

- Siegmán, A. W. and Feldstein, S. (eds) (1979) *Of Speech and Time: Temporal Patterns in Interpersonal Contexts*. Hillsdale, NJ: Lawrence Erlbaum.
- Tannen, D. (1985). Silence: Anything but. In D. Tannen and M. Saviile-Troike (eds) *Perspectives on Silence* (pp. 93-111). Norwood, NJ: Ablex.
- (1987a). Repetition in conversation as spontaneous formulaicity. *Text* 7, 215-43.
- (1987b) Repetition in conversation: Toward a poetics of talk. *Language* 63, 574-605.
- Tarone, E. (1980) Some influences on the syllable structure of interlanguage phonology. *International Review of Applied Linguistics* 18, 139-52.
- Vance, T. J. (1987) *An Introduction to Japanese Phonology*. Albany: State University of New York Press.
- Weinberger, S. (1988) Theoretical foundations of second language phonology. University of Washington. Unpublished doctoral dissertation.
- Welkowitz, J., Bond, R. N. and Feldstein, S. (1984) Conversational time patterns of Hawaiian children as a function of ethnicity and gender. *Language and Speech* 27, 173-91.
- Wiese, R. (1984) Language production in foreign and native languages: Same or different? In H. W. Dechert, D. Möhle and M. Raupach (eds) *Second Language Productions* (pp. 11-25). Tübingen: Gunter Narr.
- Yngve, V. H. (1970) On getting a word in edgewise. *Chicago Linguistics Society* 6, 567-78.

LEXICAL EVIDENCE FOR THE EXISTENCE OF SOUTH ASIAN AND EAST ASIAN SIGN LANGUAGE FAMILIES¹

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Abstract Systematic research on many areas of sign language structure and use have been growing over the last twenty or so years, yet relatively little work has been done to document empirically historical-comparative relationships of sign languages. Research on Asian sign languages is a good example of the problem. By 1977, researchers had been able to demonstrate that varieties of Indian Sign Language were not related to European Sign Languages; yet due to the lack of comparative sign language data from Asia, researchers were forced to classify varieties of Indian Sign Language as being of 'unknown affiliation' until 1992. While research since 1992 has shown that sign language varieties in India, Pakistan, and Nepal are distinct but closely related language varieties that belong to the same language family, the relationship of these South Asian sign language varieties to other sign language varieties in Asia has not been examined. This paper is intended to add to previous research on the relationships of Asian sign language varieties by comparing South Asian sign language varieties with two sign language varieties used in East Asia. Results of the comparisons as well as implications for future research are discussed.

Introduction

Sign languages offer unique insights into the nature of language, since they provide views of language codes through channels different from those normally described by linguists. Systematic linguistic research on the structure of and the use of sign languages, especially those used in Europe and North America, has expanded greatly since its inception in the 1960s, and summaries of the research are readily available (Grosjean & Lane, 1979; Woll, Kyle & Deuchar, 1981; Wilbur, 1987).

Little, however, has been done to document empirically historical-comparative relationships of sign languages. Again, much of the small amount of work that has been done on historical-comparative relationships of sign languages has generally focused on North American or European Sign Languages (Woodward, 1978; Woll, 1984). Even though the amount of historical-comparative research is limited, one clear finding of such research is that historical-comparative research on sign

languages in a given region must be done independently of any spoken languages in the same region. The sign language situation in given countries may contrast sharply with the spoken language situation. For example, it is clear that (North) American Sign Language (ASL), used in the United States, is much more closely related to French Sign Language (Stokoe, Casterline & Croneberg 1965; Woodward, 1978) and to New Costa Rican Sign Language (Woodward, 1992) than it is to British Sign Language.

While there have been some attempts to increase the amount of historical-comparative research on sign languages, it often requires a great deal of time before adequate data can be assembled to do the historical-comparative work.

Research on Asian sign languages is a good illustration of the problem. By 1977, researchers (Vasishtha, Woodward & Wilson, 1978) had been able to demonstrate that varieties of Indian Sign Language were not related to European Sign Languages; yet due to the lack of comparative sign language data from Asia, researchers were forced to classify varieties of Indian Sign Language as being of 'unknown affiliation' until 1992.

While research since 1992 (Woodward, 1993a, b) has shown that sign language varieties in India, Pakistan, and Nepal are distinct but closely related language varieties that belong to the same language family, the relationships of these South Asian sign language varieties to other sign language varieties in Asia has not been examined.

