Alternative Sign Language: Morphological and Phonological Structure in North Central Desert Australian Sign Languages

Sign languages have traditionally been thought of as languages of the deaf: associated with deaf people across all cultures. However, in some non-industrialized cultures, sign language plays a different role. Long before sign language for the deaf was developed, many cultures used sign to communicate where silence was necessary, particularly the hunting of animals. Remnants of these signs remain with older members of cultures such as the Native Americans of North America. Still today, sign language is used amongst hearing people. One example is the signed language of the so-called 'aboriginal' peoples of Australia. For these peoples, sign language serves as an integral part of traditional rituals; indeed, in some instances, it is the only means of communication allowed. Upon reaching adolescence, boys are required to spend many months undergoing the training and ritual necessary to become a man. Speaking is forbidden during this period and it then that the boy learns to sign. Women whose husbands have recently died are required to remain silent for as much as two full years, communicating only with sign. Sign, then, allows communication for those who are prohibited from speaking.

Given that the sign language developed as result of tradition, rather than as result of the inability to communicate in spoken language, many have termed it an 'alternate' sign language in the sense that the use of sign is not physically necessary, only culturally so. What are the effects of such a development on the structure of alternate sign languages? Since the language is derived from the spoken language and is used to optionally replace the spoken language, it seems likely that it would exhibit strong influences from the spoken language, unlike that of pure sign languages such as ASL. The central question becomes: to what extent do alternate sign languages reflect the spoken language they are derived from? An extensive investigation of this issue is beyond the scope of this paper; here, we will focus on how ASL and two languages of the North
Central Australian Desert, Walpiri sign language (hereafter WSL) and Warumungu sign language (hereafter RSL), reflect the phonological and morphological structure of the spoken languages English, Walpiri, and Warumungu.¹

The connection of ASL to English phonology is limited to orthographic relationships (strictly there is no phonological correspondence at all). Fingerspelling serves as a kind of pidgin between ASL and English in that signs are used to spell English words. The letter signs from fingerspelling are then used in initialization, where the handshape used in the production of a sign is the fingerspelled equivalent of the first letter of the corresponding English word. Although initialization and fingerspelling represent a link to English, they are more for the convenience of English speakers rather than an integral component of ASL. Take a native speaker of ASL who has had no exposure to English. To such a person, the handshapes of fingerspelling are merely part of the ASL phonology: arbitrary with respect to meaning. Initialization seems to have come about for the ease of English speakers who are learning ASL, particularly those who have become deaf after learning English. WSL and RSL employ a similar form of initialization: many words that begin with the same syllable or group of syllables begin with the same sign. For example in WSL: the signs for *kirlilpi* 'bandicoot', *kirlilkirlilpa* 'cockatoo', and *kirlinpirlipirli* 'grass' begin with the same sign. In RSL, *juppa* 'just' and *jupujupu* 'soap' use the same handshape. Most of these groups of similar words involve English borrowings. When a word is incorporated into the language, rather than inventing a new sign, the English word is signed like words with similar phonetic representations. Unlike the orthographic connection of ASL and English, WSL and RSL initialization is a direct attempt to maintain a link between the phonetic representation of the spoken language and the signed representation of the signed language: words brought into the language are signed so that they clearly correspond to the signs of spoken language words that have a similar phonetic representation. This link is further seen in the speech taboo of the deceased: when a person dies, any words that sound like that person's name are stricken from the language for a

¹Note: signed words will be capitalized. Words from Walpiri and Warumungu will be italicized.
specified period of time. Words that have similar signs to the person's signed name are taboo as well. Thus, WSL and RSL initialization is a way of representing the phonology of the spoken language at the phonological level: it follows rules of the language which apply to the spoken language. ASL initialization does not operate on this level, but rather on a more shallow, orthographic level that does not correspond to the spoken, but to the written language. A final point to note is that WSL and RSL still use signs to represent lexical items rather than phonemes. A fully integrated sign and spoken language system would have signs for every phoneme. But, the nature of WSL and RSL as sign languages, despite their close links to their respective spoken language phonologies, occasion lexical representations. In this case, the sign language aspect overcomes the derivation and close association with the spoken language.

