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Trevor Johnston , Adam Schembri
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1 Signed languages and linguistics

In this chapter, we discuss the discovery of signed languages as real languages and describe their place within modern linguistics. We begin by defining language and linguistics. First, we explore some of the properties language shares with other systems of communications, as well as features that may make language unique. Second, we introduce the field of linguistics—the scientific study of language—and its major areas of investigation. We then discuss signed language linguistics and its history, examine common myths and misconceptions about signed languages, and describe the relationship between signed languages and other forms of gestural communication.

1.1 What is language?

One of the aims of the field of linguistics is to understand exactly what language is, so providing a definition is difficult because the study of language is very much work in progress. In addition, many contemporary textbooks in linguistics discuss definitions of language that were proposed before signed languages were recognised as real languages. Thus, in order to provide a working definition of language, we will draw on a useful summary first provided by the researchers Charlotte Baker and Dennis Cokely (1980): a language is a complex system of communication with a vocabulary of conventional symbols and grammatical rules that are shared by members of a community and passed on from one generation to the next, that changes across time, and that is used to exchange an open-ended range of ideas, emotions and intentions.

This working definition draws on a number of key features that were proposed by Charles Hockett (1960) to be central aspects of language structure and function: the use of arbitrary symbols, grammaticality, discreteness, duality of patterning, cultural transmission, inter-changeability, reflexiveness, displacement and creativity. Some of these features are shared by language and other communication systems, while others may be unique to human language. We describe each of these characteristics in the following sections.

1.1.1 Arbitrary symbols

All communication systems (including, for example, traffic lights, monkey calls, the dance of honey bees and human language) rely on the use of symbols to produce meaning. In traffic lights, for example, we have a set of three coloured lights—green, amber and red. Each of these coloured lights

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has a relation to a specific meaning: green, for example, means 'go' while red means 'stop'. Among vervet monkeys, there are three different calls that mean 'snake', 'leopard' and 'eagle' respectively (Seyfarth, Cheney & Marler, 1980). In response to the 'snake' call, other members of a vervet monkey troupe will stand up and scan the ground, while the 'leopard' call will see them run into the trees. The tail-wagging dance of bees is used to communicate information about sources of nectar (Frisch, 1967). The direction of the dance indicates the direction of the flight path to the food, the speed of the dance signals how rich the source of nectar is, and the tempo of the movement provides information about the distance. In each communication system, we see that the symbols involve a relationship between some form (e.g., a coloured light, a specific call or a movement) and a meaning.

The words and signs used in languages such as English and Auslan may also be considered examples of symbols. This link between form and meaning in signed and spoken language may be *arbitrary*. Arbitrary words or signs show no link between their form and meaning. The sound of the word *cat*, for example, does not resemble any sound made by a cat. It only means 'cat' by a completely conventional association of this sequence of sounds with this meaning. There is nothing natural about this link between form and meaning—it results entirely from the long-established use of this word in English-speaking communities. Other language communities have similar meanings associated with different sequences of sounds, so that 'cat' is *neko* in Japanese and *paka* in Swahili.

Similarly, the sign SISTER in Auslan is produced by tapping the X handshape twice on the nose. Neither the shape of the hand used in this sign nor its location or movement have any physical resemblance to the concept of 'sister'. The association between this sign and its meaning is nothing more than customary usage in the Auslan signing community. In fact, this sign also has this meaning in British Sign Language (BSL) and New Zealand Sign Language (NZSL), because these three languages are historically related. In other signed languages, such as American Sign Language (ASL) and Taiwan Sign Language (TSL), the sign is quite different. In fact, in TSL, there are two signs—ELDER-SISTER and YOUNGER-SISTER.