This paper is intended to add to previous research on the relationships of Asian sign language varieties by comparing South Asian sign language varieties with two sign language varieties used in East Asia. In order to determine the possible linguistic relationships of sign language varieties in South Asia and East Asia, this paper will (1) describe the sources of comparative data for sign language varieties in South Asia and East Asia, (2) summarise the findings of previous comparative lexical research on South Asian sign language varieties, (3) compare for cognates in basic vocabulary between the East Asian sign language varieties, and (4) compare for cognates among South Asian and East Asian sign language varieties.² The conclusion will discuss the results of the analysis and the implications for future research.

Sources of Data

The data to be analysed in this paper come from printed (India, Pakistan, and Nepal) and videotaped (Shanghai and Hong Kong) sources. Table 1 lists the sources of data for this paper.

For India, elicitations in all cities were done through Indian Sign Language by local hearing sign language interpreters and/or through written Hindi. Written Bengali was also used in Calcutta, written Tamil and Kannada in Bangalore, and written Gujarati and Marathi in Bombay. Written translations in each city were done by local hearing sign language interpreters. In each city, signs were elicited from three male and three female consultants randomly selected from the local deaf population. The six consultants from each city were all born deaf and

Table 1 Sources of data

<i>Language Variety</i>	<i>Source</i>	<i>No. of Lexical Entries</i>
(1) New Delhi	Vasishtha, Woodward & De Santis (1980)	896
(2) Bangalore	Vasishtha, Woodward & De Santis (1985)	785
(3) Bombay	Vasishtha, Woodward & De Santis (1986)	782
(4) Calcutta	Vasishtha, Woodward & De Santis (1987)	805
(5) Karachi	ABSA Research Group (1987)	464
(6) Kathmandu	Ross, Devkota & Maskey (1989)	1,179
(7) Shanghai	Woodward (1985)	100
(8) Hong Kong	Woodward (1993c)	500

acquired sign language before the age of six. Some signers had deaf parents and/or deaf siblings; others grew up in hearing families.

For Pakistan and Nepal, signs were recorded by local deaf community members. No further information is available about selection and recording procedures for these two sources.

Sign language data from Shanghai were collected in the United States in 1985 from two fluent users of Shanghai Sign Language. The two consultants were both born deaf in Shanghai, learned how to sign in Shanghai at an early age, and had been residents in Shanghai all of their lives. Both were dancers in a Shanghai dance company for deaf individuals and were on tour in the United States. Both consultants were in their early twenties; one was male and the other female.

The two consultants from Shanghai were given a written Chinese version of the complete basic vocabulary list shown in Table 2 and simultaneously videotaped while signing the list. The Chinese version of the basic vocabulary list was done by a native speaker of Chinese in consultation with the author.

Sign language data from Hong Kong were collected in Hong Kong in 1993 from six fluent users of Hong Kong Sign Language. The six consultants were all born deaf in Hong Kong, learned how to sign in Hong Kong at an early age, and had been residents of Hong Kong all of their lives. Two consultants were males and four were females, all in their early twenties.

The six consultants from Hong Kong were given Chinese translations of the complete basic vocabulary list shown in Table 2 and simultaneously videotaped while signing the list. The Chinese version of the basic vocabulary list was done by a native speaker of Chinese in consultation with the author.

Signs in the printed and videotaped sources used for this paper cover a great variety of lexical material. To minimise possible affects for borrowing, this paper will compare only signs from basic vocabulary that is not likely to be borrowed or shared across unrelated languages.

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 relationships of loosely related sign languages and great overestimation of the relationship of historically unrelated sign languages. These overestimations are due to the fact that the original 200 word Swadesh list contains many items, such as body parts and pronouns, that are represented indexically in sign languages. The comparison of indexic signs results in a number of false potential cognates. To avoid this problem, this paper uses a special vocabulary list for sign language research that has been derived from the 200 word Swadesh list. The modified list removes most of the potentially indexic signs from the original list. Table 2 illustrates the words included in the special vocabulary list for sign languages. Each of the sources of data for this study contained translations for 62 out of the 100 basic vocabulary items listed in Table 2. These 62 items are shown in straight print; the 38 items which were not present in each source are shown in italics.

Table 2 Special vocabulary list for sign languages

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

Previous Research on South Asian Sign Language Varieties

Previous research has shown that varieties of Indian Sign Language are closely related (Vasishtha, Woodward & Wilson, 1978) and that varieties of Indian Sign

Language are also closely related to sign language varieties in Pakistan (Woodward, 1993a) and Nepal (Woodward, 1993b). Table 3 shows a summary of the results of this previous research.

