Chapter 2
Sign language types

This chapter defines four different sign language types, based on the information available in the respective sources. Before introducing the types of sign languages, I first report on the diachronic developments in the field of typological sign language research that gave rise to the distinction of the various sign language types.

Sign language research started about five decades ago in the United States of America mainly due to the pioneering work of Stokoe (2005 [1960]), Klima and Bellugi (1979), and Poizner, Klima and Bellugi (1987) on American Sign Language (ASL). Gradually linguists in other countries, mainly in Europe, became interested in sign language research and started analyzing European sign languages e.g. British Sign Language (BSL), Swedish Sign Language (SSL), Sign Language of the Netherlands (NGT) and German Sign Language (DGS). Most of the in-depth linguistic descriptions have been based on Western sign languages. Therefore, it has long been assumed that some fundamental levels of linguistic structure, such as spatial morphology and syntax, operate identically in all sign languages. Recent studies, however, have discovered some important variations in spatial organization in some previously unknown sign languages (Washabaugh, 1986; Nyst, 2007; Marsaja, 2008; Padden, Meir, Aronoff, & Sandler, 2010). In the context of growing interest in non-Western sign languages towards the end of the 1990s and more recently, there have been efforts towards developing a typology of sign languages (Zeshan, 2004ab, 2008, 2011b; Schuit, Baker, & Pfau, 2011). Although it has been repeatedly emphasized in the literature that the sign language research still has too little data on sign languages other than those of national deaf communities, based in Western or Asian cultures (Zeshan, 2008). In the 'mosaic of sign language data' Zeshan (2008, p. 675) shows the development of the state of knowledge about different sign languages available to the research (see Figure 1). This mosaic displays that our knowledge about languages in visual-gestural modality is still largely based on the data from Western European and North American sign languages. In the rightmost part of Figure 1, Zeshan inserts a question mark and hence leaves it open as to which sign languages may be discovered in the future.
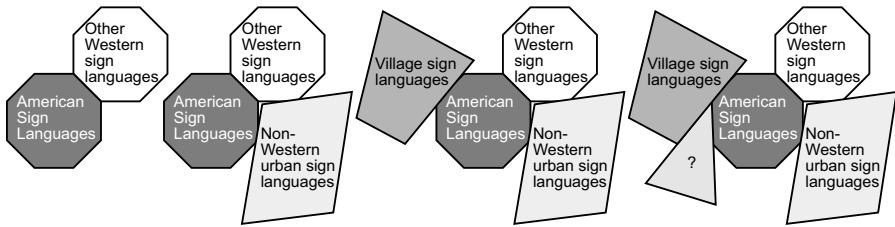
Figure 1. The mosaic of sign language data

Mainly due to the lack of data, no sign language typology yet exists based on the linguistic parameters and/or genealogical relationships. Hence, this chapter offers a sign language typology based on the sociolinguistic and sociocultural settings and presents sign language types not depicted in the mosaic shown in Figure 1. However, there are at least two types of signing which are not included in the typology to be presented in this chapter.

These are firstly the so-called "homesigns", i.e. the signing of deaf individuals growing up in entirely non-signing environments without the exposure to a usable sign language model. In the absence of such a model, deaf children in many places around the world are reported to create gesture systems for communicative purposes, which were found to be structured in language-like ways (Goldin-Meadow, 2003, 2012).

The other type of signing not included in the typology is a sign system developed for educational purposes that rather represents the spoken language on the hands. Such *hybrids* (Hoiting & Slobin, 2002) have been created in many countries: *Manually-Coded English* (MCE) in the United States, *Lautsprachbegleitende Gebärden* (LBG, speech supported signs) in Germany, or *Nederlands ondersteund met Gebaren* (NmG, sign-suppported Dutch) in the Netherlands. Signed languages are recognized by the scientific community as fully-fledged languages on a par with the spoken ones on every level of linguistic organization (Klima & Bellugi, 1979). There is, however, a broad consensus in the literature to regard the hybrid-sign systems not as natural languages, but "contrived and artificial systems" (Schick & Moeller, 1992; see also Hoiting & Slobin, 2002; Zeshan, 2004b). Reasons for this can be summarized as follows: such systems i) are "manual representations" of the spoken language of the majority non-deaf community, ii) "are not used by any community for communicative purposes outside an education environment", and, what seems to be more important, iii) they "did not evolve in a natural manner via use, instead they were created by rule" to foster the acquisition of the spoken language (Schick & Moeller, 1992). Based on these

arguments, such languages will not be considered in the remainder of this chapter. Instead, the attention is confined to other sign language types.

The chapter sets out to define four sign language types. In 2.1. large Deaf community sign languages are presented. In 2.2 emerging sign languages are introduced. In 2.3 village sign languages are described, which are in many respects different from the first two types. The last section of this chapter, 2.4, deals with the type known as alternate sign languages. Within the alternate sign languages section, particular attention will be paid to the use of signing in Aboriginal Australia. This information is essential for the analysis of Yolngu Sign Language in the subsequent chapters. In 2.4.5 an overview of the earlier accounts on Australian Aboriginal sign languages will be given, beginning with the earliest historical ethnographic reports about Aboriginal signing and leading to the most recent linguistic studies of the sign languages used in Aboriginal Australia. The discussion section of this chapter (2.5) suggests extending the recently coined term *shared sign languages* (Kisch, 2008; Nyst, 2012) to include some alternate sign languages such as YSL, which also function as the primary means of communication for deaf individuals.

