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CHAPTER 55

TAIWAN SIGN LANGUAGE

History, Structure, and Adaptation

JAMES H.-Y. TAI AND JANE S. TSAY

55.1 Introduction

Taiwan Sign Language (TSL) is here defined as the native language developed and used by the deaf in Taiwan. Smith (2005) reported that it was used by approximately 30,000 deaf persons residing in Taiwan. According to the 2012 report of the Ministry of the Interior, Taiwan, there were about 122,285 citizens with Hearing Mechanism Disability in Taiwan.

The history of TSL can be dated back to when the school for the deaf was established in 1915 by the Japanese during the period of Japanese occupation of Taiwan (1895–1945). Little is known about what kind of sign language existed in Taiwan prior to the Japanese occupation. Korea was also occupied by Japan during 1910–1945. Therefore, TSL as well as Korean Sign Language are historically related to Japanese Sign Language. Even today, TSL still shares a high degree of similarity of lexicon to sign languages of Japan and Korea.[1]

During the Japanese occupation of Taiwan, soon after the first deaf school was established in Tainan (in southern Taiwan) in 1915, another deaf school was founded in Taipei (in northern Taiwan) in 1917. The first group of Japanese teachers at Tainan Deaf School came from the Osaka area in Japan, while the first group of Japanese teachers at Taipei Deaf School came from the Tokyo area. The dialectal differences of Japanese Sign Language in these two areas thus contributed to the initial differences between the southern dialect and the northern dialect of TSL. These two TSL dialects are mutually intelligible; the grammatical structures for the two dialects are basically the same, and the differences are primarily lexical. For example, the words CAR, WINE, VEGETABLE, GREEN ONION, PINEAPPLE are signed differently in these two dialects of TSL.

After World War II, in 1945, Taiwan was turned over to China. The Japanese teachers at both schools for the deaf in Taiwan were sent back to Japan. The Taiwanese teachers at both schools continued to teach the students with Japanese Sign Language. In 1949, the Communist Party came to power in China, resulting in a large immigration of more than 2 million Chinese from Mainland China to Taiwan. Some deaf people and several former teachers at the Nanjing and Shanghai schools for the deaf also came to Taiwan and brought with them Chinese Sign Language. Therefore, some signs from Chinese Sign Language may also have been introduced into TSL.[2]

Also, after 1945, Mandarin Chinese replaced Japanese as the official language for education, administration, and mass media in Taiwan. At the same time, Signed Chinese became the medium of instruction at the deaf schools. Signed Chinese is an artificial language that employs Chinese grammar but adopts TSL signs and signs invented based on Chinese morphology.[3] Although Signed Chinese is very different from TSL in morphology and syntax, it shares a large number of lexical items with TSL. In Taiwan, TSL is known as *ziran shouyu*自然手语 'natural sign language', while Signed Chinese refers to the signed Mandarin Chinese known as *wenfa shouyu*文法手语 'grammatical sign language', and Chinese Sign Language refers to the sign language used in mainland China, known as *zhongguo shouyu*中国手语 'Chinese sign language'.

TSL and Signed Chinese in Taiwan are mutually intelligible, mainly at the level of the shared vocabulary and frozen phrases. In actual discourse the mutual intelligibility might be reduced due to the differences in grammatical structures. However, systematic investigations on the mutual intelligence are yet to be conducted.

In the following sections, we outline the phonology, morphology, and syntax of TSL.

55.2 Phonology

As in all signed languages, TSL phonology can be described in terms of handshapes and their phonemic contrasts in location, movement, hand orientation, and nonmanual features.

55.2.1 Handshape Inventory

We have identified sixty-two distinctive handshapes for TSL based on a modification of previous research (cf. Smith and Ting 1979, 1984; Lee 2003; Chang et al. 2005). In these previous studies, handshapes in TSL were named in Chinese characters. In this chapter, we adopt the American Sign Language handshape names in English alphabet and numeral digits, plus necessary variations. Examples are given in (1).[4]

(1) SIX and FAST contain the same handshape L

a. handshape L b. SIX c. FAST

Ann (1993, 2006) provides a physiological basis for handshape with a special focus on Taiwan Sign Language. See also Myers et al. (2005) for discussion on handshape chage.

