IV. Semantics and pragmatics

18. Iconicity and metaphor

Abstract

Iconicity, or form-meaning resemblance, is a common motivating principle for linguistic items in sign and spoken languages. The combination of iconicity with metaphor and metonymy allows for iconic representation of abstract concepts. Sign languages have more iconic items than spoken languages because the resources of sign languages lend themselves to presenting visual, spatial, and motor images, whereas the resources of spoken languages only lend themselves to presenting auditory images. While some iconicity is lost as languages change over time, other types of iconic forms remain.

Despite its pervasiveness in sign languages, iconicity seems to play no role in acquisition, recall, or recognition of lexical signs in daily use. It is important, however, for the use of key linguistic systems for description of spatial relationships (i.e., classifier constructions and possibly pronoun systems). Moreover, language users are able to exploit perceived iconicity spontaneously in language play and poetic usage.

1. Introduction

It has long been noticed that in some cases, there is a resemblance between a concept and the word or sign a community uses to describe it; this resemblance is known as *iconicity*. For example, Australian Sign Language (Auslan), Sign Language of the Netherlands (NGT), South African Sign Language (SASL), South Korean Sign Language (SKSL), and other sign languages use a form similar to that shown in Figure 18.1 to represent the concept 'book' (Rosenstock 2004). The two flat hands with the palms facing upwards and touching each other bear a resemblance to a prototypical book.

Iconicity motivates but does not determine the form of iconic signs. For example, Chinese Sign Language (CSL), Danish Sign Language (DSL), and American Sign Language (ASL) all have iconic signs for the concept 'tree', but each one is different (Klima/Bellugi 1979).

Though iconic linguistic items and grammatical structures are common in both spoken and sign languages, their role in linguistic theory and in the language user's mind/brain has long been debated. In section 2 below, we will briefly cover the history of

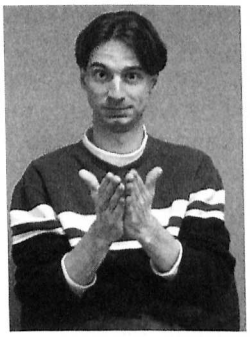

Fig. 18.1: BOOK in several sign languages

linguistic treatments of iconicity. Section 3 gives an overview of lexical, morphological, and syntactic iconicity in sign languages, with a few spoken language examples for comparison; and section 4 treats the relevance of iconicity to daily language use and historical change. As we shall see, iconicity is pervasive in human languages. While it appears to play little or no role in daily use of lexical signs and words, it is crucial to the use of certain spatially based linguistic structures, and may be freely exploited for spontaneous language play.

2. Iconicity in linguistic theory

The simple definition of iconicity is 'signs that look like what they mean'. In this section, we shall see that this definition is not adequate, and modify it to include cultural and conceptual factors. We will also trace the history of linguists' attitudes toward iconicity, noting that an increasing sophistication in linguistic definitions of iconicity has paralleled an increasing acceptance of iconicity in linguistic theory and sign language research. (Note that the role of iconicity in phonological theory is not addressed in this chapter; for discussion see van der Kooij (2002) and chapter 3, Phonology.)

2.1. 'Transparency' is not an adequate measure of iconicity

Given the simple definition of iconicity as 'form-meaning resemblance', we might expect that we could use 'guessability' (also called *transparency*) as a measure of a sign's iconicity – after all, if an iconic sign looks like what it means, a naïve observer ought to be able to figure out the meaning. On the other hand, several researchers found that non-signers had difficulty guessing the meaning of ASL iconic signs from their forms (Hoemann 1975; Klima/Bellugi 1979), even though many were clearly iconic in that, once the meaning was known, a connection could be seen between form and meaning. This result indicated that fluent signers have to know the meaning of the sign beforehand, and do not simply deduce the meaning from its form.

Pizzuto and Volterra (2000) studied the interaction between culture, conventionalization, and iconicity by testing the ability of different types of naïve subjects to guess the meanings of signs from Italian Sign Language (LIS). They found strong culture-based variation: some signs' meanings were easily guessed by non-Italian non-signers; some were more transparent to non-Italian Deaf signers; and others were easier for Italian non-signers to guess. That is, some transparency seemed to be universal, some seemed linked to the experience of Deafness and signing, and some seemed to have a basis in Italian culture.

In interpreting these results, we can see the need for a definition of iconicity that takes culture and conceptualization into account. Iconicity is not an objective relationship between image and referents. Rather, it is a relationship between our mental models of image and referents (Taub 2001). These models are partially motivated by experiences common to all humans, and partially by experiences particular to specific cultures and societies.