Table 3 Results of previous cognate comparisons of South Asian sign languages

	Delhi	Bombay	Karachi	Calcutta	Kathmandu	Bangalore
Delhi	100%	81%	76%	76%	71%	71%
Bombay		100%	71%	71%	68%	68%
Karachi			100%	69%	68%	63%
Calcutta				100%	61%	63%
Kathmandu					100%	61%
Bangalore						100%

Table 3 indicates that the sign language variety in Delhi is most closely related to signing in Bombay (81% cognates) followed by Karachi and Calcutta (both 76% cognates) and Kathmandu and Bangalore (71% cognates). Signing in Bombay is most closely related to signing in Delhi (81% cognates) followed by Karachi and Calcutta (71% cognates) and Kathmandu and Bangalore (68% cognates). The sign language variety in Karachi is most closely related to the sign language variety in Delhi (76% cognates), followed by Bombay (71% cognates), Calcutta (69% cognates), Kathmandu (68% cognates) and Bangalore (63% cognates).

Table 3 also demonstrates that signing in Calcutta is most closely related to signing in Delhi (76% cognates) followed by Bombay (71% cognates), Karachi (69% cognates), and Bangalore (63% cognates), and Kathmandu (61% cognates). The sign language variety in Kathmandu is most closely related to the sign language variety in Delhi (71% cognates) followed by Bombay and Karachi (both 68%), and Bangalore and Calcutta (both 61% cognates). Finally, signing in Bangalore is most closely related to signing in Delhi (71%) followed by signing in Bombay (68% cognates), Karachi and Calcutta (both 63% cognates), and Kathmandu (61% cognates).

These rates of cognates are quite similar to those that have been found between other related sign languages in the same family. For example, earlier studies using the same vocabulary list with sign language varieties in the French Sign Language Family found the rate of cognates between historically related French and American Sign Languages was 61% (Woodward, 1978) and the rate of cognates between historically related New Costa Rican and American Sign Languages was 63% (Woodward, 1992).

Comparison of East Asian Sign Language Varieties

In order to determine the relationships of sign language varieties in Hong Kong and Shanghai, a comparison of basic vocabulary items was made between these two sign language varieties. Table 4 illustrates the results of the comparison.

Table 4 demonstrates that sign language varieties in Hong Kong and Shanghai

Table 4 Hong Kong and Shanghai cognate comparison 77% Possible Cognates (48/62)

1. all	17. green	33. red	49. where
2. bad	18. hunt	34. river	50. white
3. bird	19. husband	35. salt	51. who
4. black	20. if	36. sea	52. wife
5. blood	21. laugh	37. short	53. woman
6. child	22. leaf	38. sit	54. wood
7. day	23. long	39. snake	55. year
8. die	24. man	40. stand	56. yellow
9. dog	25. mother	41. star	57. full
10. earth	26. name	42. stone	58. moon
11. fat	27. new	43. sun	59. brother
12. father	28. night	44. tree	60. cat
13. fire	29. not	45. vomit	61. dance
14. fish	30. old	46. water	62. sister
15. flower	31. play	47. what	
16. good	32. rain	48. when	

are very closely related sign language varieties and show expected rates of cognates for related sign languages that belong to the same sign language family.

Comparison of East and South Asian sign language varieties

When we compare East Asian and South Asian sign language varieties to each other, a very different picture emerges. Tables 5 to 16 below show detailed comparisons of individual pairs of sign languages.

Table 17 contains a summary of comparisons of East Asian and South Asian sign language varieties.

Table 5 Hong Kong and Delhi cognate comparison 35% possible cognates (22/62)

1. all	17. green	33. red	49. where
2. bad	18. hunt	34. river	50. white
3. bird	19. husband	35. salt	51. who
4. black	20. if	36. sea	52. wife
5. blood	21. laugh	37. short	53. woman
6. child	22. leaf	38. sit	54. wood
7. day	23. long	39. snake	55. year
8. die	24. man	40. stand	56. yellow
9. dog	25. mother	41. star	57. full
10. earth	26. name	42. stone	58. moon
11. fat	27. new	43. sun	59. brother
12. father	28. night	44. tree	60. cat
13. fire	29. not	45. vomit	61. dance
14. fish	30. old	46. water	62. sister
15. flower	31. play	47. what	
16. good	32. rain	48. when	

Table 6 Hong Kong and Kathmandu cognate comparison 34% Possible Cognates (21/62)

1. all	17. green	33. red	49. where
2. bad	18. hunt	34. river	50. white
3. bird	19. husband	35. salt	51. who
4. black	20. if	36. sea	52. wife
5. blood	21. laugh	37. short	53. woman
6. child	22. leaf	38. sit	54. wood
7. day	23. long	39. snake	55. year
8. die	24. man	40. stand	56. yellow
9. dog	25. mother	41. star	57. full
10. earth	26. name	42. stone	58. moon
11. fat	27. new	43. sun	59. brother
12. father	28. night	44. tree	60. cat
13. fire	29. not	45. vomit	61. dance
14. fish	30. old	46. water	62. sister
15. flower	31. play	47. what	
16. good	32. rain	48. when	