2.1. Deaf community sign languages

I use the term *Deaf community sign languages* following Padden (2011) and others to refer to sign languages such as American, Australian, or Russian sign languages. In the literature a variety of other terms are used to refer to the same type of sign languages, such as *national* sign language (Woodward, 2000, 2003; Nonaka, 2004), *urban* sign languages (Jepson, 1991), *established* sign languages (Meir, Sandler, Padden, & Aronoff, 2010), *standard* sign language (Slobin, in press) or *macro-community sign languages* (Nyst, 2012). Highlighting one of the most profound features of this sign language type, a sign community, a.k.a. a Deaf community, the term *Deaf community sign languages* (henceforth: DCSLs) is considered here most appropriate.

DCSLs tend to occur in large, urban areas. Deaf community is believed to be formed by deaf people of different backgrounds who are brought together from different areas, regions or even countries in locations such as a school or a deaf association (Meir, Sandler, Padden, & Aronoff, 2010). A crucial point relevant for later disscusion is that the most deaf people are not related to one another and frequently communicate in sign language in decontextualized settings. Only a small proportion of hearing people learn to use the Deaf

community sign language. Those that use it are usually CODAs (Children Of Deaf Adults), interpreters, teachers or researchers. A very important characteristic of a Deaf community sign language is the presence of the formal separate institutions of or for deaf people, including special schools, deaf associations and other deaf organizations (such as Deaf theater and dance groups, Deaf clubs etc.). DCSLs are thus used for educating and interpreting purposes and their users are subject to prescriptive pressure through sign language dictionaries, interpreter training, television programs and other formal usages.

The structure of DCSLs has been investigted to various extents. Consider, for instance, three sign languages, American Sign Language (ASL), Australian Sign Language (Auslan) and Russian Sign Language (RSL) - to name just a few examples. ASL is widely used in the United States, parts of Canada and Mexico. Additionally, it is widespread in some African countries such as Ghana or Nigeria (Nyst, 2010). ASL is claimed to have "no competing sign languages of similar size" (Padden, 2011, p. 25). The latest estimates of primary users account for 250,000[7] signers (ibid., 2011). Auslan is a sign language of the Australian Deaf community, which has developed from the varieties of British Sign Language introduced into Australia by deaf immigrants. While ASL and Auslan have been the subject of extensive linguistic research (Lucas, 1992; Sandler & Lillo-Martin, 2006, Johnston, 1989; Johnston & Schembri, 2007), RSL has received a very scant attention from linguists, apart from the publication by Grenoble (1992). Linguistic, anthropological and sociolinguistic studies exploring phonological, morphosyntactic and lexical variations found in ASL started in the 1980s. Varieties of ASL are thus well investigated (see McCaskill, Lucas, Bayley, & Hill (2011) for a variety used by African Americans). As for RSL, some linguistic research has only recently been conducted by a number of students of Moscow State University (Prozorova, 2006; Viktorova 2007; Prozorova & Kibrik, 2006; Kibrik & Prozorova, 2007; Kimmelman, 2009ab). The first comparative study of sign language dialects used in different parts of Russia has only been undertaken most recently (Davidenko, Komarova, & Zaitseva, 2012).

2.2. Emerging sign languages

Emerging (Deaf community) sign languages differ from the Deaf community sign languages by definition through one characteristic: their young age (Meir, Sandler, Padden, & Aronoff, 2010). With other words, emerging sign

languages are Deaf community sign languages (see section 2.1), which do not have a very long history[8]. Comparable to spoken pidgins and creoles, the emerging sign languages have arisen out of contact between two or more other existing sign languages or homesign systems (Padden, 2011; Adone, 2012). These languages are particularly important for the linguistic community as their very early stages can be traced and documented, thus allowing the linguists to study the course of their development, which is not possible in the same way for the DCSLs such as ASL (Meir, Sandler, Padden, & Aronoff, 2010).

Three sign languages have been identified as emerging sign languages in the literature so far. These are Nicaraguan Sign Language (NSL), the Israeli Sign Language (ISL) and the Mauritian Sign Language (MSL). In the following, I briefly report on these three sign languages highlighting their recent genesis.

Before the first deaf school opened in Nicaragua in the late 1970s, most deaf people communicated with their hearing family members using so-called homesign systems (Goldin-Meadow, 2003) and had no contact with other deaf individuals (Senghas, 1995; Senghas & Coppola, 2011). Through the extensive interaction among peers in the new school, a new form of sign language, NSL, appeared from the homesigns system within two decades.

Israeli Sign Language evolved in a similar pidgin-like situation, although somewhat earlier than NSL. The deaf community in Israel developed in the 1930s as the immigrants from European countries such as Germany, Austria, France, Hungary, Poland and Russia and later from North Africa and Middle East came to Israel (Meir, Sandler, Padden, & Aronoff, 2010). A new sign language and a Deaf community developed in Israel as the immigrants, who brought their sign languages with them, started to meet and communicate on a regular basis[9]. The first deaf school was established in 1932 in Jerusalem (Meir & Sandler, 2008, p. 185). Given its recent origin, the signing of the first generations, though changed with time, is still available to linguists analyzing this language today. Hence, the studies report on the gradual development of some linguistic structures such as pointing signs in NSL or spatially modified verb forms in ISL produced across many generations of signers (Padden, Meir, Aronoff, & Sandler, 2010; Senghas & Coppola, 2011). Particularly with regard to the use of space, ISL is reported to have developed over time a full-blown agreement system of the sort that is used in DCSLs (Padden, Meir, Aronoff, & Sandler, 2010) (see also section 12.2.1 for a discussion).

For NSL a more consistent use of space for grammatical purposes has been already observed in the "second cohort" signers (Senghas, 2003).