55.2.2 Phonemic Contrast in Location

PLEASE versus YES is a pair of signs that contrast in location. They both use the handshape B (2a), with the palm parallel to the center plane of the body. The index finger of the hand in PLEASE makes contact on the forehead (2b), while in YES ('confirmation') the contact is at the chin (2c).

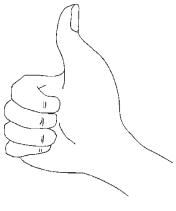
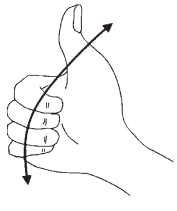
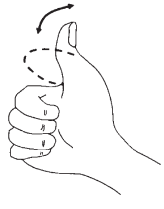
(2) Phonemic contrast in location: PLEASE vs. YES

a. handshape B b. PLEASE c. YES

55.2.3 Phonemic Contrast in Movement

MALE versus THANK is a pair of signs that contrast in local movement. Both signs use the handshape open A (3a). In MALE (3b) the hand shakes horizontally, while in THANK (3c) the thumb bends repeatedly.

(3) Contrast in local movement: MALE vs. THANK

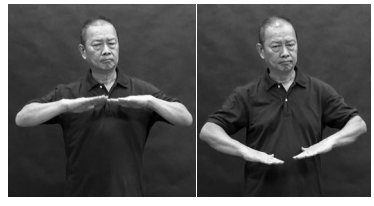




a. handshape Open A b. MALE c. THANK

55.2.4 Phonemic Contrast in Hand Orientation

NOW versus CALM-DOWN is a pair of signs that contrast in hand orientation. They both use the handshape Open B (4a) on both hands, and both start with the hands palm-downward and involve downward movements, but in NOW, the fingertips of both hands point forward away from the body (4b), while in CALM-DOWN they point toward each other (4c).

(4) Contrast in hand orientation: NOW vs. CALM-DOWN

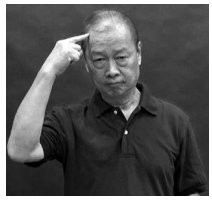


a. Open B b. NOW c. CALM-DOWN

55.2.5 Phonemic Contrast in Nonmanual Features

HEAD versus UNDERSTOOD is a pair of signs that contrast in nonmanual features. They both involve the handshape 1 (5a), with the index tip contacting the temple, but in HEAD no facial expression is made (5b), while in UNDERSTOOD, the mouth is rounded and sucks in air, and the head moves backward at the same time (5c).

(5) Contrast in nonmanual features: HEAD vs. UNDERSTOOD



a. handshape 1 b. HEAD c. UNDERSTOOD

55.3 Morphology

This section focuses on noun compounding (serial compounding and parallel compounding) and inflectional morphology.

55.3.1 Noun Compounding

Compounding differs from affixation in that more than one root morpheme is involved. There are many examples of serial compounds in TSL, which are distinguished from phrases by the order of the morphemes (sometimes reverse of that found in phrases), semantic opacity, and phonological simplification. In the following we illustrate the first two of these diagnostics (originally established for ASL by Liddell and Johnson 1986; see also Smith 1982).

Noun phrases in TSL usually have the order [noun^modifier]. So the [modifier^noun] or [noun^noun] structure suggests compounding. Examples in (6) illustrate nonphrasal morpheme order.

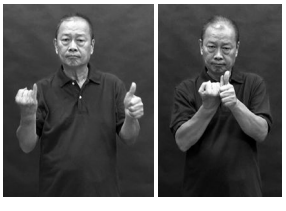
(6) Serial compounds: [modifier^noun] or [noun^noun]
   a. APPLE = RED^FRUIT
   b. JUDGE = LAW^MALLET
   c. PERSONALITY = PERSON^HABBIT
   d. HEARSE = COFFIN^CAR

Examples in (7) illustrate semantic opacity.