Table 7 Hong Kong and Calcutta cognate comparison 29% Possible Cognates (18/62)

1. all	17. green	33. red	49. where
2. bad	18. hunt	34. river	50. white
3. bird	19. husband	35. salt	51. who
4. black	20. if	36. sea	52. wife
5. blood	21. laugh	37. short	53. woman
6. child	22. leaf	38. sit	54. wood
7. day	23. long	39. snake	55. year
8. die	24. man	40. stand	56. yellow
9. dog	25. mother	41. star	57. full
10. earth	26. name	42. stone	58. moon
11. fat	27. new	43. sun	59. brother
12. father	28. night	44. tree	60. cat
13. fire	29. not	45. vomit	61. dance
14. fish	30. old	46. water	62. sister
15. flower	31. play	47. what	
16. good	32. rain	48. when	

Table 8 Hong Kong and Karachi cognate comparison 29% Possible Cognates (18/62)

1. all	17. green	33. red	49. where
2. bad	18. hunt	34. river	50. white
3. bird	19. husband	35. salt	51. who
4. black	20. if	36. sea	52. wife
5. blood	21. laugh	37. short	53. woman
6. child	22. leaf	38. sit	54. wood
7. day	23. long	39. snake	55. year
8. die	24. man	40. stand	56. yellow
9. dog	25. mother	41. star	57. full
10. earth	26. name	42. stone	58. moon
11. fat	27. new	43. sun	59. brother
12. father	28. night	44. tree	60. cat
13. fire	29. not	45. vomit	61. dance
14. fish	30. old	46. water	62. sister
15. flower	31. play	47. what	
16. good	32. rain	48. when	

Table 9 Hong Kong and Bangalore cognate comparison 29% Possible Cognates (18/62)

1. all	17. green	33. red	49. where
2. bad	18. hunt	34. river	50. white
3. bird	19. husband	35. salt	51. who
4. black	20. if	36. sea	52. wife
5. blood	21. laugh	37. short	53. woman
6. child	22. leaf	38. sit	54. wood
7. day	23. long	39. snake	55. year
8. die	24. man	40. stand	56. yellow
9. dog	25. mother	41. star	57. full
10. earth	26. name	42. stone	58. moon
11. fat	27. new	43. sun	59. brother
12. father	28. night	44. tree	60. cat
13. fire	29. not	45. vomit	61. dance
14. fish	30. old	46. water	62. sister
15. flower	31. play	47. what	
16. good	32. rain	48. when	

Table 10 Hong Kong and Bombay cognate comparison 27% Possible Cognates (17/62)

1. all	17. green	33. red	49. where
2. bad	18. hunt	34. river	50. white
3. bird	19. husband	35. salt	51. who
4. black	20. if	36. sea	52. wife
5. blood	21. laugh	37. short	53. woman
6. child	22. leaf	38. sit	54. wood
7. day	23. long	39. snake	55. year
8. die	24. man	40. stand	56. yellow
9. dog	25. mother	41. star	57. full
10. earth	26. name	42. stone	58. moon
11. fat	27. new	43. sun	59. brother
12. father	28. night	44. tree	60. cat
13. fire	29. not	45. vomit	61. dance
14. fish	30. old	46. water	62. sister
15. flower	31. play	47. what	
16. good	32. rain	48. when	

Table 11 Shanghai and Delhi cognate comparison 31% Possible Cognates (19/62)

1. all	17. green	33. red	49. where
2. bad	18. hunt	34. river	50. white
3. bird	19. husband	35. salt	51. who
4. black	20. if	36. sea	52. wife
5. blood	21. laugh	37. short	53. woman
6. child	22. leaf	38. sit	54. wood
7. day	23. long	39. snake	55. year
8. die	24. man	40. stand	56. yellow
9. dog	25. mother	41. star	57. full
10. earth	26. name	42. stone	58. moon
11. fat	27. new	43. sun	59. brother
12. father	28. night	44. tree	60. cat
13. fire	29. not	45. vomit	61. dance
14. fish	30. old	46. water	62. sister
15. flower	31. play	47. what	
16. good	32. rain	48. when	

Table 12 Shanghai and Kathmandu cognate comparison 29% Possible Cognates (18/62)

1. all	17. green	33. red	49. where
2. bad	18. hunt	34. river	50. white
3. bird	19. husband	35. salt	51. who
4. black	20. if	36. sea	52. wife
5. blood	21. laugh	37. short	53. woman
6. child	22. leaf	38. sit	54. wood
7. day	23. long	39. snake	55. year
8. die	24. man	40. stand	56. yellow
9. dog	25. mother	41. star	57. full
10. earth	26. name	42. stone	58. moon
11. fat	27. new	43. sun	59. brother
12. father	28. night	44. tree	60. cat
13. fire	29. not	45. vomit	61. dance
14. fish	30. old	46. water	62. sister
15. flower	31. play	47. what	
16. good	32. rain	48. when	