Another example of an emerging sign language has been reported by Adone (2007). After the school for the deaf was established in 1969 in one of the major cities on the island of Mauritius, Beau Bassin, a new sign language emerged, Mauritian Sign Language. From the research done so far, it seems that MSL shares many structural similarities with the other emerging sign languages such as the gradual development of a consistent word order (SOV) and a high degree of variability in spatial modifications on verbs across generations of signers (Gébert & Adone, 2006; Adone & Bauer, 2009).

2.3. Village sign languages

While emerging sign languages diverge from the DCSLs only by one feature, their age, the so-called *village sign languages* (Zeshan, 2007) show considerable differences to the DCSLs. These distinctions can be summarized by at least four partly intimately linked parameters, including: 1) socioeconomic and demographic settings, 2) social homogeneity, 3) (socio)linguistic context and 4) degree of endangerment. All four parameters are outlined in the following[10].

2.3.1. *Socioeconomic and demographic settings*

Village sign languages develop in small-scale geographically isolated rural communities, which are not necessarily meant to be strictly limited to a single village[11] (Zeshan, 2007). Such societies with predominantly "pre-industrial local economies" are known to have unusually "high degrees of real/biological or fictive/nonbiological kinship" (Nonaka, 2009). Moreover, the communities display "low intra-community educational and occupational"[12] separation between deaf and hearing people (Nonaka, 2009). Another essential ingredient for the so-called "deaf villages" (Zeshan, 2007) is an extraordinary high prevalence of (often hereditary) deafness (Sandler, 2005) (cf. Table 1). While the prevalence of deafness for developed countries is usually estimated between 0.1% and 0.2% (Woodward, 2003), the figures from the deaf villages show a much greater rate of incidence of deafness as shown in Table 1, ranging from 0.58% in Ban Khor village to 3.71% in the Bedouin community in Israel.

Table 1. The prevalence of deafness in selected deaf villages

Sign language	Deaf people	Village population	Percentage of deaf people	Source
Kata Kolok	47	2,186	2.15%	Marsaja (2008)
Ban Khor	16	2,741	0.58%	Nonaka (2009)
Adamorobe	35	1,345	2.6%	Nyst (2007)
Al-Sayyid Bedouin	130	3,500	3.71%	Meir, Aronoff, Sandler, & Padden, (2010)
Yucatec Maya	13	400	3.25%	Johnson (1991)
Providence Island	20	3,000	0.66%	Washabaugh, Woodward, & DeSantis (1978)

2.3.2. *Social homogeneity*

The small size of the community and the high degree of kinship relations among its members seem to facilitate the growth of the social homogeneity, which is witnessed in the dense social networks and the large amount of communally shared information[13] between the community members. Meir, Sandler, Padden, & Aronoff (2010) consider these feature as crucially important when categorizing village sign languages. Thus, unlike the signers in Deaf community sign languages, people in a deaf village share a common social environment, a common culture and a common village identity. In such small socially homogeneous communities, there is a great amount of sharing of communal experiential knowledge (Kisch, 2008). Meir, Sandler, Padden, & Aronoff (2010, p. 268), while discussing community members, allude to this social factor which they think "make[s] it easier for them to communicate than it is for people with diverse backgrounds" as it is the case in Deaf community sign language settings. They continue by saying that "this degree of familiarity may allow them [community members, AB] to be less explicit verbally then people who do not have as much in common, yet at

the same time to communicate effectively across a range of topics, provided the context is shared". The recent linguistic investigation of village sign languages provides some evidence for this. Deictic systems in such homogeneous communities are, for example, very well developed (see Washabaugh, Woodward, & DeSantis, 1978 for Providence Island Sign Language; De Vos, 2007; 2012 for Kata Kolok; Schuit, 2013 for Inuit Sign Language), because deixis depends on shared background information. Village sign language signers make use of indexic signs for a wider variety of entities than do signers of DCSLs (Washabaugh, Woodward, & DeSantis, 1978). Reportedly no lexical signs exist for entities such as ocean, sun, mountain, river or town names because their locations are always known among the community members and can be easily pointed to. DCSLs with less shared information and less social networking would need to build more information into the message and be more explicit.

2.3.3.   (Socio-)Linguistic context

The factor of social homogeneity is closely interrelated with the absence of distinct Deaf communities in the deaf villages (Washabaugh, 1986; Groce, 1985). Deaf people are usually reported to be part of the whole village community rather than to form an alternative deaf subcommunity within the village[14] (Lanesman & Meir, 2010). In such village sign language settings cross-modal multilingualism is usually the norm. The hearing members of the community are usually fluent in two or more spoken languages and the local sign language as well. The use of sign language is never restricted to deaf members in such communities. Moreover, the hearing signers play an extremely important role in the acquisition and transmission of the village sign language as many deaf members acquire the sign language from fluent hearing signers. However, some variations in hearing people's signing proficiency have also been reported (Nyst, 2007; Marsaja, 2008). Nonaka (2007) calls such communities with cross-modal multilingualism *speech/ sign* communities. Hearing people have been repeatedly argued to play a vital role in spread and maintenance of these local village sign languages (Washabaugh, 1979; Nonaka 2007; Zeshan, 2011a; Lanesman & Meir, 2012). However, a very important note can be made here that hearing people in deaf villages "almost exclusively sign only when deaf people are present"[15] (Nonaka, 2007, p. 13). This feature might be seen as one of the crucial differences to alternate sign languages, which are predominantly used among hearing members (see 2.4 below).