(7) Serial compounds: semantic opacity
   a. COFFEE = BROWN^STIR
   b. ONE O'CLOCK = TIME^ONE
   c. DEFICIT = RED^HIGH LEVEL
   d. SURRENDER = WHITE^FLAG

Due to the simultaneity of visual modality, parallel compounding is also found in sign language. In MARRY, one hand with the sign MALE and the other hand with the sign FEMALE move simultaneously to meet each other in front of the chest (8). ("∪" indicates that the two roots are produced simultaneously, i.e., parallel compound.)

(8) MARRY = MALE∪FEMALE (hands moving to meet each other)



MALE∪FEMALE—together

55.3.2 Verb Inflection

The classic work on TSL verb inflection is Smith (1989). Verb inflections in TSL include agreement and aspect markers but apparently not tense markers.

Agreement includes subject–object agreement (usually simultaneous/nonconcatenative), verb–subject agreement (using predicate classifier), gender agreement, and number agreement.

Aspect marking includes perfective, progressive, and durational aspect, which indicates prolonged status and/or intensity and frequency.

55.3.2.1 *Agreement*

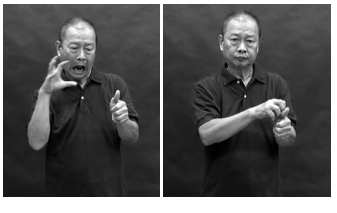
The following are some general observations about agreement in TSL. First, agreement showing a grammatical relation is marked by nonconcatenative morphology, specifically by moving the hand away from the subject and/or toward the object. This appears to be a sign language universal (Aronoff et al. 2000), leading some to question whether this should be understood as grammatical agreement at all rather than as an iconic representation of relations between entities in some mental space (e.g., Liddell 2003).

As shown in (9) 'The dog bit the cat', the verb BITE moves from the agent DOG (co-indexed with j) toward the patient CAT (co-indexed with i).[5] (Note that the patient CAT is signed first, possibly due to topicalization or a topic-comment structure.)

(9) The dog bit the cat.

a. CAT_i

b. DOG_j



c. $BITE_{j \rightarrow i}$

Second, some verbs also show agreement with the subject via the use of (predicate) *classifiers* (but see Liddell 2003 and Chang et al. 2005 for a different analysis).

In (10) 'The dog entered the house', $HOUSE_i$ is mentioned first (10a). Then the subject DOG_j is signed in full form as in (10b) but in the form of an animal classifier DOG_{pro} being inflected on the verb $ENTER_{j \rightarrow i}$ as in (10c). Example (10c) also illustrates classifier predicates in which both subject and object in proforms are simultaneously signed with the verb (Chang et al. 2005). In sign language research, (10c) has been referred to as a classifier predicate and the proform signed with the dominant moving hand as a classifier because the proform can represent different animals with four legs, exhibiting categorizing function as classifiers in spoken languages.

(10) The dog entered the house.

a. $HOUSE_i$

b. DOG_j

c. $HOUSE_{pro} + DOG_{pro} - ENTER_{j \rightarrow i}$

Third, there also appears to be agreement with gender and number features. Gender agreement (if used) is also indicated by predicate classifiers. For example, the default form of TELL (someone) uses the thumb, as in (11a), while in (11b) 'Tell her', the third-person singular pronoun, indicated by the left position, is marked with the female classifier, the pinky.

(11) The difference between TELL and TELL-HER.

a. TELL

b. WOMANpro+TELL

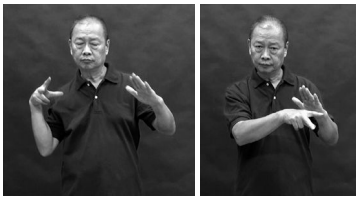
55.3.2.2 *Aspect Marking*

Regarding aspect marking, it is not clear whether TSL marks perfective aspect on verbs of motion by holding the final position at the end of the verb, similar to what Sandler (1993) observed for ASL. As in (12), there seems to be a hold at the end, marking the termination of the sentence.

(12) The dog ran (has run) into the house.

a. HOUSE

b. DOG


c. $HOUSE_{pro}+DOG_{pro} - RUN.INTO_{[hold]}$

A more common way of expressing perfective is adding a morpheme 'finished, terminated' after the verb as in (13).