Figure 1.1: *Signs for 'sister' in three signed languages.*

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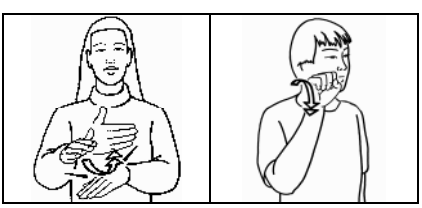
The Swiss linguist Ferdinand de Saussure claimed that arbitrariness was in fact a defining feature of language, differentiating it from other communication systems (Saussure, 1983 [1915]). As we see from the discussion above, however, arbitrary symbols are not unique to human language. There is no apparent link between the colours of traffic lights and their meanings, nor between the particular sound used in the 'leopard call' of vervet monkeys and any sound produced by a leopard. Furthermore, many symbols in human language are not arbitrary at all. Language also includes *iconic* symbols in which some aspect of symbol's form resembles some aspect of its meaning. The word for 'cat' in Thai, for example, is *meo*. Clearly, there is a link between the sound of this word and the sound made by a cat. English includes some words that use *onomatopoeia* (a term used to refer to sound-based iconicity), such as *chiffchaff* (the name of a particular songbird whose song alternates from a higher to a lower note), *cuckoo, tap, crash, click, slurp* and *bang*. English also uses links between form and meaning in other ways as well. In a phenomenon known as *sound symbolism*, related sounds tend to occur in words that are similar in meaning, such as the *gl-* sequence in *glisten*, *glow*, *glitter* and *gleam*. Moreover, the order of sentences in a story usually follows the sequence of events as they actually occurred (Haiman, 1985). Thus, there is more iconicity in spoken languages than previously believed.

Many symbols in signed languages are iconic, such as the signs CAT in Auslan and Japanese Sign Language (Nihon Shuwa or NS). The first appears to suggest an action typically associated with a cat (i.e., stroking its fur), while the second seems to represent the typical actions involved in a cat washing itself.



CAT (AUSLAN) CAT (NS)

Figure 1.2: *Signs for 'cat' in Auslan and NS.*

Although some signs in Auslan are arbitrary, signs that are in some way iconic are more common. In spoken languages, however, the reverse is true—the link between form and meaning in most words is arbitrary. This greater degree of iconicity in visual-gestural languages is not particularly surprising because objects and actions in the external world tend to have more visual than auditory associations. Many objects (such as a table or cup) make no distinctive sounds at all, but have characteristic shapes, or are associated with typical human actions that can be used as the basis of signs. Thus, one form of the Auslan sign TABLE traces the shape of a tabletop and

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legs, and one variant of CUP represents holding a cup and bringing it to one's lips.

Despite these differences, what arbitrary and iconic words and signs have in common is that their association with particular meanings is based on customary usage within a particular community and thus must be learned by children, as we will see in §1.1.4. Thus, what is important about the use of symbols in language is their conventionalisation—the fact that members of a community share an understanding that particular meanings are conveyed by particular forms (Deuchar, 1984). Because most symbols in spoken languages are both arbitrary and conventionalised, it seems some linguists mistakenly assumed that a defining feature of language was arbitrariness. In fact, it is conventionalisation that is the key to understanding the relationship between a symbol's form and its meaning.

1.1.2 Grammaticality

Human languages have *grammaticality*. No human language consists of a vocabulary of conventional symbols alone—they also have rules for the appropriate combination of these symbols. This means they have grammars—rules for the correct grammatical structure of words and sentences. Other communication systems also have rules of combination. In the case of traffic lights, for example, the green light can follow a red light, but an amber light always precedes a red light. The term *grammar*, however, is usually reserved for the rules that exist in human languages.

An example of a grammatical rule in English would be the word order in the phrase *the woman has seen the man*. Here the subject noun phrase *the woman* comes before the verb phrase *has seen*, and the object noun phrase *the man* comes last (the terms *noun phrase* and *verb phrase* are explained in Chapter 7; *subject* and *object* are discussed in both Chapters 7 and 10). This is a grammatically correct sequence of words in English, but it may not be grammatical in other languages. In German, for example, a different order would be used for this example: *Die Frau hat den Mann gesehen*. Literally, this translates as 'The woman has the man seen'. Here we can see that part of the verb phrase (i.e., *gesehen* 'seen') comes at the end of the sentence, and the word for 'the' has two forms (i.e., *die* and *den*). In Auslan, the equivalent may be signed in the following way: PT+lf WOMAN FINISH SEE PT+rt MAN (see *Conventions* in the introductory pages to this volume for an explanation of these and other Auslan examples). Note that the Auslan sentence does not include a sign meaning 'has', unlike both English and German. Instead, a completed action is signalled in Auslan by the use of the sign FINISH. Also note that in this example, pointing signs work in the same way as the words *the* in English, or *die* or *den* in German, but they also may include information about the relative locations of the two individuals being discussed. This potential for spatial information is not present in the spoken language examples. Despite these differences between the three languages, it is clear that they each share the property of grammaticality.