Table 13 Shanghai and Calcutta cognate comparison 26% Possible Cognates (16/62)

1. all	17. green	33. red	49. where
2. bad	18. hunt	34. river	50. white
3. bird	19. husband	35. salt	51. who
4. black	20. if	36. sea	52. wife
5. blood	21. laugh	37. short	53. woman
6. child	22. leaf	38. sit	54. wood
7. day	23. long	39. snake	55. year
8. die	24. man	40. stand	56. yellow
9. dog	25. mother	41. star	57. full
10. earth	26. name	42. stone	58. moon
11. fat	27. new	43. sun	59. brother
12. father	28. night	44. tree	60. cat
13. fire	29. not	45. vomit	61. dance
14. fish	30. old	46. water	62. sister
15. flower	31. play	47. what	
16. good	32. rain	48. when	

Table 14 Shanghai and Karachi cognate comparison 24% Possible Cognates (15/62)

1. all	17. green	33. red	49. where
2. bad	18. hunt	34. river	50. white
3. bird	19. husband	35. salt	51. who
4. black	20. if	36. sea	52. wife
5. blood	21. laugh	37. short	53. woman
6. child	22. leaf	38. sit	54. wood
7. day	23. long	39. snake	55. year
8. die	24. man	40. stand	56. yellow
9. dog	25. mother	41. star	57. full
10. earth	26. name	42. stone	58. moon
11. fat	27. new	43. sun	59. brother
12. father	28. night	44. tree	60. cat
13. fire	29. not	45. vomit	61. dance
14. fish	30. old	46. water	62. sister
15. flower	31. play	47. what	
16. good	32. rain	48. when	

Table 15 Shanghai and Bangalore cognate comparison 24% Possible Cognates (15/62)

1. all	17. green	33. red	49. where
2. bad	18. hunt	34. river	50. white
3. bird	19. husband	35. salt	51. who
4. black	20. if	36. sea	52. wife
5. blood	21. laugh	37. short	53. woman
6. child	22. leaf	38. sit	54. wood
7. day	23. long	39. snake	55. year
8. die	24. man	40. stand	56. yellow
9. dog	25. mother	41. star	57. full
10. earth	26. name	42. stone	58. moon
11. fat	27. new	43. sun	59. brother
12. father	28. night	44. tree	60. cat
13. fire	29. not	45. vomit	61. dance
14. fish	30. old	46. water	62. sister
15. flower	31. play	47. what	
16. good	32. rain	48. when	

Table 16 Shanghai and Bombay cognate comparison 23% Possible Cognates (14/62)

1. all	17. green	33. red	49. where
2. bad	18. hunt	34. river	50. white
3. bird	19. husband	35. salt	51. who
4. black	20. if	36. sea	52. wife
5. blood	21. laugh	37. short	53. woman
6. child	22. leaf	38. sit	54. wood
7. day	23. long	39. snake	55. year
8. die	24. man	40. stand	56. yellow
9. dog	25. mother	41. star	57. full
10. earth	26. name	42. stone	58. moon
11. fat	27. new	43. sun	59. brother
12. father	28. night	44. tree	60. cat
13. fire	29. not	45. vomit	61. dance
14. fish	30. old	46. water	62. sister
15. flower	31. play	47. what	
16. good	32. rain	48. when	

Table 17 Results of previous cognate comparisons of South Asian sign languages

	Hong Kong	Shanghai
Delhi	35%	31%
Kathmandu	34%	29%
Calcutta	29%	26%
Karachi	29%	24%
Bangalore	29%	24%
Bombay	27%	23%

Table 17 demonstrates that the sign language variety in Hong Kong only shows a slight relationship to any of the South Asian sign language varieties. Hong Kong signing shows its closest relationship to signing in Delhi (35% cognates) followed by Kathmandu (34% cognates); Calcutta, Karachi and Bangalore (all 29% cognates); and Bombay (27% cognates).

Table 17 also indicates that signing in Shanghai is even less closely related to any of the South Asian sign language varieties. The Shanghai sign language variety shows its closest relationships to signing in Delhi (31% cognates) followed by Kathmandu (29% cognates), Calcutta (26% cognates), Karachi and Bangalore (both 24% cognates); and Bombay (23% cognates).

Table 17 demonstrates that the two East Asian varieties of signing examined in this paper are only slightly related to South Asian sign language varieties. The cross-cognate rates for East Asian and South Asian sign languages are much lower than the expected rates of cognates for related sign languages that belong to the same sign language family.