(13) He has come (arrived).

a. HE

b. COME

c. FINISH

Intensity and frequency are often marked by reduplication. Reduplication with a simultaneous raise of the hand(s) also indicates the increase of degree or intensity in either quality or quantity. For example, ADD is signed with the side of one fist (facing outward) touching the side of the other fist (facing inward). When the movement in ADD is reduplicated together with the reduplicated raise of the two hands, it means 'keep increasing'.

55.3.3 Classifier Constructions

The central part of sign language grammar involves classifier constructions. A classifier construction consists of a classifier and its simultaneously co-occurring predicate. Following Sandler and Lillo-Martin (2006), we include the description of classifier constructions in the section on morphology rather than syntax.

Classifiers in TSL are all from the basic handshapes. A catalogue of TSL classifiers with their categorization is given in Tables 55.1 to 55.7, based on a small set of physical and semantic features underlying the lexicon and syntax of human language.

Table 55.1 Whole entity classifiers in TSL—animate entities

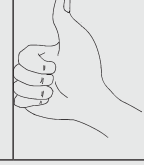
	a. human beings, animals		b. females
	c. animals, human beings		d. human beings, males, animals

Table 55.2 Whole entity classifiers in TSL—inanimate entities

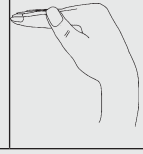
	a. 3D objects (ball, stone, apple)		b. 3D small objects (small-size fruits)
	c. 2D round objects (CD, biscuit)		d. 2D round small objects (coin, button)
	e. 2D flat objects (paper, leaf, surface of objects)		f. 1D horizontal objects (river, road, rope)
	g. 1D vertical objects (flag pole)		h. 0D small objects (raindrop, bean)
	i. train/truck/bike		j. airplane
	k. car		l. boat

Table 55.3 Whole entity classifiers in TSL—instrument

	a. toothbrush		b. comb
	c. scissors		d. knife

Table 55.4 Limb classifiers in TSL

	a. walking, standing, and swimming		b. kneeling down
	c. jumping		d. jumping on one leg

Table 55.5 Part classifiers in TSL—animate entities

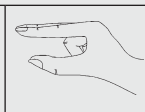
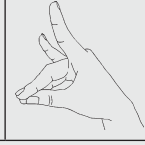
	a. chicken		b. duck
	c. goose		d. dragon, giraffe

Table 55.6 Part classifiers in TSL—inanimate entities

	a. bicycle, motorcycle		b. telephone
	c. spout (for filling the gasoline)		d. clothes hanger

Table 55.7 Handling classifiers in TSL

	a. grasping concrete or abstract entities		b. round or cylindrical objects (ball, mug)
	c. objects with handlers (hammer, toothbrush, saw)		d. tiny objects (needle, thread)

55.4. Basic Syntax

In addition to classifier constructions described in Section 54.3.3., the basic syntax of a sign language would involve word order centering around three types of verbs.

55.4.1 Three Types of Verbs and Word Order

Like in other sign languages, verbs in TSL can be classified into plain verbs, agreement verbs, and spatial verbs. Plain verbs do not move through sign space to show grammatical relations. They use SVO word order to indicate subject–object grammatical relation, although OSV and SOV orders are also very common due to topicalization of the object. Agreement verbs indicate the subject–object grammatical relationship by moving through sign space. Spatial verbs convey the information about movement and location of an object in the real world. The moved objects may be subject or object.

In other words, while spatial verbs move in topographic space, which reflects the layout of things in the real world, agreement verbs move in syntactic space, which is created within the language and may not map onto the real world (Sutton-Spence and Woll 1999). In the following sections, we briefly illustrate the three types of verbs.

55.4.1.1 *Plain Verbs*

Words such as LIKE, REMEMBER, FAMILIAR, THINK, FEAR, are plain verbs in TSL. They show relatively little modification and do not move through space to show grammatical information. Manner and aspect are marked in plain verbs by different speed of repetition of the verb and presence of nonmanual features. For example, to express the idea of doing something for a long time, the movement of the verb sign is typically lengthened. To indicate intensity, the verb sign is normally shortened and made with tense, retracted movements (Smith 1989:82–83).

Since plain verbs cannot move through space to show the information of grammatical relations, the subject and the object do not change the movement and orientation of the verb.