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1.1.3 Discreteness and duality of patterning

Language structure has discreteness: its symbols are made up of a limited set of smaller, separate units. The words of spoken languages are made from a limited set of sounds (e.g., Australian English uses just 44 distinctive sounds), and the signs of Auslan appear to be made of a limited number of handshapes (i.e., approximately 35 handshapes are important in the core vocabulary of the language, as we will see in Chapter 4). Discrete units have clear, definable boundaries, and do not show gradience. In English, for example, the sounds /s/ and /z/ are perceived as distinct—speakers appear to disregard intermediate sounds between the two. Similarly, the handshapes 4 and 5 in Auslan are distinct. Although the position of the thumb may vary in FOUR, once it is fully extended and visible, the sign becomes FIVE. Even though spoken and signed languages are both produced as a continuous stream of sounds and gestures, users are able to segment this connected speech and signing into a finite number of separate (i.e., discrete) units.

Moreover, language appears to have *duality of patterning*—it has two distinct levels of organisation. All languages are able to build meaningful units (e.g., words or signs) out of smaller units that have no meaning in themselves. Thus, words in English enter into two patterns of contrast at once. The word *man* differs from other words in meaning, contrasting with *woman*, *boy*, *girl,* etc. The word also differs from other words formationally, contrasting with *can, ban*, *mat,* etc. The sounds in the word *man* (i.e., the sounds represented by the letters /m/, /a/, and /n/) have no meaning of their own. Only a combination of these sounds in the correct order produces a word with meaning in English—*man*.

Signed languages also exhibit duality of patterning. For example, the sign SISTER contrasts in meaning with other signs such as BROTHER, MOTHER, FATHER, etc. We can see that the sign has a handshape, movement and location that do not in themselves have any meaning, and that changes in one of these features of the sign create a different sign. Changing the location to the cheek produces the sign STRANGE, for example, while moving it to the chin makes a sign meaning WHO in New South Wales and Queensland. In each case, the handshape, movement and location do not have meaning of their own—it is only when the parts are combined into the correct combination that we produce meaningful signs.

Duality of patterning may be a unique feature of language, although it is present to a limited extent in some forms of animal communication (e.g., bird song has individual notes that are combined into particular calls with specific meanings, see Tchernichovski *et al*., 2001). Duality is most well developed in human language, however—it is this feature that makes it possible for the thousands of words in English and signs in Auslan to be built up from a much smaller set of units.

Nonetheless, just as words and signs are not all arbitrary, so not *all* words or signs in a language need to display discreteness and duality of

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patterning—the minimal units of some words or signs may have their own meanings, and some aspects of language may be gradient. As we shall see in Chapters 4, 5 and 10, many signs are composed of minimal units which may indeed carry their own meaning or that may be modified to show gradient meanings.

1.1.4 Cultural transmission

Spoken and signed languages differ from one part of the world to the next, as we shall see in §1.3.1. Children born into each different language community have to learn the vocabulary and grammar of the language (or languages) used by adult members of that community. This learning is referred to as *cultural transmission*. In this regard, language differs from many communication systems used by animals, such as the calls of the vervet monkey or tail-wagging dance of the bee. Although some aspects of their appropriate use may be learned in some animals, many of these non-human communication systems appear to be entirely innate. Zebra finches that are deafened during development or reared in isolation will develop the typical song of their species, although it may not completely match those used by hearing finches raised with other birds (Lombardino & Nottebohm, 2000). Some aspects of human behaviour also appear to develop without learning, such as how to swallow liquids or how to recognise our parent's voices, but understanding and producing the specific vocabulary and grammar of one's first language is not one of these innate abilities. If language were entirely innate, then languages would be the same across the globe and children would not need to learn them. Although children are undoubtedly born with an innate capacity to make language learning very rapid and effortless in the first few years of life (and some linguists believe that some general aspects of language structure may be innate, as we shall see in Chapter 10), it is clear that the vocabulary and grammar of specific languages are transmitted from one generation to the next by learning and are not genetically pre-programmed in the brain.

1.1.5 Inter-changeability and reflexiveness

All users of human language may send information to and receive it from other users. This is known as *inter-changeability*. This makes language different from some other communication systems. Although drivers can understand the message sent to them by traffic lights, it is not possible to communicate with traffic lights by attempting to send information back to them. Similarly, only worker bees perform the tail-wagging dance (i.e., other types of bee, such as the queen bee, cannot communicate in this way), and only male zebra finches can produce their distinctive song. Because speakers and signers can both send and receive information, this makes it possible for humans to monitor their own use of language based on the feedback they receive from their own language production (e.g., users of spoken language

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can hear their own talk, while signers can see and feel their own signing). The ability to monitor one's own use of language also directly leads to another possibly unique feature of human language—the ability to use language to talk about language itself, just as we are doing now. This characteristic is known as the *reflexiveness*.