2.3.4. Degree of endangerment

As Nonaka (2009, p. 210) points out in her article, "village sign languages arise suddenly, spread rapidly, and disappear quickly". As example, consider two village sign languages found in North America: Martha's Vineyard Sign Language (MVSL) (Groce, 1985) and Maritime Sign Language from Nova Scotia (Carbin & Smith, 1996, cited in Padden, 2011). Both sign languages existed in the twentieth century, but are now considered extinct, sadly before they could be linguistically documented and described. As Zeshan (2011a) explains, all village sign languages are endangered for two reasons. First, it is immediately threatened through the contact with a larger Deaf community sign language. Exposure to a Deaf community sign language can lead to a loss of prestige for and subsequent death of the village sign language. A similar development occurred with Konri Sain in Jamaica, when Signed English and American Sign Language were introduced to the area by American missionaries (Cumberbatch, 2012). The second reason for the endangerment of a village sign language is the necessary presence of deaf people in the community. The village sign language is, thus, dependent on the existence of deaf people and might disappear when deaf individuals no longer live there (Zeshan, 2011a).

Village sign languages are not only endangered, they are also un(der)documented from the linguistic and anthropological point of view (Nonaka, 2009). Several village sign languages have been identified around the world but more research is needed to "broaden our understanding of the possible range of structural diversity in sign languages" (Zeshan, 2011a, p. 222). Village sign languages diverge linguistically, culturally and geographically (Nonaka, 2009). Currently, as more comparative work appears on these sign languages and the communities in which they have emerged, various terms are introduced to describe them. These sign languages are referred to as "indigenous" (Woodward, 2000; Nonaka, 2009; Adone, Bauer, Cumberbatch, & Maypilama, 2012), "rural" (Jepson, 1991; De Vos & Zeshan, 2012) or "shared sign languages" (Nyst, 2012). I adopt here the term used by Nyst (2012) to highlight the shared use of sign language by hearing and deaf signers (see 2.5 for discussion of this term). The list below sketches some of the shared sign languages to be mentioned in this study and the communities in which they evolved.

- Adamorobe Sign Language (AdaSL), village of Adamorobe in Ghana (Nyst, 2007),
- Algerian Jewish Sign Language (AJSL) emerged in isolated Jewish communities in the sub-Saharan M'zab region of Algeria. Today AJSL is used across areas of Israel (Lanesman & Meir, 2010, 2012),

– Alipur Sign Language, village of Alipur in the southern Indian state of Karnataka (Panda, 2010, 2012),
– Al-Sayyid Bedouin Sign Language (ABSL), the Negev desert of southern Israel (Meir, Padden, Aronoff, & Sandler, 2007; Kisch, 2008),
– Ban Khor Sign Language, Ban Khor village in northeastern Thailand (Nonaka, 2004, 2007),
– Bura Sign Language, Kukurpu village in northeast Nigeria (Blench, 2012),
– Dogon Sign Languages, the villages in the Dogon area in Mali (Nyst, Sylla, & Magassouba, 2012),
– Inuit Sign Language (IUR), Inuit communities from Greenland to Alaska (Schuit, 2009a; Schuit, Baker, & Pfau, 2011),
– Konchri Sain (JKS), Saint Elisabeth's, Top Hill in Jamaica (Dolman, 1986; Cumberbatch, 2006, 2012),
– Mardin Sign Language, the town of Mardin in South-eastern Turkey, and also in Istanbul and Izmir (Dikyuva, 2008, 2012),
– Kajana Sign Language, Kajana village in Surinam (van den Bogaerde, 2006),
– Kata Kolok, Bengkala and Bila villages of North Bali (Marsaja, 2008; De Vos, 2012),
– Providence Island Sign Language (PROVISL), Providence island, Columbia (Washabaugh, 1979, 1980, 1986),
– Urubú Kaapor Sign Language, Urubú village in northeast Brazil (Kakumasu, 1968; Ferreiro-Brito, 1983, 1984),
– Yucatec Mayan Sign Languages (YMSL), Mayan villages in Mexico on the Yucatan peninsula (Johnson, 1991; Fox Tree, 2009; Le Guen, 2011ab, 2012; Escobedo, personal communication).

2.4. Alternate sign languages

The group of sign languages to be presented here is by far not as homogeneous as the ones presented above. The sign languages put together under the label *alternate sign languages* (sometimes referred to as 'secondary' or 'auxiliary') differ greatly from each other in their origin, their usage, their social and sociolinguistic settings, and lastly in their linguistic characteristics (cf. Pfau, 2012). Being considered "half-way" sign languages (Nyst, Sylla, & Magassouba, 2012), alternate sign languages have been largely overlooked by the sign language scholars (see for example Figure 1 above) and have found little attention in the sign language literature

(Green, Woods, & Foley, 2011). These languages, however, require a particular attention, since they are not only severely underdocumented, but also seriously endangered (Davis, 2010; Meir, Lanesman, Adone, & Cumberbatch, 2012).

Before I consider different alternate sign languages, I briefly outline the term *alternate sign language* and how it originated. In the concluding discussion of this chapter, I discuss the recently proposed term "shared sign languages", which, as I argue, also includes Yolngu Sign Language and some other alternate sign languages as well due to their social and sociolinguistics features (see 2.5).