55.4.1.2 *Agreement Verbs*

Words such as BELIEVE, TELL, GIVE, ASK, SEE, PAY, and ANSWER are agreement verbs. Agreement verbs move through space to indicate the subject–object grammatical relationship, thus also allowing the inclusion of information about person and number of the subject and object. This is accomplished by moving the verb in syntactic space. That is, information about who is carrying out the action, and who or what is affected by the action, is shown by changes in movement and orientation of the verb.

Unlike plain verbs, agreement verbs change their forms in accordance with the subject or object of the sentence. The different forms that these verbs assume reflect different combinations of subjects and objects. In (14) and (15), for example, the agreement verb BELIEVE moves toward the position where the object is located. In (14) the verb moves toward the object position, that is, MOTHER, whereas in (15) the signer is the object; therefore, the verb moves toward the signer himself.

(14) MOTHER $\text{MOTHER}_{\text{pro}}$+FATHER BELIEVE.
'(My) father believes (my) mother.'

a. MOTHER

b. $\text{MOTHER}_{\text{pro}}$+FATHER

c. BELIEVE

(15) FATHER BELIEVE-ME.
'(My) father believes me.'

a. FATHER

b. BELIEVE-ME

Note that in an agreement verb, there is a start point (subject agreement marker), a linear movement (verb stem), and then an end point (object agreement marker). In general, the starting point of these verbs is the location of the subject, while the end point is where the object is. However, the agreement verbs such as INVITE, TAKE-FROM, BORROW, and so on are exceptions to this generalization. These verbs show "backward agreement" where the start point marks the object and the end point marks the subject.

55.4.1.3 *Spatial Verbs*

Spatial verbs use topographic space, not syntactic space. Spatial verbs in TSL include RUN, JUMP, WALK-TO. These verbs are referred to as "verbs of motion and location" (Supalla 1982) or "spatial-locative predicates" (Smith 1989). The sentence in

(16) is signed with a spatial verb RUN ABOUT and an animal classifier as in (16c). Note that the handshape for animal classifier is a bound morpheme and cannot be used in isolation.

(16) ROOM DOG ROOM$_{pro}$+ANIMAL-RUN.ABOUT.
'The dog is running about in the room.'

a. ROOM

b. DOG

c. ROOM$_{pro}$+ANIMAL$_{pro}$-RUN.ABOUT

As in (16c), the predicate RUN ABOUT contains information about the movement of the subject, and the classifier handshape ANIMAL is used for any animals with similar features. It is observed that the full sign (e.g., the dog) is normally produced first, followed by the classifier morpheme (e.g., ANIMAL). The full sign is usually needed to identify the referent; otherwise it is impossible to identify what the referent really is. As analyzed by Supalla (1982), spatial predicates have two parts—a movement morpheme and a classifier handshape morpheme.

In addition, spatial verbs may inflect to show manner and aspect, but they do not inflect for person or number. They can give information about the path, trajectory, and speed of movement of the action described by the verb and about the location of the action.

55.4.2 Auxiliaries and Word Order

One of the most interesting issues in sign language syntax is the general absence of auxiliaries in sign languages. TSL is the first sign language that has been demonstrated to have auxiliaries. Smith (1989, 1990) has identified three auxiliaries in TSL: Aux-1, Aux-2, and Aux-11, as given in (17).

(17)

Aux-1

Aux-2

Aux- 11

Their primary function is to convey the subject–object relationship in those situations where the main verb does not move in space. They occur before the main verb and carry the subject–object agreement for the main verb. Aux-1 is the most frequently used auxiliary. It uses the index figure to form the 1 handshape. To carry out the agreement, it begins with the tip of the 1 handshape either in contact with or just ahead of the center of the trunk and moves along a straight path to a new location wherein the tip of the index figure is pointing at the object locus. Aux-2 uses a bent V handshape to face an object locus, while the back of the hand faces the subject locus. Aux-11 is produced with both hands, with the strong hand acting on the weak hand. The strong hand is associated with the subject locus, while the stationary weak hand is associated with the object locus. Examples (18) and (19) illustrate how an auxiliary can be used to carry the agreement function for a plain verb.

