

- functional categories and hierarchical structure*. Cambridge, MA: MIT Press.
- Padden C A (1988). *Interaction of morphology and syntax in American Sign Language*. New York: Garland.
- Petronio K M (1993). Clause structure in American Sign Language. Ph.D. diss., University of Washington.
- Quadros R M de (1999). Phrase structure of Brazilian sign language. Ph.D. diss., Pontificia Universidade Católica do Rio Grande do Sul.
- Sandler W & Lillo-Martin D (in press). *Sign language and linguistic universals*. Cambridge: Cambridge University Press.

- Shepard-Kegl J (1985). Locative relations in ASL word formation, syntax and discourse. Ph.D. diss., MIT.
- Siple P (ed.) (1978). *Understanding language through sign language research*. New York: Academic Press.
- Stokoe W C (1960). 'Sign language structure: an outline of the visual communication systems of the American deaf.' *Studies in linguistics: occasional papers*. Buffalo, NY: University of Buffalo.
- Wilbur R B (1987). *American Sign Language: linguistic and applied dimensions*. Boston: College-Hill Press.

Sign Language: Transcription, Notation, and Writing

C Miller, Gallaudet University, Washington, DC, USA

© 2006 Elsevier Ltd. All rights reserved.

The complex nature of the signal in sign languages places special demands on notation systems, orthographies, and the transcription process itself. Signing is composed of visible gestures of the hands, arms, head, and body, which use space in linguistically meaningful ways. No single system has achieved the status of a standard notation for signing comparable to the IPA for spoken languages, and everyday sign language writing is the exception rather than the norm.

The process of transcribing signed data, as well as the kind of notation adopted, depends primarily on the uses and applications of the data. Different kinds of conventions are used depending on whether transcribed data are used for phonological analyses, morphological, discourse, or syntactic analyses. For the latter three, sets of fairly widespread conventions have evolved (see Klima and Bellugi, 1979). Signs are represented by upper case word glosses (joined by hyphens if more than one word is required to represent a sign's meaning), additional information usually provided in lower case. If a distinction between the two hands is important in the sentential or discourse context, the two hands are usually noted on two separate lines; information about non-manuals and mouthing, is normally placed on a line above the sign glosses.

Various systems have been developed to note the phonological structure of signs. One of the first, and the most influential, is introduced in Stokoe (1960). This notation matches handshapes to the closest letter of the American manual alphabet and ASL numbers, and uses conventionalized iconic symbols for location, movement and spatial relation. Stokoe notation has been extended and adapted since: Mandel (1981) for American Sign Language, Kyle

and Woll (1985) and Brien (1992) (British Sign Language), and Bergman (1993) (Swedish Sign Language), contain some of the most extensive descriptions of such modifications, which involve adding symbols for aspects of sign structure absent in Stokoe, in particular for handshapes not in ASL or symbols that better match the local manual alphabet values (e.g., Bergman or Radutzky, 1979). Another outgrowth of Stokoe notation (Liddell and Johnson, 1989) adds detailed, word-based descriptions of movement and location structure. HamNoSys (Prillwitz and Zienert, 1990) is fairly widely used, and while similar in principle to Stokoe notation, uses iconic representations of handshape instead of letter and number symbols. Other, less widely used systems are referenced in the bibliography.

Although sign languages are rarely written down for everyday communication, two significant attempts at developing writing systems have been proposed: *Mimographie* (Bébian, 1825) and Sign Writing (Sutton, 1981), which has gained a certain following.

Software alternatives to transcription on paper have begun to appear, each of which allows computerized transcriptions to be linked to stretches of digitized video. Significant software packages are SyncWriter (Papasprou and Zienert, 1990), SignStream (Neidle, 2001) and Elan (Eudico Linguistic Annotator) from the Max Planck Institute in Nijmegen,

See also: Sign Language: Discourse and Pragmatics; Sign Language: Phonology; Sign Language: Syntax.

Bibliography

- Bébian R A (1825). *Mimographie ou essai d'écriture mimique, propre à régulariser le langage des sourdsmuets*. Paris: Colas.