Turning next to morphology, we first look at the relation between spoken and signed morphemes. In RSL and WSL, monomorphemic words almost always (96%) have corresponding 'single' signs in that there is only one movement and handshape involved. Similarly, compound spoken words have corresponding compound signs. In general then, the morphological structure of the spoken word is maintained in the signed word. RSL and WSL also both employ morphological processes found in Walpiri and Warumungu. Plurals are formed in both spoken languages through reduplication: \( \text{karnta} \ 'woman' \), \( \text{karntakarnta} \ 'women' \). In both RSL and WSL, the plural of most nouns is achieved through reduplication, following the spoken languages. Sometimes, the plural in the spoken languages is formed using a suffix: \( \text{-patu} \) is added to noun. Whenever this is the case, WSL and RSL add a signed marker to indicate the plural after the initial sign. Thus, as with phonology, WSL and RSL incorporate the morphological processes of the spoken languages into sign. This is further seen in word/reduplicated-word pairs which have different meanings in Walpiri and Warumungu: the words \( \text{kuruwari} \ 'design on the body} \), and \( \text{kuruwarrikuruwarri} \ 'variegated' have different meanings, but are signed the same way. RSL and WSL follow the morphological formation of these spoken words in order to mirror the semantic content of the spoken language. As stated above, words which are compounds in Walpiri and Warumungu are also compound signs. The two signs involved in compounds correspond in
meaning to the two words used in the Walpiri and Warumungu compound. Thus the process of compounding occurs in the same manner in both the spoken and signed languages. When phonological rules reduce and or delete phonemes in compounds, the signed form is unable to represent this, and retains the full signs. Derivational suffixation is another process mirrored in the signed languages. Most spoken words with derivational affixes are signed as compounds: *kanaparnta* 'scorpion' is a combination of *kana* 'digging stick' and *-parnta* a possessive suffix that is bound. WSL and RSL have a range of signs for such bound morpheme affixes in order to follow the spoken language. Finally, we look at verb construction. Two kinds of verbs are found in Walpiri and Warumungu: complex and simple. Simple verbs are composed of a root verb only, and are signed singly as well. Complex verbs have a preverb-root verb construction. Preverbs are a limited but productive category, combining with root verbs to produce new meanings. Preverbs can occur with many different verbs: *tiirl pardi-mi* 'split by hitting with an axe' and *tiirl pakarni* 'open eyes' both use the same preverb *tiirl*. The signed expression uses the same sign for the preverb. Thus, the construction used to generate meaning is the same in the signed and spoken languages. The above suggests that the morphological structure and formation of words in the signed languages closely follows the spoken languages. Words are formed the same way in both languages: in number of morphemes, and in the word formation process that generates the word.

Thus far we have focused on derivational morphology. Does the same close relationship hold with the inflectional morphology of Walpiri and Warumungu? Noun inflectional morphology has several different types of affixes in the spoken language. Grammatical case markers indicate roles for arguments in constructions. These markers have no representation in WSL and RSL. In addition, Walpiri and Warumungu contain 'semantic' case markers which sever several roles: they determine spatial relationships, possessive relationships, causation, and location to name a few, and are similar in function to prepositions in English. These markers have corresponding signs. As stated above, derivational affixes also have a signed representation. Several of the semantic markers have identical morphological representations in Walpiri and Warumungu. In the spoken languages, context is used to distinguish the meaning. But in WSL
and RSL, the semantic markers are signed differently. From the above discussion, it seems that markers are added when a semantic change occurs to the word. Grammatical relationships are not signed. This occurs because grammatical relationships can be inferred more easily from context than semantic ones. For example: the sequence 'ball tennis court boy throws'. It is clear that the boy is throwing the ball and not the tennis court and that neither the ball nor the tennis court are doing the throwing. However, in what direction in relation to the tennis court the ball is being thrown is uncertain (away from, to, on, etc.) (Kendon, 1988). Thus, anything which contains a semantic purpose in a particular construction is signed. The preceding section confirms this as well: word formation processes change the meaning of words and so must be signed in a similar manner. It could be the case that a new sign could be developed for a compound word or a reduplicated word rather than maintaining the signs for the individual morphemes of such words. The fact that this does not occur and the fact that semantic markers are signed leads to the following conclusion: WSL and RSL are semantic representations of the spoken languages Walpiri and Warumungu. When a new piece of semantic information that leads to ambiguity is added as a result of the morphology it is signed. Unambiguous information such as grammatical case is not signed (Kendon 1988).

ASL exhibits none of the strong relationships to spoken language that we see in WSL and RSL. But, the way in which semantic information is conveyed is similar: in ASL we do not see grammatical case being signed, except in the reflexive. The reason for this difference between ASL, and WSL and RSL stems directly from their purpose in the cultures they are a part of. WSL and RSL employ a one-to-one relationship between morpho-semantic units in the spoken language and signs. This is done so that the signed language retains the grammatical structure of the spoken language. Because of this, the signed language is easier to learn and communicate with: in a sense you just replace a spoken morpheme with the correct sign. For these peoples who are native speakers of their spoken languages, the ease of learning and producing sign is important because sign is used infrequently. Imagine the boy in his manhood ritual year, unable to speak. A vastly different spoken-sign language relationship like English and ASL would be difficult to master in a
short period of time. The purpose of the sign languages is to maintain communication with silence, but the means of communication remains as close as possible to speech, thus the term alternate sign language. WSL and RSL allow everyone to learn to communicate with silence in the simplest way based on the language they speak. ASL, on the other hand, serves a different purpose. Its serves as a primary language for its culture and has developed its own grammar and structure because it is not based on a spoken language. A final question is: what is the status of RSL and WSL? Can they be truly classified as a language, or are they a dialect? They have their own lexical representations, but maintain basically the same grammar. In addition, everyone within the culture speaks them, ruling out a dialect in the traditional sense. Perhaps the right classification for them is a separate register: a different form of the language used at a culturally appropriate time. Certainly an investigation of other aspects of RSL and WSL would be needed. But whatever their status, they are an interesting case of speech and sign working together in harmony, rather than discord.

Work Cited
Note: As WSL and RSL are not well-documented (at least by Swarthmore's information services), all of the examples were taken from:


In addition, information such as when certain morphemes were signed or not signed is also taken from this source. Citing within the paper indicates where analysis was taken from the work.