2.2. Cultural/conceptual definition of iconicity

First, consider the notion of 'resemblance' between a linguistic item's form and its meaning. Resemblance is a human-defined, interactional property based on our ability to create conceptual mappings (Gentner/Markman 1997). We feel that two things resemble each other when we can establish a set of correspondences (or *mapping*) between our image of one and our image of the other. To be more precise, then, in linguistic iconicity there is a mapping between the phonetic form (sound sequence, handshape or movement, temporal pattern) and some mental image associated with the referent. As noted above, these associations are conceptual in nature and often vary by culture.

To illustrate this point, consider Figure 18.2, which presents schematic images of human legs and the forefinger and middle finger extended from a fist. We feel that the two images resemble each other because we set up a mapping between the parts of each image. Once we have established this mapping, we can 'blend' the two images (Fauconnier 1997; cf. Liddell 2003) to create a composite structure: an iconic symbol whose form resembles an aspect of its meaning. A number of sign languages have

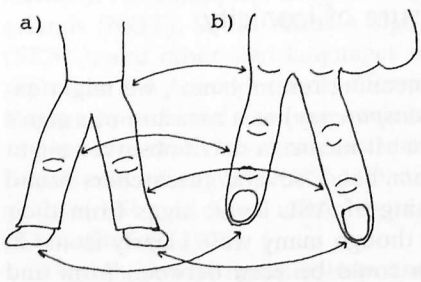

Fig. 18.2: Structure-preserving correspondences between a) human legs and b) extended index and middle fingers.

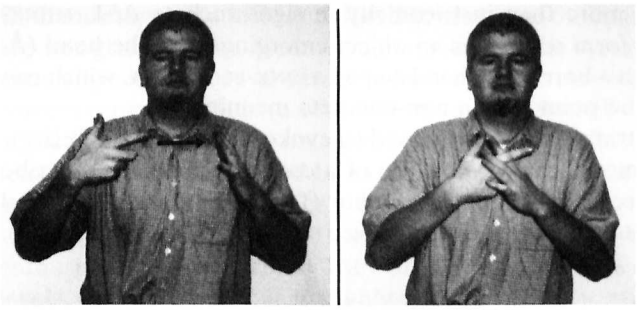

Fig. 18.3: The ASL sign DRILL

used this particular V-handshape (✌) to mean 'two-legged entity'. This form/meaning package is thus an iconic item in those sign languages.

Iconic items, though motivated by resemblance to a referent image, are not universal. In our example, the human body has been distilled down to a schematic image of a figure with two downward-pointing appendages. Other sign languages, though they seem to work from the same prototypical image of a human body, have chosen to represent different details: sometimes the head and torso, sometimes the legs, and sometimes both receive special attention in iconic representation. The index finger extended upward from a fist, the thumb extended upward from a fist, and the thumb extended upward with the little finger extended downward, are all phonetic forms used in sign languages to represent the human body.

This chapter will distinguish between plain iconicity and extensions of iconicity via metaphor or other conceptual associations. In iconic items, some aspect of the item's phonetic form (shape, sound, temporal structure, etc.) resembles a physical referent. That is, a linguistic item which involves only iconicity can only represent a concrete item that we can perceive. If a form has an abstract meaning, yet appears to give an iconic depiction of some concrete image, that case involves iconicity linked with metaphor or metonymy.

Thus, the ASL sign DRILL (Figure 18.3), whose form resembles a drill penetrating a wall, is purely iconic: its form directly resembles its meaning.

Fig. 18.4: The ASL sign THINK-PENETRATE

On the other hand, there is more than just iconicity in signs such as ASL THINK-PENETRATE (Figure 18.4), whose form resembles an object emerging from the head (☝-handshape) and piercing through a barrier (🤏-handshape). THINK-PENETRATE, which can be translated as 'to finally get the point', has a non-concrete meaning.

The image of an object penetrating a barrier is used to evoke the meaning of effortful but ultimately successful communication. This use of a concrete image to describe an abstract concept is an instance of conceptual metaphor (Lakoff/Johnson 1980), and THINK-PENETRATE is thus metaphorical as well as iconic (see section 3.5 for more detail).