- Bergman B (1993). *Kompedium i teckentranskription*. Institute of Linguistics: Stockholm University.
- Brien D (ed.) (1992). *Dictionary of British sign language/English*. London: Faber and Faber.
- Klima E & Bellugi U (1979). *The signs of language*. Cambridge, MA: Harvard University Press.
- Kyle J & Woll B (1985). *Sign language. The study of deaf people and their language*. Cambridge, UK: Cambridge University Press.
- Liddell S & Johnson R E (1989). 'American sign language: the phonological base.' *Sign Language Studies* 64, 195–227.
- Mandel M (1981). 'Phonotactics and morphophonology in American sign language.' Ph.D. diss., University of California, Berkeley.
- Miller C (2001). 'Some reflections on the need for a common sign notation.' *Sign Language and Linguistics* 4(1/2), 11–28.
- Neidle C (2001). 'SignStream™: A database tool for research on visual-gestural language.' *Sign Language and Linguistics* 4(1/2), 203–214.
- Papasprou C & Zienert H (1990). 'The syncWRITER Computer Programme.' In Prillwitz S & Vollhaber T (eds.) *Sign language research and application*. Hamburg: Signum. 275–294.
- Prillwitz S & Zienert H (1990). 'Hanburg Notation System for sign language: development of a sign writing with computer application.' In Prillwitz S & Vollhaber T (eds.) *Sign language research and application*. Hamburg: Signum. 355–379.
- Radutzky E (1979). 'La lingua italiana dei segni: historical change in the sign language of deaf people in Italy.' Ph.D. diss., New York University.
- Stokoe W C (1960). 'Sign language structure: An outline of the visual communication systems of the American deaf.' *Studies in Linguistics. Occasional Paper* 8. Buffalo, NY: University of Buffalo.
- Sutton Valerie (1981). *Sign writing for everyday use*. Boston, NY: Sutton Movement Writing Press.

Relevant Website

<http://www.SignWriting.org>

Sign Language: Variation

C Lucas Dr, Gallaudet University,
Washington, DC, USA

© 2006 Elsevier Ltd. All rights reserved.

Natural sign languages are autonomous linguistic systems, independent of the spoken languages with which they may coexist in a given community. As sign languages are full-fledged autonomous linguistic systems shared by communities of users, the sociolinguistics of sign languages can be described in ways which parallel the description of the sociolinguistics of spoken languages. That is, the sociolinguistics of sign languages concerns the interrelationship of sign language and social structure. As with spoken languages, sign languages are at once used to communicate information and to define the social situation, i.e., to make statements about individual identity, group loyalties, and one's relation to one's interlocutors. The sociolinguistics of sign languages includes the study of regional and social variation, bilingualism and language contact phenomena, language maintenance and choice, language attitudes, language policy and planning, and discourse analysis (Lucas, 1995, 2001). However, it is very important to understand that while each of these areas has relevance for deaf communities, the sociolinguistics of sign is a

relatively young discipline and there exist few if any empirical studies in some of these areas.

Regional and Social Variation

Regional and social variation in sign languages has been described mainly at the phonological and lexical levels, and to a lesser extent at the morphological and syntactic levels. Variation at the phonological level involves variation in the production of the component parts of signs, such as handshape, location, palm orientation, nonmanual signals, and segmental structure. For example, the American Sign Language (ASL) signs FUNNY, BLACK, and CUTE might be produced with the thumb extended or with the thumb closed; the ASL signs BORED and DEAF might be produced with the little finger extended or with the little finger closed; the ASL sign WEEK might be produced with the palm of the dominant hand facing upward or the palm facing downward; the ASL sign KNOW might be produced on the forehead or on the cheek. Lexical variation concerns different signs for the same concept. Regional differences have been described in British Sign Language (BSL), for example, between Reading and York for the signs LEARN, SUNDAY, and WHO (Deuchar, 1984: 131). Lexical variation in BSL has also been described by Kyle and Woll (1985). Lexical variation