Sign languages are referred to as *alternate* in the literature, if they "have been developed as alternatives to speech by people who have full and normal access to it" (Kendon, 1990, p. 315). Alternate sign languages are usually believed to be "strongly influenced by spoken language" and therefore, are explicitly "distinguished from those forms of signing used by the deaf, and by hearing people in interaction with the deaf" (Kendon, 1988, p. 5). Various sign communication systems have been, therefore, considered as alternate sign languages, including sign languages used by Central Desert Australian Aboriginals, sign languages used by the Plains Indians of North America, sign systems used by sawmill operators in British Colombia, various monastic sign languages, hunting sign languages or military signs (Kendon, 1988; 1990; West, 1960 cited in Davis, 2010; Meissner & Philpott, 1975a; Bakker, 2012b; Pfau, 2012; Mohr & Fehn, 2013). In the following, I will provide some information for the selected examples of alternate sign languages, their users and their structure paying particular attention to the Aboriginal sign languages of Australia[16]. The alternate sign languages will be shown to be extremely different in the circumstances of use and their grammatical complexity (cf. Pfau, 2012).

2.4.1. Sawmill Sign Language

Sawmill Sign Language developed spontaneously between hearing sawmill workers in British Columbia (Canada) in a particularly noisy working environment (Meissner & Philpott, 1975ab). The sawmill workers were signing with each other while the mill was running and verbal communication was simply impossible due to the noise it created. Against all expectations, the scholars were surprised to find that not all communication was restricted to the transmission of technical information. In some cases, some non-technical communication was observed as illustrated by the example in (1).

[Sawmill SL]

(1) HOW   LONG/BIG   INDEX   WOMAN/FEMALE   MARRY
   'How long have you and your wife been married?'

(Meissner & Philpott, 1975b, p. 347)

An interesting observation is the occurrence of the so-called "audiomimic" signs, which rely on phonological resemblance to the corresponding English words (Meissner & Philpott, 1975a). To denote 'week', for instance, the sawmill signers grasped the biceps of the other arm as for 'weak' and to denote 'year', they grasped the ear lobe. Overall, a dictionary of sawmill sign language contains only 133 different signs (Meissner & Philpott, 1975b). There are a number of compounds such as WOMAN+BROTHER 'sister' or MONEY+HOUSE 'bank' (Meissner & Philpott, 1975a). The sign order of the Sawmill sign language strictly follows the word order of English.

2.4.2. Monastic sign languages

Monastic sign languages developed as alternatives to speech in monasteries of different Benedictine orders (Cluniacs, Cistercians or Trappists) to maintain the prescription of silence according to the rule of St. Benedict (Umiker-Sebeok & Sebeok, 1987). Thus, the presence of these sign languages has nothing to do with the hearing impairments or the ability to understand speech, but rather with the law of silence imposed on the monks in particular monastic establishments. The use of signs in monasteries has a long history. Rijnberk (1954, cited in Kendon, 1990) suggests that signs were used before the tenth century, long before the first official manuscript with sign drawings appeared in 1050. The lexicon of the Cistercian Sign Language comprises 518 basic signs (Barakat, 1975). Most dictionary items are common nouns for objects, with which monks are likely to come into contact during everyday life. Many compounds are reported such as WHITE+RAIN 'snow', HIDE+HORSE 'storeroom' or GOD+UP+DAY 'Easter' (Kendon, 1990, p. 321). Unlike Sawmill Sign Language, monastic sign languages seem to make use of the handshapes from manual alphabet, a set of manual symbols corresponding to the letters of the alphabet. However, the manual alphabet is used differently from DCSLs. Consider, the two examples below.

[Cistercian SL]

(2)   DRINK+T+COURTYARD
   'England'

(3)   SECULAR+COURTYARD+SHOOT+PRESIDENT+K
    'Dallas, TX'

<div align="right">(Barakat, 1975, p. 105)</div>

In (2) T stands for 'tea' and in (3) K stands for 'Kennedy'. With regard to
sign order, similar to the Sawmill Sign Language, the signing of the monks
appears to rely upon the word order that matches their native spoken
languages, such as English, Dutch, French, German or Latin. The strong
influence of the corresponding spoken languages is also seen in the presence
of the "audiomimic signs" such as SHINE+KNEE 'shiney', which are compa-
rable to the ones found in sawmill signing.

2.4.3.   Plains Indian Sign Language

The sign language developed by the Plains Indians of North America as a
means of communication between groups that did not share the same spoken
language has also been considered a type of alternate sign language. The
use of sign was observed by different American Indian tribes through the
North American continent stretching from Texas in the south to Canada in
the north. Plains Indian Sign Language or simply "Hand Talk" (henceforth:
PISL) was predominantly used in previous times as a *signed lingua franca*
and is still used today in "storytelling, rituals, legends, prayers and conver-
sational narratives" (Davis, 2010, p. 15). Most important for the further
discussion is that PISL was and is still used today by American Indians who
are deaf. Moreover, McKay-Cody (1997, cited in Davis, 2010, p. xviii, 13)
suggests, "the alternate sign languages used by hearing Indians became
linguistically enriched when learned as a primary language by members of
Indian communities who are deaf". She assumes the deaf American Indians
to be "the most proficient signers", who "probably served as linguistic
models" for the hearing signers of PISL (ibid.). The structure of PISL seems
to be independent of the ambient spoken languages. Unlike North Central
Desert Area Sign Languages of Australia (henceforth: NCDSLs), PISL verbs
are reported to be spatially modified to convey information about subject
and object (Davis, 2010). This finding led Kendon to conclude that PISL is
very similar to DCSLs and "clearly different from the Australian Aboriginal
NCDSLs" (1988, p. 423). However, some dissimilarities to Deaf community
sign languages have also been observed. For example, PISL does not seem
to make an extensive use of nonmanual marking for various grammatical
purposes. Rather a high degree of sign and speech co-occurrences has been

found (Bakker, 2012ab). As far as the origin of PISL is concerned, the fact that it was initially developed by hearing people remains a matter of speculation. As Davis explains:

> PISL has been transmitted from one generation to the next and acquired as the primary and secondary sign language by deaf and hearing members of these communities. PISL most likely developed from the emergent signed language of trial members who were *deaf* or with *deaf* family members; and, over time, members of the larger hearing community acquired it as an alternative to spoken language. As PISL was transmitted from one generation to the next, and acquired by both deaf and hearing Indian participants, it was linguistically expanded with greater lexical and grammatical complexity.
>
> (Davis, 2010, p. 182, emphasis added)

2.4.4.   Keresan Pueblo Indian Sign Language

Another alternate sign language used by hearing and deaf American Indians is the Keresan Pueblo Indian Sign Language (henceforth: KPISL) (Kelley & McGregor, 2003). The small township in New Mexico, where this sign language is used, displays a high degree of hearing loss (2,31%[17]) comparable to the numbers presented for the village sign languages in Table 1. Not much is known about the linguistic structure of this sign language. Kelley & McGregor (2003, p. 141) report that KPISL functions "in two significant ways: (a) as an alternative to spoken languages for hearing tribal members and (b) as a primary or first language for deaf tribal members". Such a high number of deaf members in this Keresan pueblo has been attributed to the middle ear infection (otitis media), which might lead to the hearing impairment caused by repeated severe episodes of infections (see also 3.5 for the discussion of middle ear infections among Indigenous Australians).

2.4.5.   Australian Aboriginal sign languages

The use of sign languages has long been known to be widespread among Australian Aborigines. These languages are highly endangered, severely understudied and have been completely overlooked by contemporary sign language research. A notable exception is the seminal research by Kendon (1984, 1985, 1987, 1988), who sheds more light on this issue than anybody else hitherto by giving an exhaustive account of the complex sign languages in the North Central Desert area.

   The documentation of Australian Indigenous traditional cultural knowl-
edge has arisen historically through missionaries and anthropologists very
shortly after the Europeans arrived in Australia. However, the usage of a sign
language among the Aboriginal groups has encountered little interest or may
have simply stayed undiscovered for a long period of time. The first obser-
vations of Australian Aboriginal sign language provide no descriptions of
the language, but simply recognize its existence. One of the earliest reports
of an Australian Aboriginal sign language is found in the literature in 1874
by Gason, who published his observations of the Dieri Aboriginal group in
the south of Australia (Kendon, 1988, p. 17). A more detailed account of
Aboriginal sign language with the description of roughly 200 signs is given by
Roth in his *Ethnological Studies in North-West-Central Queensland* in 1897
(Kendon, 1988, p. 21). The extent to which sign language is used by different
Aboriginal groups across Australia has first been described by Howitt (1890),
who concludes that "the use of sign language is more common in Central and
North-eastern Australia than in the South-eastern quarter of the Continent"
(p. 724). The distribution of Aboriginal sign languages known prior to the
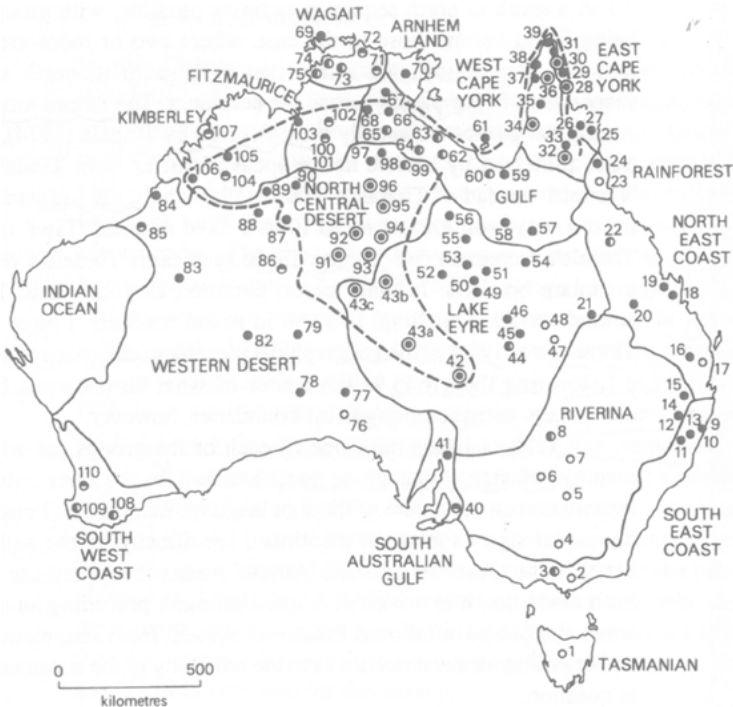research conducted by Kendon is shown in Figure 2.

Figure 2. Distribution of sign languages in Australia[18]

The circles in the map (see Figure 2) are to be interpreted in the following way. An empty circle means that signing is absent in this area; the half filled circle – signing may be present; upper half filled – signing present but limited; full circle – signing is present (as in the case of Arnhem Land, where data collection for the present study has been made); full circle with outer ring – sign language is highly developed. The map, thus, suggests that the most complex signing systems are to be found in the North Central Desert area and on Cape York. Previous research and my analysis of Yolngu Sign Language in this study show that YSL is very different from the sign languages used in the North Central Desert (see also Cooke & Adone, 1994). Moreover, my analysis of the collected YSL data tentatively suggests that the signing found in NE Arnhem region is extensive and highly developed, similarly to the signing found in North Central Desert area (Kendon, personal communication, 2012).

Some important contributions to the description of Aboriginal sign language in Australia are as follows. Roth (1907) presents his observations on the sign language in the Cape York Peninsula area; Meggitt (1954) publishes the first paper on Warlpiri Sign Language (Kendon, 1988). The Warlpiri Sign Language pictorial dictionary presents another valuable contribution to the discussion of the Aboriginal sign languages (Wright, 1979). It contains, however, neither descriptions nor linguistic information about the signs depicted.