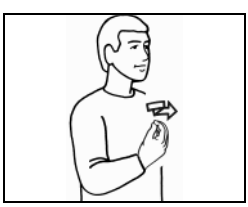
1.1.6 Displacement

Displacement refers to the unique ability of language users to refer to objects and actions that are removed from the immediate time and place in which the language is being used. Thus, speakers and signers can talk about events in the past or in the future, or at distant locations. Systems of communication used by animals are generally limited to conveying information about objects or events in present and immediate situations. Thus, a vervet monkey cannot discuss a leopard it saw last week, for example. It can only refer to leopards that are present at the time the call is used. Furthermore, the property of displacement allows language users to talk about people and places that exist only in the imagination.

1.1.7 Creativity

Creativity, like displacement, appears to be another feature that is unique to human language. All natural languages are able to expand their vocabulary to express new meanings. For example, signs have developed since the 1990s for new technology, such as INTERNET (Figure 1.3), EMAIL, MOBILE-PHONE and DVD. New signs are also appearing in Auslan because of increasing contact with deaf people from other countries. Many Auslan signs for countries are now being replaced by signs used by the deaf community in that country. For example, there are new and old signs for AMERICA, ITALY (Figure 1.3) and CHINA. This property of language means that languages change across time, as new words and signs are created, and older ones abandoned.

INTERNET
(new concept, new sign)



ITALY
(old concept, old sign)

ITALY
(old concept, new sign)

Figure 1.3 *Old and new signs in Auslan.*

Creativity does not appear to be found in other communication systems. Despite changes to their environment, vervet monkeys have not created any

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new calls, and honeybees have not modified their tail-wagging dance to differentiate between different sources of nectar.

1.2 What is linguistics?

Having proposed a definition of language and discussed some of its key characteristics, we will now turn our attention to the study of language known as *linguistics*. More precisely, linguistics may be described as *the scientific study of language*. We refer to linguistics as *scientific* because linguists approach the study of language in a scientific manner. As Geoffrey Finch (2000) explained, this means that (1) linguists adopt an objective view of language and (2) they use scientific methods in their study of language (i.e., they use observation, description and explanation).

What does it mean to say that linguists adopt an 'objective' view of language? Linguists are mostly interested in how people actually use language, and less in how people think they should use language. The approach taken by linguists is thus a *descriptive* approach. Linguists aim to give a complete and accurate account of how a language is used at a particular point in time. Linguists collect and study facts about language through interviews, experiments and tests. They also gather information from written sources such as books and newspapers, and by tape-recording or video-recording people as they use language in real life situations. These observations are the basis for a description of the language, which attempts to explain the objective reasons for the ways language is structured, used and acquired by a community. In our case, our aim in this book is to provide an unbiased and objective introduction to some aspects of the history, structure and use of Auslan. We wish to provide information about the structure of language, for example, that is based on a description of how native signers in the community actually use the language (*native signers* are deaf or hearing people that grew up with the language from birth).

This is in sharp contrast to the *prescriptive* approach. Prescriptivists set out rules for what is believed to be correct ways to use language. Often, they use beliefs about language purity, logic and tradition to create rules of 'correct' language use (Crystal, 1997). One well-known example is the Académie Française, which was established in France in 1635 (Eastman, 1983). It is a group of 40 individuals that acts as an official authority on the French language. They publish a dictionary of the language, and make rulings about norms of French grammar and vocabulary. In particular, they publish lists of French words that are recommended as replacements for words that are 'borrowed' from other languages, particularly English. For example, the Académie has ruled that the English words *Walkman* and *browser* that are commonly used in France ought to be replaced by the French equivalents *baladeur* and *logiciel de navigation*. These recommendations are made because the Académie believes it must try and protect the 'purity' of the French language which they see as threatened by the growing influence of

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English. These rulings have no legal power, however, and are often ignored by the French government, media and education system who continue to use words borrowed from English (McCrum, Cran & MacNeil, 1986). Recently, the British Deaf Association has established a 'British Sign Language Academy' to protect, promote and preserve BSL. It will be interesting to see whether this organisation will experience the same fate as its French cousin.