2.3. History of attitudes toward iconicity

There has been a long history of minimizing and dismissing iconicity in language, starting with de Saussure's (1983 [1916]) doctrine of the 'arbitrariness of the sign', which states that there is no natural connection between a concept and the word used to represent it. De Saussure's statement was aimed at countering a naïve view of iconicity, one that would attempt to derive the bulk of all languages' vocabularies from iconic origins (i.e., even words like English 'cat', 'dog', and 'girl'). But for years, it was used to dismiss discussions of *any* iconic aspects of language.

The rise of functionalist and cognitivist schools of linguistics, with their interest in conceptual motivation, allowed a renewal of attention to iconicity in spoken languages. Studies of 'sound symbolism' (e.g., Hinton/Nichols/Ohala 1994), that is, cases in which the sound of a word resembles the sound of its referent, showed that onomatopoetic words are motivated but systematic and language-specific: many spoken languages have a subsystem within which words may resemble their meanings yet conform to the language's phonological constraints (Rhodes/Lawler 1981; Rhodes 1994). On a syntactic or morphological level (e.g., Haiman 1985), the order of words in a sentence or the order of morphemes in a polysynthetic word was often found to be iconic for temporal order of events or degree of perceived 'conceptual closeness' (a metaphorical use of iconicity).

Sign linguists, unlike spoken language linguists, never had the option of ignoring iconicity; iconicity is too pervasive in sign languages, and even a non-signing observer can immediately notice the resemblance between some signs and their meanings. The earliest attitude toward sign language iconicity (and one that many non-linguists still hold) was that sign languages were simply a kind of pantomime, a picture language, with *only* iconicity and no true linguistic structure (Lane 1992). Over the years, sign linguists have had to work hard to fight the entrenched myth of sign languages as pantomime.

The first modern wave of sign language linguistics took two basic approaches to iconicity: strongly arguing against its presence or importance, with the goal of proving sign languages to be true languages (e.g., Hoemann 1975; Frishberg 1979; Supalla 1978, 1986, 1990); and diving into descriptions of its various manifestations, intrigued by the differences between sign and spoken languages (e.g., Mandel 1977; DeMatteo 1977).

Gradually, research (e.g., Boyes-Braem 1981; Fischer 1974; McDonald 1982; Supalla 1978; Wilbur 1979) began to establish that a linguistic system constrained sign language iconicity, even the most iconic and seemingly variable signs that came to be known as *classifiers* (see chapter 8). For example, in ASL, one kind of circular handshape (the

-handshape) is consistently used to trace the outlines of thin cylinders; other shapes are not grammatical. Without understanding the system, one cannot know the grammatically correct way of describing a scene with classifiers; one can only recognize that correct ways are iconic (a subset of the myriad possible iconic ways). These researchers argued against focusing on signs' iconicity; although many signs and linguistic subsystems are clearly motivated by iconicity, linguists would do better to spend their energy on figuring out the rules for grammatically-acceptable forms.

Klima and Bellugi (1979) set forth a measured compromise between the iconicity enthusiasts and detractors. They affirmed the presence of iconicity in ASL on many levels, but noted that it is highly constrained in a number of ways. The iconicity is conventionally established by the language, and not usually invented on the spot; and iconic signs use only the permitted forms of the sign language. Moreover, iconicity appears not to influence on-line processing of signing; it is 'translucent', not 'transparent', in that one cannot reliably guess the meaning of an iconic sign unless one knows the sign language already. To use their phrase, iconicity in sign languages is submerged – but always available to be brought to the surface and manipulated.

Though Klima and Bellugi's view has held up remarkably well over the years, recent research has identified a few areas in which signers seem to draw on iconicity in everyday language. We will discuss this research in section 4 below.

3. Examination of linguistic iconicity

We will now look in more detail at the types of iconic structures found in languages. Our focus will be sign language iconicity; spoken language iconicity will be touched on for comparison (also see Perniss/Thompson/Vigliocco (2010) for a recent discussion of the role of iconicity in sign and spoken languages).

3.1. Comparing iconic gestures and iconic signs

People use iconic representations in many communicative situations, from pictorial symbols to spontaneous gestures to fully conventionalized linguistic signs and words. In this section, we will compare iconic spontaneous gestures to iconic conventional linguistic items.

Scientific research on gestures has been expanding greatly in recent years (cf. Kendon 1988; McNeill 1992; see also chapter 27). It is well established, for example, that gestures accompanying speech differ in specific ways from gestures that occur alone and carry the entire communicative message. Some gestures (called 'emblems' by Kendon 1988) are fully conventionalized, such as the 'thumbs-up' gesture indicating approval; others are created spontaneously during a communicative event.