Summary and Conclusion

The purpose of this paper was to determine the possible linguistic relationship of sign language varieties in South Asia and East Asia by summarising the findings of previous comparative lexical research on South Asian sign language varieties, comparing for cognates in basic vocabulary between two East Asian sign language varieties (Hong Kong and Shanghai), and comparing for cognates among South Asian and East Asian sign language varieties.

Results of the comparisons indicate that sign language varieties in South Asia are very closely related languages that belong to the same sign language family, that Hong Kong and Shanghai sign language varieties in East Asia are very closely related languages that belong to the same sign language family, and that South Asian sign language varieties and East Asian sign language varieties belong to two distinct language families, although South Asian and East Asian sign language families may belong to the same language stock.

It is important to stress that historical-comparative sign language research, especially in Asia, is still in its beginning stages. Much more research is urgently needed in this area. For example, only a small number of sign language varieties have been studied in South Asia and in East Asia. There is a very strong possibility that there is a second East Asian sign language family that involves Japanese, Korean, and Northern Taiwanese sign language varieties. A great deal more comparative research needs to be done in other South Asian and East Asian countries, as well as in Southeast Asian countries before we can know how many sign language families there are in Asia or for that matter how many sign language families there are in South Asia, in Southeast Asia, or in East Asia.

While the historical-comparative study of sign languages may appear somewhat esoteric or even trivial to hearing people not familiar with communities of deaf people, it is not esoteric and certainly not trivial to the rather large number of deaf people in Asia and to the hearing children of deaf parents in Asia who use these languages nor is it esoteric or trivial to linguistic theory.

India is a typical example of the importance of sign language varieties to deaf people and to their hearing and deaf children. As in many other countries in Asia and throughout the world, 'Sign language is an integral part of deaf communities in India. It is estimated that Indian Sign Language is used by over 1,000,000 deaf adults and by approximately 500,000 deaf children, less than 5% of whom attend special schools for the deaf' (Vasishtha, Woodward & Wilson, 1978:66).

From the point of view of linguistic theory, the less we know about sign languages, the less we know about human languages and the possible range of human languages. From a more general scientific and humanistic point of view, the less we know about human languages, the less we know about our own shared humanity.

Notes

1. The production of this paper was supported in part by RGC Direct Grant #220100460, A Study of Sign Language Varieties in Hong Kong, and by Sign Language Research, Inc.
2. Presently there are insufficient published data on sign language varieties in South Asia and in East Asia to allow for comprehensive grammatical and formational (phonological) comparisons of these sign language varieties.

Also, due to limitations of length, it is impossible to include all of the data compared for this paper. It is helpful, however, to compare some typical examples of signs that were classified as cognate and of signs that were classified as non-cognate. Simple signs for 'female or woman' and simple and compound signs for 'mother' in each of the sign languages are examined below.

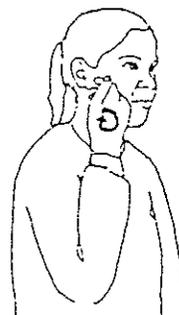
Three basic signs were found for 'female or woman'.



Sign for 'female or woman' used in Delhi, Bombay, Karachi, Calcutta, and Kathmandu (Identical sign used in all five cities).



Sign for 'female or woman' used in Hong Kong and Shanghai (Identical sign used in both cities)



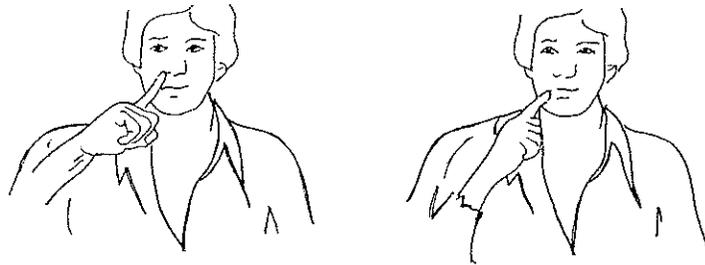
Sign used for 'female or woman' in Bangalore (Unique sign).

For morphologically simple signs like 'female or woman', it is only necessary to examine for formational or phonological similarities. Because the signs for 'female or woman' are identical in Delhi, Bombay, Karachi, Calcutta, and Kathmandu, signs for 'female or woman' in these cities are classified as cognates. Similarly, since the signs for 'female or woman' in Hong Kong and Shanghai are identical, signs for 'female or woman' in these cities are classified as cognates. However, the signs for 'female or woman' in Hong Kong and Shanghai bear no phonological resemblance to and cannot be classified as cognates with any of the signs in South Asia. The sign for 'female or woman' in Bangalore bears no formational or phonological resemblance to signs in any of the other cities, so the Bangalore sign for 'female or woman' cannot be classified as cognate with signs in any of the other cities.