(18) SISTER FEAR COCKROACH

'My sister is afraid of cockroaches.'

a. SISTER

b. FEAR

c. COCKROACH

(19) COCKROACH SISTER AUX-2 FEAR

'My sister is afraid of cockroaches.'

a. COCKROACH

b. SISTER

c. AUX-2

d. FEAR

Note that in (19) the word order is OSAuxV. The fact that auxiliaries must occur before the main verb argues for their status as auxiliaries and for some scholars as a piece of evidence for SVO as the underlying order in TSL, even though OSV and SOV are most common surface word orders in this language.

55.4.3 Word Order and Nonmanual Expressions for Modals, Negation, and Question

While auxiliaries for agreement function are placed before the main verb, modals (epistemic and deontic) are placed after the main verb, as in (20) and (21).

(20) HE FALL-DOWN WILL
'He will fall down'

(21) MOTHER REST MUST
'My mother must rest.'

However, some modals can be placed either before or after the main verb. When placed before the verb, they might also carry a connotation of willingness and ability on the part of the subject, as in (22) and (23).

(22) HE WILL COME.
'He will come.'

(23) HE CAN COME.
'He can come.'

Negation and other negative expressions are invariably ordered after the main verb. The negation signs or signs with negation incorporated into them are accompanied by different kinds of facial expression and head movement. For example, in (24), the negation sign is accompanied with narrowed eyes (en) and head shake (hs), while lips kept together and pushed out (mm). In (25), the negation sign is accompanied with narrowed eyes, head tilted back (ht<), and tongue protruded (th).

(24) en/hs/mm
HE TALL NOT-HAVE
'He is not tall.'

(25) en/ht</th
HE SIGN LANGUAGE NOT-ABLE
'He doesn't know sign language.'

In wh-questions, question words such as "who," "what," "where," "when," and others are placed at the end of the sentence. They are also accompanied with nonmanual expressions.

For example, in (26), the question word "who" is also accompanied with eyes opened (eo), brows knitted (ᵛᵛ), and head tilted slightly forward (ht>) In (27), the question word "what" is accompanied with eyes narrowed, brows knitted, and head tilted slightly back.

(26) eo/ᵛᵛ/ht>
LIKE HE WHO
'Who likes him?'

(27) en/ᵛᵛ/ht<
YOU THINK WHAT
'What are you thinking about?'

Yes/no questions in TSL are generally expressed without a question mark at the end of the sentence. Rather, nonmanual expressions are either used at the very end of the sentence or accompany the predicate. For example, in (28), the nonmanual expression consisting of opened eyes, head nod (hn), and raised brows (^^) is used after the predicate 'be drunk'. In (29), the same nonmanual expression is used but co-occurring with the predicate rather than after.

(28) eo/hn/^^
BROTHER DRUNK
'Is your brother drunk?'

(29) eo/hn/^^
FATHER WORK
'Are your father working?'

55.5 Language Environment and Adaptation

TSL is historically related to Japanese Sign Language and still shares a large number of lexical items and syntactic features with it. However, it should be noticed that TSL was surrounded by speakers of Japanese and Southern Min Chinese before 1945 and by speakers of Mandarin Chinese and Southern Min Chinese afterward. In addition to the contact with different varieties of Chinese Sign Language used in different major cities in China, character signs based on the Chinese writing system are commonly used along with a few finger-spellings based on the English alphabet.

The following methods of construction of character signs in TSL have been identified by Ann (1998).

1. To imitate the shape of either the whole or a part of a Chinese character by means of handshape: 中，王，田
2. To trace either the whole or a part of a Chinese character in the air: 千，就
3. To combine both (1) and (2) methods: 丁，毛
4. To use both handshape and the mouth: 中，品
5. To combine a natural sign with tracing: 太

Finger-spellings are used as M for McDanoud and MSN. In addition, loan translations from Chinese coinages are adopted for new things. For example, 'high speed railway', in addition to the mimic sign of the shape of the engine, can also be signed with TSL sign for 'high' compounded with sign for 'iron', a loan translation from the Chinese term 高铁 (high iron). Blending of TSL signs and character signs are also adopted to describe new things. For instance, 'cancer' is signed with TSL sign for the sickness plus the character sign for 品, pattern after the Chinese character 癌, which consists of a radical for sickness and a component character for品. In short, TSL can always find ways to express new things.