Figure 18.5 shows an example of a spontaneous iconic gesture. The woman is telling a story about a character who peeled a banana; as she says those words, her left hand configures as if she were holding the banana, and she moves her right hand downward along the left three times as if she were peeling the banana herself.

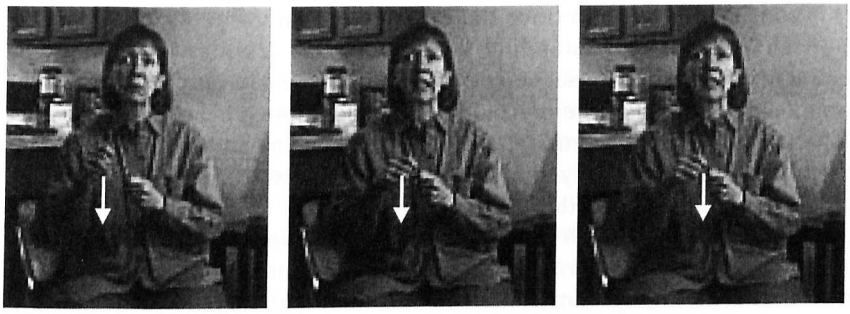

Fig. 18.5: Iconic gesture accompanying 'peels the banana'

This iconic gesture is embedded in a particular discourse event; it could not be interpreted if removed from its context. The woman's gesture represents a specific action done by a specific referent – the character's peeling of a banana.

By comparison, Figure 18.6 shows an iconic sign, the ASL sign BANANA. The dominant closed-X-handshape moves down the upright non-dominant ☝-handshape twice, with a shift of orientation between the movements.

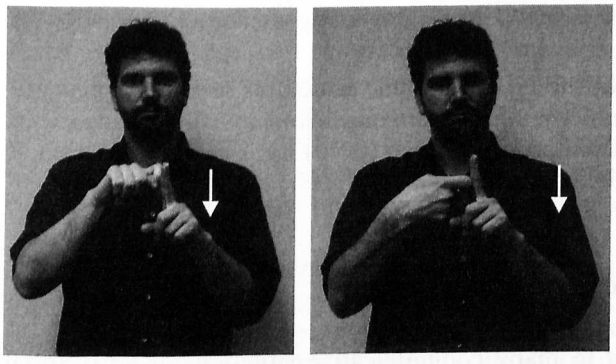

Fig. 18.6: The ASL sign BANANA

Though the sign is strikingly similar to the gesture, it is fully conventional and comprehensible in the absence of context. It represents a concept (*banana*, a type of fruit), not a specific action or image (a particular person peeling a banana).

The gesture and the sign are similar in that they both iconically present an image of a banana being peeled. They are both based on a mapping between two conceptual structures: an imagined action and a mental model of the communicator's body and surrounding space. These two structures are superimposed to create a composite or 'blended' structure (cf. Liddell 2003): the iconic sign or gesture. The differences between the gesture and the sign can be described in terms of differences between the two input structures and the resulting composite. It can also be described in terms of the producer's intention – using the terms of Cuxac and Sallandre (2007), the ges-

turer's intent is illustrative (i.e., to show an image), and the signer's intent is non-illustrative (i.e., to refer to a concept).

For spontaneous iconic gestures, the first structure is a specific event that the gesturer is imagining, and the second structure is a mental model of the space around the gesturer, including hands, face, and body. People who look at the gesture knowing that it is a composite of these two structures can directly interpret the gesturer's actions as the actions taking place in the imagined event (Liddell 2003).

Recent research (McNeill 1992; Morford et al. 1995; Aronoff et al. 2003) suggests that as iconic gestures are repeated, they may shift to become more like conventional linguistic items in the following ways: the gesturer's action becomes a regular phonetic form; the imagined event becomes a schematic image no longer grounded in a specific imagined time or place; and the meaning of the composite becomes memorized and automatic, no longer created on the spot via analogy between form and image. Though the 'peel banana' gesture in Figure 18.5 is not the direct ancestor of the ASL sign BANANA, we can surmise that it resembles that ancestor and can serve to illustrate these changes.

