

## Sign languages: Overview

Sign languages are the primary means of communication among Deaf signers or hearing children of deaf parents (the capitalization of "Deaf" indicates the culture associated with deafness). In the cultural area covered by this encyclopedia, the best-studied are Chinese Sign Language (CSL), Hong Kong Sign Language (HKSL), and Taiwan Sign Language (TSL) (see separate entries).

Linguistic research on sign languages began with Stokoe (1960) and Stokoe *et al.* (1965), who studied American Sign Language (ASL). Unfortunately, even after half a century of intensive research (see Brentari 2010, Pfau *et al.* 2012, for recent overviews), we must begin by explaining, as do many articles for non-specialists, how we know that sign languages are natural languages.

First, they were not consciously invented, but arose spontaneously in communities of Deaf people who adopted sign languages for communication. Even hearing children go through a stage where they use manual gestures in a word-like fashion (Bates and Dick 2002). Deaf children born to hearing parents but not exposed to sign language tend to develop a home-sign system (Frishberg 1987, Goldin-Meadow 2003). When deaf children bring their various home signs into a larger Deaf community, as in deaf schools, where teachers may use yet another signing system, the disparate systems creolize into a full-fledged language (Fischer 1978; Singleton and Newport 2004). The birth of Nicaraguan Sign Language is a prime example of this (Senghas 1995, Senghas and Coppola 2001).

Second, sign languages are not parasitic on spoken or written language grammar. Differences in the modality of communication between sign language and spoken language, as well as the speed of transmission of linguistic information between the oral as against manual articulators, make it difficult if not impossible to synchronize sign language grammar

with spoken language grammar and at the same time maintain the pace of communication. Deliberate attempts to do so have resulted in artificial signing systems like English-based signing (e.g. Suppala 1991) or Chinese-based signing (e.g. Lin *et al.* 2001 & Lin *et al.* 2006). When using such systems, signers tend to drop some morphemes, particularly those representing spoken language function morphemes (articulated sequentially, instead of simultaneously with root and stem morphemes as in natural sign languages).

Finally, sign languages have grammatical systems of the same essential structure found in spoken languages, including syntax, morphology, and even phonology (the interface system that links the above levels with the visual/manual modality). These grammars are largely independent of the surrounding spoken language. For example, instead of the noun-phrase-internal classifiers of Sinitic languages, CSL, HKSL and TSL, like all sign languages (Emmorey 2003), merge verbal classifiers (a fixed inventory of handshapes) with the verb root, articulated by abstract path movements, in the formation of structures commonly referred to as classifier predicates.

Sign languages show less diversity (Sandler and Lillo-Martin 2006) than spoken languages (Evans and Levinson 2009). In the case of those discussed here, this is partly due to shared history. Far from being a form of signed English, ASL is historically related to French Sign Language (*Langue des signes française*, or LSF): the first American deaf schools were founded in the early 1800s by teachers trained in France (Frishberg 1979). Similarly, TSL is related to Japanese Sign Language (JSL), since the first deaf schools in Taiwan were founded in the early 1900s, during the Japanese occupation era, with the Taipei (northern) and Tainan (southern) varieties of TSL related, respectively, to the Tokyo and Osaka varieties of JSL (Smith 2005). JSL was itself influenced by European deaf education of the late 1800s (Nakamura 2006). TSL was also influenced by deaf educators who arrived from Nanjing and Shanghai after 1945 (Smith 2005). Educators from Shanghai also founded the first deaf

schools in Hong Kong in the 1940s and 1950s (Sze *et al.* 2013). The Shanghai variety of CSL, in turn, is historically linked to the first deaf schools set up in Shāndōng 山東 by American missionaries in the late 1800s (Fischer and Gong 2010). The native, localized sign languages that likely existed prior to these deaf schools have yet to be investigated (cf. Lane *et al.* 2000 on the pre-deaf-school history of ASL).

Sign languages are also limited in diversity because the creolization of home signs and the greater role of iconicity in the visual modality make it difficult for sign languages to accrue diachronic quirks (Aronoff *et al.* 2005). They also share universals with spoken languages. For example, Zhang (2007) demonstrates that the structure of noun phrases in TSL, despite being somewhat flexible, conforms to Universal 20 of Greenberg (1963).

All sign languages permit the simultaneous articulation of morphemes (e.g. Mathur and Rathmann 2010), one of the grammatical devices that makes it possible for signers to produce about the same number of propositions per second as do users of spoken languages (Bellugi and Fischer 1972, Bellugi *et al.* 1979 for ASL; Myers *et al.* 2011 for TSL). Examples of verbal subject/object agreement (taken from the HKSL and TSL lemmas) are shown schematically in (1), representing the signed forms in Figures 1a and 1b, respectively. The digits (third and first person) and letters (both third person) represent distinct locations in space. The subscript variation here is solely due to differences in notation across authors; the two languages actually encode person agreement exactly the same way, with first person represented by the space closest to the signer, and third person by spaces off to the side.