There are three major deaf schools located in northern, central, and southern Taiwan. Since the early 1970s, the Total Communication approach has been adopted for school instruction. Spoken Mandarin Chinese, Sign Chinese, and Written Chinese have all been used in classroom instruction, while deaf students continue to use TSL to communicate with each other. Thus the three deaf schools have also contributed to the change of TSL in the past century.

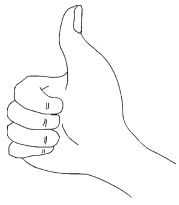
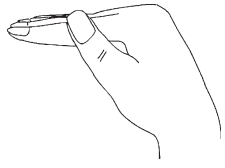
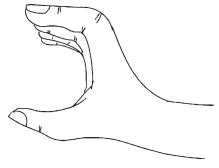
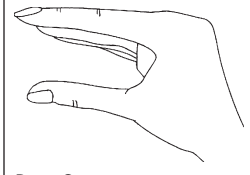
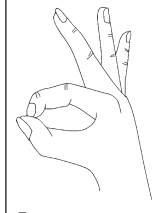
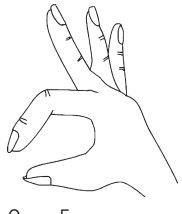
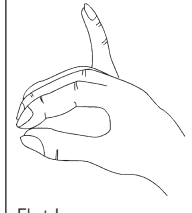
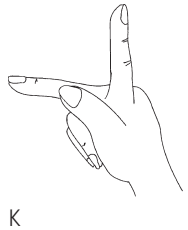
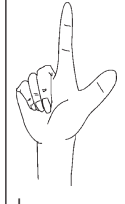
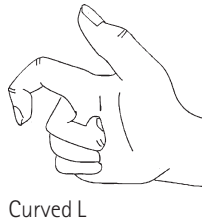
Nonetheless, deaf culture and deaf community are still defined by the use of sign language. An example of the culture is to name a person by his or her physical characteristics, akin to nicknaming in spoken languages. Another example is to use visual but not auditory means for applauding, attracting attention, alarming, and so on.

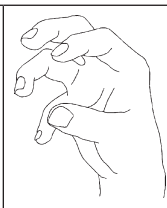
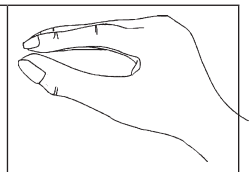
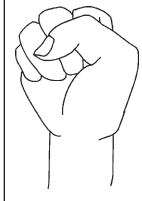
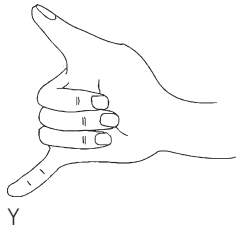
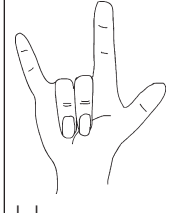
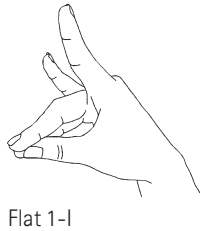
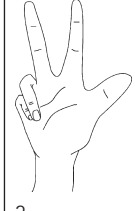
The language ambience of TSL from language contact and deaf education renders the language formidable for pure linguistic analyses. Nonetheless, we will continue to update the TSL browser and the manuscript of TSL reference grammar to provide a database for analysis and learning of this sign language in Taiwan. The current edition (3rd edition) of this dictionary (Tsay et al. 2014) contains about 3,000 lexical items. Under each lexical item, there is a video of the signing with a text description in both Chinese and English. See http://tsl.ccu.edu.tw/web/browser.htm