The comparison of morphologically complex signs is more complicated than the comparison of simple signs because it involves comparisons for both phonological and morphological similarities. All variants found in signs for 'mother' are listed below.



Identical compound sign for 'mother' used in Delhi & Bombay.



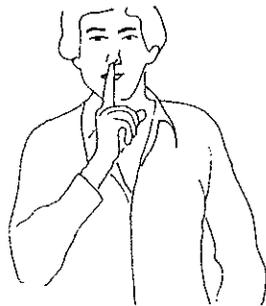
Compound sign for 'mother' used in Kathmandu.



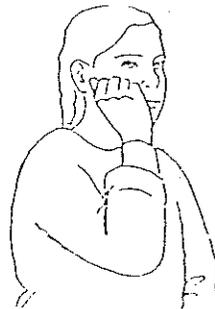
Compound sign for 'mother' used in Karachi.



Complex sign for 'mother' used in Calcutta.



Identical sign for 'mother' used in Hong Kong and Shanghai.



Sign for 'mother' used in Bangalore.

The signs for 'mother' in Delhi, Bombay, and Kathmandu are all compound signs literally meaning 'female parent' and consisting of a fluid combination of the sign for 'female' and the sign for 'parent'. Because the signs for 'mother' are both phonologically and morphologically identical in Delhi and Bombay, signs for 'mother' in these cities are classified as cognates. The sign for 'mother' in Kathmandu is morphologically identical and phonologically similar to the signs for 'mother' in Delhi and Bombay. The phonological differences in the two sets of signs can be explained by differences in assimilation involving handshape and location. For the sign for 'mother' in Kathmandu, there is phonological assimilation of the handshape of the sign for 'female' into and throughout the production of sign for 'parent'. There is also a slight assimilatory affect of the location of the sign for 'female' on the location of the sign for 'parent'. No such process of assimilation occurs in the signs for 'mother' in Delhi and Bombay. Thus, signs for 'mother' in Delhi, Bombay, and Kathmandu should be classified as cognates.

It should also be clear that the sign for 'mother' in Bangalore is not related phonologically or morphologically to signs in any of the other cities and should therefore not be classified as cognate with signs in any of the other cities.

The situation with the signs in Calcutta, Karachi, Hong Kong and Shanghai is more complicated. While all of these signs appear to be phonologically related, they are not all morphologically related. We will need to examine each of the sign variants independently from the others.

The sign for 'mother' in Karachi is a compound. Like the signs for 'mother' in Delhi, Bombay, and Kathmandu, the first part of the compound for 'mother' in Karachi is 'female'. However, unlike the signs for 'mother' in Delhi, Bombay, and Kathmandu, the second part of the compound in Karachi is not 'parent' but another sign related to 'veiling', 'respect' or 'greeting'. Interestingly, the sign for 'parent' in Delhi, Bombay, and Kathmandu has (with a slight change in orientation) undergone a shift in meaning and has become the sign for 'father' in Karachi. Once the meaning of the sign for 'parent' shifted to 'father' in Karachi signing, it was no longer possible to continue to use the same sign in the compound for 'mother'. This would have resulted in a compound like 'female father' for 'mother'. Another more suitable second part of the compound had to be added. Thus, Karachi now has a compound of 'female + veiling (or respect or greeting)' to indicate 'mother'. It is thus possible to posit an earlier form of 'mother' involving the compound of the signs for 'female' and for 'parent' in Karachi signing and to classify the Karachi sign for 'mother' as cognate with Delhi, Bombay, and Kathmandu.

When we examine the Calcutta sign for 'mother', it is most useful to compare it with the Karachi sign. When we do this, it is possible to see that the first parts of the Calcutta and Karachi signs are identical phonologically and morphologically. If we posit that the second part of the Karachi compound is deleted in the Calcutta version, we can classify the signs for 'mother' in Calcutta and Karachi as cognates and also explain why there is an upward movement in the Calcutta sign (anticipatory movement to the second and now deleted part of the compound). Once we have accepted the Calcutta and Karachi signs for 'mother' as cognates, we can use the arguments in the previous paragraph to classify the Calcutta sign for 'mother' as cognate not only with Karachi but also with Delhi, Bombay, and Kathmandu.