(1) a. HKSL: YESTERDAY, KENNY <sub>3</sub>TELL<sub>1</sub> PEN HIS<sub>a</sub> BRENDA STEAL<sub>a</sub>.

“Yesterday, Kenny told me Brenda stole his pen.”

b. TSL: CAT-i DOG-j BITEj-i

"The dog bit the cat."

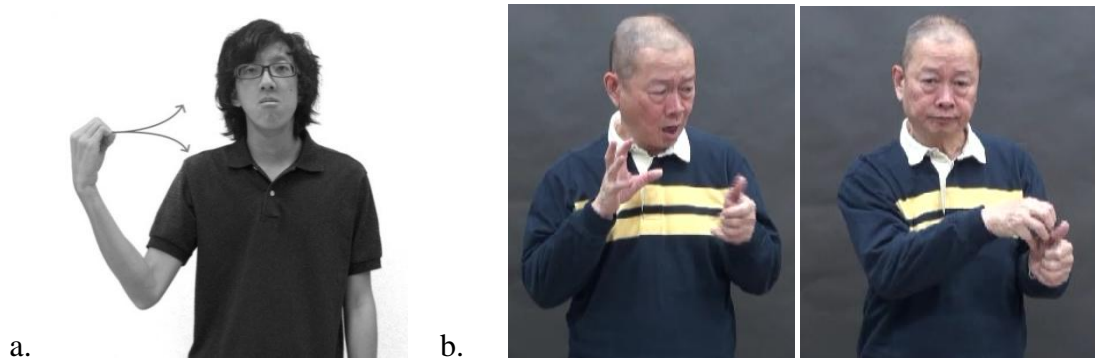


Figure 1. Person agreement in HKSL and TSL. (a) HKSL  $_3$ TELL $_1$  (cf. (1a)); (b) TSL BITEj-i (cf. (1b)).

Sign languages do borrow from the surrounding hearing culture. Thus CSL, HKSL, and TSL all have so-called character signs (Ann 1998, Fischer and Gong 2010), which attempt to mimic the visual form and/or brush strokes of Chinese characters. Just as with Chinese-based signing more generally, artificially invented character signs may be rejected or modified by native signers if they are ill-suited to the visual/manual modality (Lee 2013). For example, the character sign for 仁 *rén* 'benevolence', as promulgated by the Taiwanese government (Figure 2a), is actually reversed when borrowed into TSL (Figure 2b). This is apparently because both sign producers and viewers prefer iconic representations to be signed from the narrator's perspective (Emmorey *et al.* 1998).

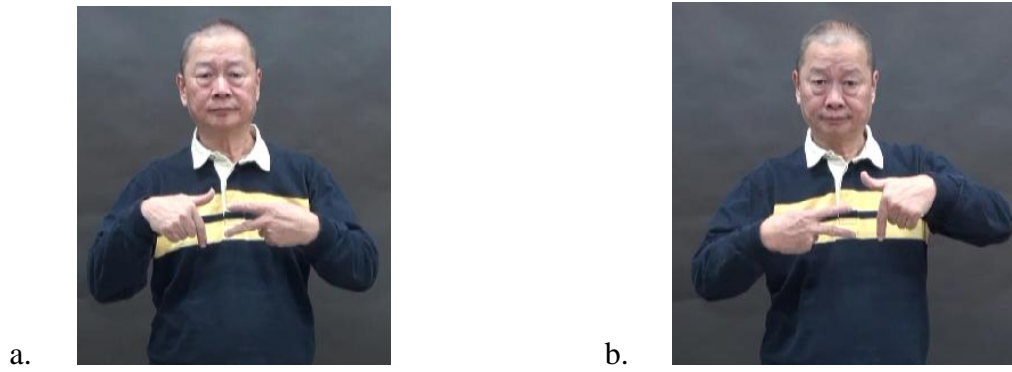


Figure 2. Character signs for 仁 *rén*. (a) Chinese-based signing (based on Ministry of Education 2008:9); (b) TSL (based on Chang 2011:172).

Despite the above similarities, CSL, HKSL, and TSL differ in a number of ways, most obviously in vocabulary. Figure 3 illustrates this, and also some of the variation that occurs within language areas.