The English language lacks an organisation like the Académie Française, but English does have a strong tradition of prescriptivism. Beginning in the eighteenth century, prescriptive books about the structure and use of the English language began to be published, many of which became very influential in education (Leith, 1997). Many of these grammar books did not aim to record actual usage in the community, but instead proposed rules of English grammar based on the structure of Latin or on the laws of logic. At the time, Latin was a language still held in high esteem in Europe. For a thousand years prior, it had been the language used for international communication in scientific and political affairs, and its grammar was considered an example of great logic and clarity (although, in fact, it is no more so than any other human language). Thus, these books suggested that certain common usages in English should be abandoned because they did not follow the same grammatical rules found in Latin. A few well-known examples of 'correct' usage proposed by prescriptivists are listed in Table 1.1.

Table 1.1: *Examples of English prescriptive rules (adapted from Crystal, 1997).*

Common usage	**'Correct' usage**
It is me.	It is I.
Who are to you speaking to?	To whom are you speaking?
I want to quickly walk home.	I want to walk home quickly.
I haven't done nothing wrong.	I haven't done anything wrong.

Some of these usages (such as the use of double negatives like *I haven't done nothing wrong*) were supposedly 'incorrect' because they were considered illogical. Double negatives, however, have existed in English for several centuries as an emphatic way of expressing negation, and double negatives are the norm in other languages, such as French. It must be pointed out that all these so-called 'incorrect' ways of speaking and writing reflect extremely common usage across the entire English-speaking world, and that it is not clear why Latin grammar or logic should form the basis for determining standard forms of English.

Prescriptivism also exists in the Auslan signing community. Many Auslan teachers reject the use of particular signs even though they are used in the deaf community. This is especially true of those signs that have come into the language recently from Australasian Signed English (we discuss Australasian Signed English in Chapter 2) or from foreign signed languages, particularly

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ASL. Many signers also reject signs that were originally only used in specific regions of Australia, or that have been created by hearing people, such as sign language interpreters. Some Auslan teachers instead advocate the preservation and teaching of older and traditional vocabulary, even when many younger deaf people do not use or are even unaware of such signs.

In contrast to the prescriptive approach, linguists do not attempt to evaluate variation in language, or to halt language change, but simply to record the facts. David Crystal (1997:2) pointed out, however, that it is not easy for any of us to study language objectively. Good language skills are important and highly valued, and people make judgements about a person's family background, education, intelligence and even attractiveness based on how they speak or sign. As a result, most readers will come to a book on linguistics like this one with strong views about what English and Auslan are, and how these two languages should be used. As Crystal explained, 'language belongs to everyone; so most people feel they have a right to hold an opinion about it. And when opinions differ, emotions can run high.'

1.2.1 Areas of linguistics

The field of linguistics is divided into a number of major areas.

First, some linguists may work in areas that focus on the structure of languages. The study of the nature of speech sounds and how they are produced and perceived is known as *phonetics*. This contrasts with *phonology*, which is the study of how sounds are organised into the words and phrases of different languages. Although phonetics and phonology both originally referred to the study of sounds in spoken language, they are also used by sign language researchers to refer to the physical properties of signs (signed language phonetics) and how signs are created from smaller formational units (signed language phonology). We explore some aspects of the phonetics and phonology of Auslan in Chapter 4.

The study of grammar is divided into two areas: *morphology* (the study of the grammatical structure of words) and *syntax* (the study of the grammatical structure of word sequences, such as phrases and sentences). *Lexicology* is the term used to refer to the study of the vocabulary (or the *lexicon*) of a language. *Discourse analysis* is the study of how sequences of sentences are organised into larger structures, such as conversations or stories. The study of the grammatical structure of Auslan signs and sentences is explored in Chapters 5 and 7, while a description of the Auslan lexicon is provided in Chapter 6. We describe some aspects of Auslan discourse in Chapter 9.

Second, linguists also work in areas that focus on how language is used. *Semantics* is the study of how language structures are used to make meaning, while *pragmatics* is the relationship between language structure, meaning and context. These aspects of Auslan are covered in Chapters 8 and 9. The study of the relationship between language and society, including variation in language structure and how it relates to social factors (such as gender, age or region), is known as *sociolinguistics* (this is discussed briefly in Chapter 2).

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