Finally, we are left with the identical signs for 'mother' in Hong Kong and Shanghai. While the sign form of 'mother' in Hong Kong and Shanghai appears to be related phonologically to the signs in Delhi, Bombay, Kathmandu, Karachi, and Calcutta, the sign form of 'mother' in Hong Kong and Shanghai is morphologically distinct from the signs used in the South Asian cities. The sign form for 'mother' in Hong Kong and Shanghai does not come from a compound nor is it related to the sign for 'female' or

woman'. The sign form for 'mother' in Hong Kong and Shanghai has developed completely independently of the sign forms for 'mother' in South Asia. It is completely coincidental that there are any phonological similarities in the South Asian and East Asian signs for 'mother'. For these reasons, the sign form for 'mother' in Hong Kong and Shanghai cannot be considered cognate with sign forms for 'mother' in any of the South Asian sign language varieties.

In summary, it is clear that sign must be related both phonologically and morphologically before they can be classified as cognates. It should be emphasised that for the data in this paper, it was generally quite easy to determine cognates and non-cognates, since in all but two signs in the data ('mother' and 'father' in Hong Kong and Shanghai), when there was a phonological similarity in a group of signs, there was also a morphological similarity in the same group of signs; and when there was no phonological similarity in a group of signs, there was also no morphological similarity in the same group of signs.

References

- Research Group (1987) *A Dictionary of Pakistan Sign Language (Focus on Karachi)*. Karachi: Anjuman Behbood-e-Samat-e-Atfal (ABSA School for the Deaf).
- Grosjean, F. and Lane, H. (eds) (1979) *La langue des signes. Langues 56* (special issue on sign language).
- Ross, P., Devkota, N. and Maskey, D. (1989) *Nepali Sign Language Dictionary*. Kathmandu: The Welfare society for the Deaf.
- Stokoe, W., Casterline, C. and Croneberg, C. (1965) *A Dictionary of American Sign Language on Linguistic Principles*. Washington, DC: Gallaudet College Press.
- Vasishta, M., Woodward, J. and De Santis, S. (1980) *An Introduction to Indian Sign Language (Focus on Delhi) (Indian edition)*. Delhi: All Indian Federation of the Deaf.
- Vasishta, M., Woodward, J. and De Santis, S. (1985) *An Introduction to the Bangalore Variety of Indian Sign Language*. Gallaudet Research Institute Monograph No. 4. Washington, DC: Gallaudet Research Institute.
- (1986) *An Introduction to the Bombay Variety of Indian Sign Language*. Gallaudet Research Institute Monograph No. 5. Washington, DC: Gallaudet Research Institute.
- (1987) *An Introduction to the Calcutta Variety of Indian Sign Language*. Gallaudet Research Institute Monograph No. 6. Washington, DC: Gallaudet Research Institute.
- Vasishta, M., Woodward, J. and Wilson K. (1978) Sign language in India: Regional variation within the deaf population. *Indian Journal of Applied Linguistics* IV:2, 66-74.
- Wilbur, R. (1987) *American Sign Language: Linguistic and Applied Dimensions*. Boston, MA: College Hill Press.
- Woll, B. (1984) The comparative study of different sign languages. In F. Loncke, P. Boyes-Braem and Y. Lebrun (eds) *Recent Research on European Sign Languages*. Lisse: Swets & Zeitlinger.
- Woll, B., Kyle, J. and Deuchar, M. (1981) *Perspectives on British Sign Language and Deafness*. London: Croom Helm.
- Woodward, J. (1978) Historical bases of American Sign Language. In P. Siple (ed.) *Understanding Language Through Sign Language Research*. New York: Academic Press.
- (1985) Videotape of Shanghai signing. Videotape preserved at the Linguistics Research Laboratory, The Chinese University of Hong Kong, Shatin, New Territories.
- Woodward, J. (1992) Historical bases of New Costa Rican Sign Language. *Revista de Filología y Lingüística de la Universidad de Costa Rica* 18(1), 127-32.
- Woodward, J. (1993a) Towards a genetic classification of Indian Sign Language varieties. *Indian Journal of Applied Linguistics* XIX:1.
- (1993b) The relationship of sign language varieties in India, Pakistan, and Nepal. *Sign Language Studies* 78, 15-22.
- (1993c) Videotapes of Hong Kong signing. Videotapes preserved at the Linguistics Research Laboratory, The Chinese University of Hong Kong, Shatin, New Territories.

SCHOOL TO WORK TRANSITION IN JAPAN

An Ethnographic Study

Kaori Okano

The most crucial and controversial aspect surrounding late teen development is school to work transition. This book is based on a participant-observation study of the practice of school to work transition at two Japanese urban vocational high schools. It describes the framework of that transition, and in particular, the way individual students and teachers respectively interpreted their experience of that trajectory of this group of students, who were, as a group, labelled as the academically least successful. It gives an insight into the relationship between social values, family ethos, industry, school and economic performance, and the relatively low class consciousness in Japan. Accordingly it will be of interest to educationalists, sociologists and labour relations specialists studying Japan.

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