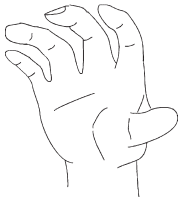
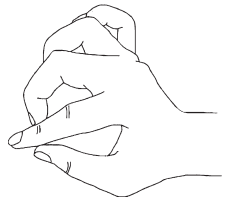
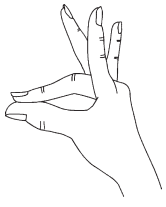
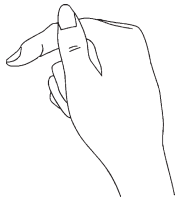
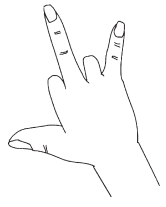
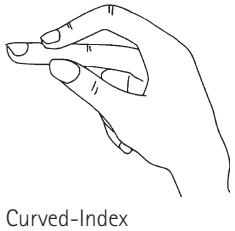
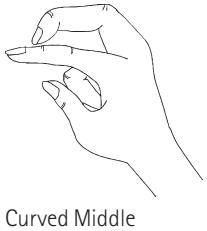
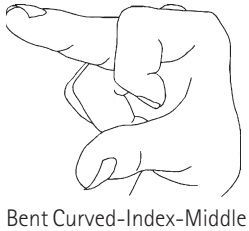
APPENDIX

HANDSHAPES IN TAIWAN SIGN LANGUAGE

Handshape names adopt the American Sign Language handshape names in the English alphabet and numeral digits with necessary variations. In parentheses are the handshapes names in Chinese characters used in previous studies on TSL. Romanization in Pinyin is provided along with the character names.

 Open A (男 nan)	Flexed A (副 fu)	B (胡 hu)	Open B (手 shou)
 Bent B (九 jiu)	 C (方 fang)	 Bent C (绅 shen)	 F (钱 qian)
 Open F (WC)	G (像 xiang)	I (女 nyu)	 Flat I (千 qian)
Curved I (虫 chong)	 K (欠 qian)	Open K (布袋戏 budaixi)	 L (六 liu)
Bent L (句 ju)	 Curved L (爺 ye)	Curved-Baby L (难 nan)	Flexed L (很 hen)

 Extended N (鸭 ya)	 0 (零 ling)	 Open O (果 guo)	 Flat O (万 wan)
 Bent-Baby O (鸡 ji)	 R (笔 bi)	 S (拳 quan)	 U (棕 zong)
 Curved V (二十 ershi)	 W (三 san)	 Curved W (三十 sanshi)	 Unspread W (童 tong)
 X (十 shi)	 Y (民 min)	 L-I (守 shou)	 X-I (奶奶 nainai)
 1-I (语 yu)	 Flat 1-I (龙 long)	 1 (一 yi)	 3 (七 qi)

 Curved 3 (虎 hu)	 4 (四 si)	 Curved 4 (四十 sishi)	 5 (五 wu)
 Bent 5 (同 tong)	 5-Curved Pinky (八 ba)	 Curved 5-Pinky (八十 bashi)	 Piled 5 (姜 jiang)
 8 (借 jie)	 Open 8 (菜 cai)	 Crossed Thumb-Index (只 zhi)	 Thumb-Midde-Pinky (飞机 feiji)
 Curved-Index (鹅 e)	 Curved Middle (博 bo)	 Middle (兄 xiong)	 Curved-Index-Middle (高 gao)
 Ring (姐 jie)	 Ring-Pinky (百 bai)	 Bent Curved-Index-Middle (矮 ai)	 Thumb-Pinky (细 xi)

Notes

1. See "Lexical Comparison of Signs from Taiwan, Chinese, Japanese, and American Sign Languages: Taking Iconicity into Account" by Shioufen Su and James H.-Y. Tai in Tai and Tsay (2009), 149–176.
2. For a more detailed description of the history of deaf education in Taiwan during 1945 and 1949, see Smith (2005).
3. In most communities in the world, a natural sign language and an artificial signed language coexist based on the grammar of the spoken language in the same community.
4. Pictures of the demonstrator are from the TSL Database of the Sign Language Research Group at the National Chung Cheng University, Taiwan, unless otherwise noted. The use of pictures has the approval of the demonstrator Mr. Yushan Gu.
5. The notation convention in this chapter follows mostly MacLaughlin (1997). Glosses of signs are written with capital letters. A dotted marker is used in a multiword gloss, as in SHOW.UP or RUN.INTO. "^" is used between parts of a compound sign, for example, MARRY (MALE^FEMALE). "+" marks simultaneous signing with both hands.

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