Kendon's work (1984, 1985, 1987; 1988, 1990) gives the most extensive and comprehensive analysis on Australian Aboriginal sign languages used in North Central Desert communities. Figure 3 shows the places, in which sign language data was gathered by Kendon (area enclosed by a heavy broken line).

A further account of the Indigenous sign language in Australia is done in a paper by O'Reilly (2006)[20], which primarily discusses some issues surrounding interpreting for Indigenous deaf people from Aboriginal communities in far north Queensland. The author acknowledges the existence of a variety of Indigenous sign languages among the communities of far north Queensland and the Torres Strait Islands and notes its use, inter alia, by hearing and deaf fishermen for communication between boats. O'Reilly's report is extremely important, since it reveals striking influence of Auslan or signed English on the Indigenous sign language in far north Queensland. It can, for instance, be seen in the example of a two-part sign meaning 'aboriginal'(see Figure 104, p. 285). It consists of the sign FIRST and an initialized handshape indicating the letter A. Initialized handshapes, i.e. handshapes taken from the hand alphabet of the surrounding spoken language are very atypical of

Figure 3. The North Central Desert communities[19]

village and Indigenous sign languages, mainly due to the absence of writing and education in such rural signing communities. Thus, the presence of the contact-induced structures such as initialization can be viewed as support for the increasing influence of Auslan or signed English through school or Deaf community contact in a nearby Australian cities and at the same time, endangerment of the Indigenous sign languages.

The most recent studies (Green, Woods, & Foley, 2011) focus on the use of sign languages *iltyem-iltyem* (lit. 'signalling with hands, using hand-signs'[21]) used by Aboriginal people in Arandic speaking communities of Central Australia. Using the newest technologies, Green and her colleagues study the "culturally valued and highly endangered" sign language previously documented by Kendon in Central Australia (1988) (Green, Woods, & Foley, 2011, p. 66). The researchers aim not only at documenting the sign language but also, more importantly, at providing new resource such as a web-based video dictionary for use in school for the maintenance of Indigenous sign languages.

In his study on Australian Aboriginal sign languages of Central Australia, Kendon (1988) proposes the term *alternate* sign language for the languages he scrutinizes to contrast them to primary sign languages such as ASL, due to a "radical difference in their origins and use" (1988, p. 7). Kendon describes these sign languages in the Central Desert as "systems which *represent* their associated spoken languages" (Kendon, 1988, p. 402, emphasis in original), whereas the contrary has been claimed for the other sign languages (Stokoe, 2005 [1960]). North Central Desert Area sign languages (NCDSLs) came into being due to the mourning rituals including the maintenance of prolonged speech taboos by the deceased's spouse – usually widows. Thus, the language is developed by hearing Aborigines as an alternative to speech in circumstances, where silence must be observed, a situation reminiscent of the origin of monastic sign languages. The use of sign language among Australian Aborigines appears to have extremely high cultural value. Additionally to the circumstances, when speech is forbidden, signs are used by Aborigines when speech in not convenient or as an accompaniment to it (ibid.).

Studying the NCDSLs, Kendon discovers a very striking influence of the surrounding spoken language on the linguistic structure and organization of NCDSLs signs (Kendon, 1988, p. 251). He finds that "signs were employed as if they were the morphemes of the spoken languages, including many bound morphemes, such as semantic case-endings" (Kendon, 1990, p. 121). Despite the strong impact of the surrounding spoken languages, Kendon concludes that these alternate sign languages are highly complex and fulfill virtually all functions of a spoken language. Prolonged speech taboos were certainly, according to Kendon, a contributing factor to the elaboration of these sign languages. However, not all Australian Aboriginal sign languages exist due to speech taboos. YSL, for example, is found to be quite different from NCDSLs in this respect (see 3.5 for a discussion of this issue). Even though there are many similarities between the surrounding spoken languages

and YSL, the data to be presented in this study reveal a number of important differences, so that YSL signs cannot be regarded gestural representations of any surrounding spoken language (see Kendon, 1988 for a different view with regard to NCDSLs). Yolngu communities are, however, multilingual (see 3.4), in the way the North Central Desert communities are not. The fact that YSL is used by speakers of different spoken languages, thus, distinguishes it from NCDSLs (see also Kendon, 2013).

Kendon did not encounter deaf Aborigines in Central Australia using any Aboriginal sign language[22]. Thus, proposing the term *alternate*, he did not take into account the process of nativization and the first language acquisition. To date, no study exists describing the acquisition of any Australian alternate sign language by deaf Aborigines[23] and the possible effects it might have on the language structure. Davis (2010) argues that PISL became grammatically and lexically more complex after being acquired as the primary sign languages by deaf members. The effects of nativization previously described for sign and spoken languages are known to be enormous with regard to the language structure, even in the absence of a conventional language-model (see Senghas, 1995 for the role of nativization in Nicaraguan Sign Language). More recent studies and the present research of YSL have found that the alternate sign languages used by Indigenous Australians can also serve as the primary sign language for some deaf or/and hearing impaired Aboriginal individuals (Kwek, 1991; Cooke & Adone, 1994; O'Reilly, 2006; Green, personal communication).

2.5. Shared sign languages

The examples of alternate sign languages above cited in section 2.4 differ from each other on the basis of three features: 1) their origin, 2) their linguistic structure and 3) their function.