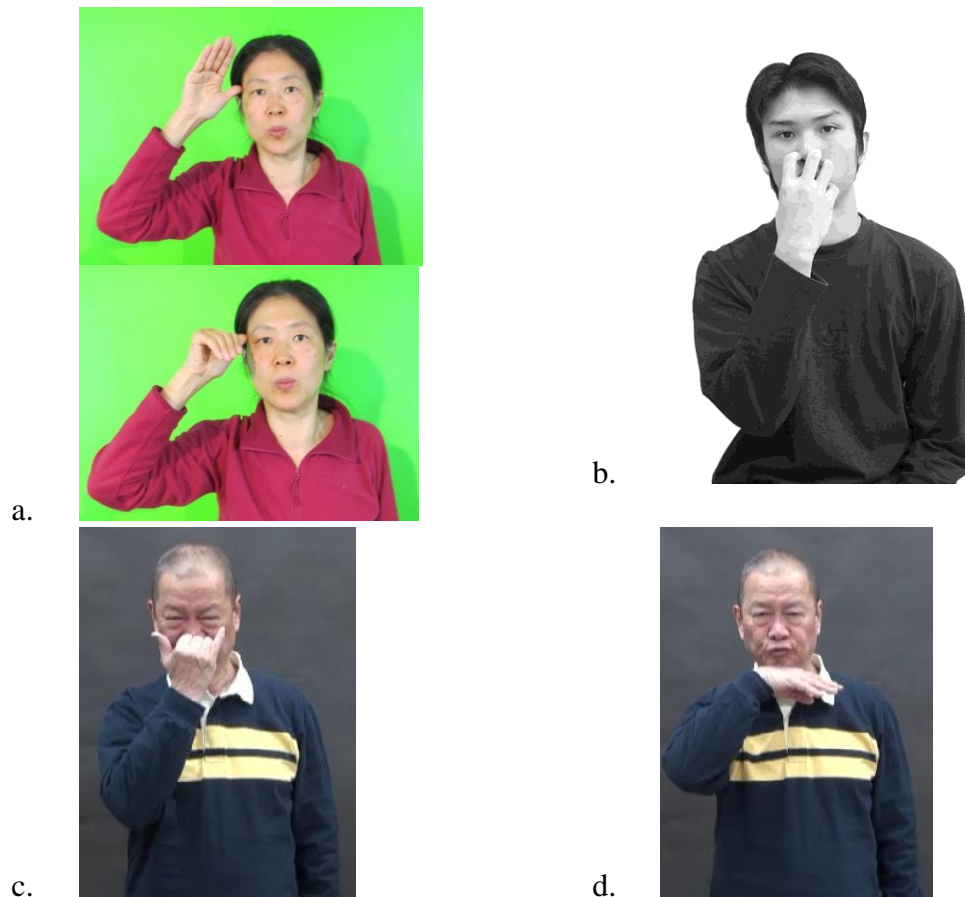


Figure 3. Signs for PIG. (a) CSL (based on Zhōngguó Lónggrén Xiéhuì 中国聋人协会 2003:693); (b) HSKL (Tang 2007:621); (c) TSL, northern variety (based on Tsay *et al.* 2009); (d) TSL, southern variety (based on Tsay *et al.* 2009).

The handshape notations used by CSL, HSKL, and TSL linguists also differ, but this is merely because sign languages still have no generally accepted equivalent of the International Phonetic Alphabet (van der Hulst and Channon 2010); their handshape inventories are in fact virtually identical. Nevertheless, handshapes may differ in their phonemic status across languages. As noted by Myers (2007), whenever the handshape in Figure 4a (B in the ASL fingerspelled alphabet) appears in TSL, the thumb side of the hand is always close to or touching another body part, as in Figures 4c-d (the sole exception in Tsay *et al.* 2009 is BEER, a borrowing using ASL fingerspelled B-E). This restriction is not found in HSKL, as shown

in Figures 4e-f. Thus while in TSL the B handshape seems to be a predictable variant of the handshape in Figure 4b, in HKSL it is phonemic (lexically specified).



Figure 4. The B and open B handshapes in HKSL and TSL. (a) B handshape (TSL symbol: 胡 *hú*; HKSL symbol: B); (b) Open B handshape (TSL symbol: 手 *shǒu*; HSKL symbol:  $\dot{B}$ ); (c) PLEASE (TSL; based on Tsay *et al.* 2009); (d) DOOR (TSL; based on Tsay *et al.* 2009); (e) KNIFE (HKSL; Tang 2007:404); (f) DOOR (HKSL; Tang 2007: 420).

Sign languages also differ in morphosyntax. For example, while CSL, HKSL, and TSL all use movement to mark agreement on the verb (Figure 1), TSL can also put this movement on a separate grammatical morpheme, and can also mark gender agreement via handshape, both features inherited from JSL (Fischer and Gong 2010).

Research on sign languages is in its infancy. Much remains to be learned about the historical and areal relationships of CSL, HKSL, and TSL, as well as their grammatical similarities and differences.

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## Summary

Sign languages are the primary means of communication of Deaf people, naturally acquired, grammatically rich, and mostly independent of spoken and written languages. In the area covered by this encyclopedia, the best-studied are Chinese Sign Language, Hong Kong Sign Language, and Taiwan Sign Language. This lemma reviews their historical relationships, similarities, and differences.

## Index terms

sign language

American Sign Language

Chinese Sign Language

Hong Kong Sign Language

Taiwan Sign Language

universals