast closing. If original sign languages in Thailand die before they can be properly documented and described, Deaf people in Thailand lose a valuable part of their history, all Thai people will lose a valuable part of their national culture, and the rest of us lose one of the important keys to understanding the history of sign languages and Deaf people in Thailand and Southeast Asia.

REFERENCES

- Crowley, T.
1992 *An Introduction to Historical Linguistics*.
Oxford: Oxford University Press.
- Gudschinsky, S.
1956 The ABCs of Lexicostatistics (Glotto-
chronology), *Word* 12, 175-210.
- Hall, R.
1959 Neo-Melanesian and Glottochronology,
*International Journal of American
Linguistics* 25, 265-267.
- Humphries, T., C. Padden, and T.J. O'Rourke
1980 *A Basic Course in American Sign
Language*. Silver Spring, MD: TJ
Publishers, Inc.
- Hymes, D.
1971 *Pidginization and Creolization of
Languages*. NY: Cambridge University
Press.
- Lehmann, W.
1992 *Historical Linguistics: An Introduction*. New
York: Routledge.
- Southworth, F.
1971 Detecting Prior Creolization: An Analysis of
the Historical Origins of Marathi. In
*Pidginization and Creolization of
Languages*, D. Hymes ed. NY: Cambridge
University Press, 255-274.
- Stokoe, W., D. Casterline, and C. Croneberg
1965 *A Dictionary of American Sign Language on
Linguistic Principles*. Washington, DC:
Gallaudet College Press [rev. 1976, Linstok
Press].
- Suwanarat, M., A. Ratanasint, V. Rungsrihong, W.
Buathong, C. Reilly, L. Anderson, S. Yen-Klao, & O.
Wrigley
1986 *The Thai Sign Language Dictionary*. Book
One. Bangkok: The National Association of
the Deaf in Thailand.

Suwanarat, M., A. Ratanasint, V. Rungsrihong, L. Anderson, & O. Wrigley

1990 *The Thai Sign Language Dictionary, Revised and Expanded Edition*. Bangkok: The National Association of the Deaf in Thailand.

Woodward, J.

1978 Historical bases of American Sign Language. In *Understanding Language Through Sign Language Research*, P. Siple (ed). New York: Academic Press, 333-348.

1992 Historical bases of New Costa Rican Sign Language, *Revista de Filología y Lingüística de la Universidad de Costa Rica* 18:1, 127-132.

1993a Intuitive Judgments of Hong Kong Signers About the Relationship of Sign Language Varieties in Hong Kong and Shanghai, *CUHK Papers in Linguistics* 4, 88-98.

1993b. Lexical Evidence for the Existence of South Asian and East Asian Sign Language Families, *Journal of Asian Pacific Communication* 4:2, 91-106.

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