We see from that discussion that not all alternate sign languages were developed by hearing people. Whereas Sawmill Sign Language and monastic sign languages are known to have been developed by hearing signers (Meissner & Philpott, 1975a; Barakat, 1975), PISL and KPISL possibly evolved as the primary sign languages among deaf members and only later became an alternate means of communication for the hearing community members (Davis, 2010; Kelley & McGregor, 2003).

In his recent study, Pfau (2012) compares four alternate sign languages (see Table 2) and shows considerable variation with regard to the linguistic structure of these languages. His evaluation of selected linguistic features of these languages, including compounding, (spatial) agreement, realization

of interrogatives and the influence from the surrounding spoken language has made particularly evident, that Sawmill Sign Language and Cistercian Sign Language, languages without deaf L1 signers "show the simplest grammatical structure as well as a strong influence from the surrounding spoken language" (p. 543).

Table 2. Comparison of selected (socio-)linguistic features of alternate sign languages[24]

	Compounding	(Spatial) agreement	Interrogatives	**Influence from spoken language**
Sawmill SL	-mostly SP-loans -no PR/A	NO	-no sim. NMM -only one G-QS, sentence initial	STRONG -mouthing -audiomimic signs -compounds -word order
Cistercian SL	-mostly SP-loans -no PR/A	NO	-no sim. NMM -QM in air -only one G-QS, sentence initial	STRONG -audiomimic signs -MA in compounds -MA for copula -word order
North Central Desert area SLs	-mostly SP-loans -no PR/A	YES	-no sim. NMM	STRONG -mouthings -compounds -reduplication -suffix markers -word order
Plain Indian SL	-few loans from SP -no PR/A	YES	-sim. NMM -only one G-QS, sentence initial and/or -final	WEAK -few compounds -word order (?)

It is also significant to note that the alternate sign languages vary with regard to their function. While some alternate sign languages, such as Sawmill Sign Language and monastic sign languages, are used exclusively by hearing individuals (Meissner & Philpott, 1975a; Barakat, 1975). Other alternate

sign languages, such as PISL, KPISL and YSL, may be shared by hearing and deaf signers (Davis, 2010; Kelley & McGregor, 2003; Cooke & Adone, 1994) (for YSL see 3.5 for a detailed discussion). It is the shared use of a sign language between the hearing and deaf signers that allows me to label some alternate sign languages as *shared sign languages* (Nyst, 2012).

The term "shared signing communities" was recently coined by Kisch (2008) describing the Bedouin community of Al-Sayyid. While Kisch proposes this term mainly to refer to village signing communities listed in 2.3, I find this notion particularly useful in a broader context. The term *shared signing communities* elegantly captures what villages with high rates of (often hereditary) deafness and communities with fewer numbers of non-hereditary deafness (see also Nyst, Sylla, & Magassouba, 2012) in which (an alternate) sign language exists have in common: "the pervasive use of signing by both hearing and deaf" (Kisch, 2008, p. 284). Hence, I maintain the term alternate sign languages for the sign languages listed in 2.4, which function as an alternate means of communication among hearing signers even in the absence of deaf people. Additionally, I adopt the term *shared signing communities* to address the communities with varied incidence of hereditary and non-hereditary deafness, in which a local sign language is widespread among hearing and deaf. Whereas Nyst (2012) reserves the term "shared sign languages" for sign languages described in 2.3 as village sign languages, I use this term to refer to all sign languages (e.g. village and alternate) which are shared by hearing and deaf signers[25].

2.6. Summary

Chapter 2 distinguished four major sign language types mainly on the basis of their sociolinguistic characteristics: 1) Deaf community sign languages (DCSLs), such as ASL and Auslan, are found to be in use by larger groups of signers in urban settings. 2) Emerging sign language, NSL, ISL and MSL are by definition young sign languages, which are reported to have evolved in the context of deaf education (Senghas, 1995; Meir & Sandler, 2008). 3) Village sign languages were dealt with in more detail to show that they differ considerably from DCSLs by at least four parameters, including socio-economic and demographic settings, social homogeneity, (socio)linguistic context and degree of endangerment. Finally, 4) a rather non-homogeneous group of alternate of sign languages was presented. Some alternate sign languages were used exclusively by hearing people (e.g. Sawmill Sign Language and monastic sign languages). Other alternate sign languages,

such as PISL, KPISL and Yolngu Sign Language are shared by both deaf and hearing members of the community. Hence, I suggest that the recently coined term *shared sign languages* (Kisch, 2008; Nyst, 2012) can also be extended to include only those alternate sign languages, which also function as the primary means of communication for deaf individuals (cf. Figure 4).
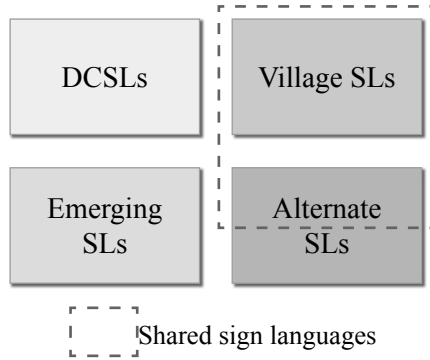

Figure 4. Sign language types

The term *shared sign languages* is found useful for the purposes of this study. By using this term, I attempt to illustrate one common sociolinguistic characteristic between village sign languages and a number of alternate sign langauges: a situation when a sign language is shared among both hearing and deaf community members. Moreover, the languages characterized here as shared sign languages will be shown to share many similar linguistic structures (see section 12 for discussion).

The next chapter provides information on sociolinguistic background of YSL and methodology of this study. The question of how Yolngu Sign Language structures its signing space is presented in chapters 7–11 and how it compares to other sign language types in the spatial organization will be discussed in chapter 12.