As the gesturer's action becomes a sign language phonetic form, it conventionalizes and can no longer be freely modified. The action often reduces in size or length during this process, and may shift in other ways to fit the sign language's phonological and morphemic system. Aronoff et al. (2003) refer to this as taking on 'prosodic wordhood'. In our example, we see that the 'peel banana' gesture involves three gestural strokes, whereas the ASL sign has two strokes or syllables – a typical prosodic structure for ASL nouns. As gestures become signs, a shift toward representing objects by reference to their shapes rather than how they are manipulated has also been observed (cf. Senghas (1995) for the creolization of Nicaraguan Sign Language; also see chapter 36, Language Emergence and Creolization). In our gestural example, the non-dominant hand is a fist handshape, demonstrating how the banana is held; in ASL BANANA, the non-dominant handshape is an extended index finger, reflecting the shape of the banana.

Our example also illustrates the shift from an imagined scene to a stylized image, in tandem with the shift from illustrative to non-illustrative intent. In ASL BANANA, though an image of peeling a banana is presented, it is not intended to illustrate a specific person's action. Moreover, the sign does not denote 'peeling a banana'; rather, it denotes the concept 'banana' itself. As we shall see, the images presented by iconic signs can have a wide range of types of associations with the concepts denoted by the signs.

This discussion applies to iconicity in the oral-aural modality as well as the visual-gestural modality. Vocal imitations are iconic in that the vocal sounds resemble the sounds they represent; spontaneous vocal imitations may conventionalize into iconic spoken-language words that 'sound like' what they mean (Rhodes 1994). This type of iconicity is usually called *onomatopoeia.* Other forms of spoken-language iconicity exist; see Hinton, Nichols and Ohala (1994) for more information.

To summarize: iconic spontaneous gestures and iconic signs are similar in that both involve structure-preserving mappings between form and referent. The crucial differences are that iconic gestures are not bound by linguistic constraints on form, tend to represent a specific action at a specific time and place, and are interpreted as meaning-

ful via an on-line conceptual blending process. In contrast, iconic signs obey the phonotactic constraints of the respective sign language, denote a concept rather than a specific event, and have a directly accessible, memorized meaning.

3.2. Classifiers: illustrative intent with some fixed components

The previous section discussed how a spontaneous iconic gesture changes as it becomes a conventionally established or 'fixed' iconic sign. We may add to this discussion the fact that many iconic linguistic structures in sign languages are not fully fixed. In particular, the many types of spatially descriptive structures mostly known as *classifiers* (see chapter 8) are highly variable and involve strong iconicity – spatial characteristics of the structure (e.g., motion, location, handshape) are used to represent spatial characteristics of the event being described. Just as in spontaneous iconic gesture, the intent of the signer in these cases is illustrative (i.e., to 'show' a particular event or image; see Cuxac/Sallandre (2007) and Liddell (2003) for different analyses). However, classifiers differ from spontaneous gesture in that while certain components of these structures may vary to suit the needs of illustration, other components are fixed (Emmorey/Herzig 2003; Schembri/Jones/Burnham 2005; see also sections 2.3 above and 4.1 below). These fixed components (usually the handshapes) are often iconic as well, but may not be freely varied by the signer to represent aspects of the scene.

Thus, classifier constructions are like spontaneous iconic gestures in that they are intended to 'show' a specific mental image; some of their components, however, are conventionally established and not variable.

3.3. Types of form/image associations

In cataloguing types of iconicity, we will look at the two main associations in iconic signs: the perceived similarity between the phonetic form and the mental image, and the association between the mental image and the denoted concept (see also Pietrandrea (2002) for a slightly different analysis). We will first examine types of associations between form and image. Note that both illustrative and non-illustrative structures draw on these associations (see also Liddell (2003) and Cuxac/Sallandre (2007) for slightly different taxonomies of these associations).

There are many typical ways in which a signer's hands and body can be seen as similar to a visual or motor image, giving rise to iconic representations. Hands and fingers have overall shapes and can be seen as independent moving objects. They can also trace out paths in space that can be understood as the contour of an object. Human bodies can be seen as representing other human bodies or even animal bodies in shape, movement, and function: we can easily recognize body movements that go with particular activities. Sign languages tend to use most of these types of resemblances in constructing iconic linguistic items. This section will demonstrate a few of these form/image resemblances, using examples from lexical signs, classifiers, and grammatical processes.

The first type of form/image association I will call a *full-size* mapping. In this case, the communicator's hands, face, and upper body are fully blended with an image of

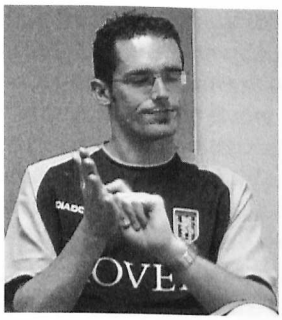

Fig. 18.7: The Auslan sign WRITE

another human (or sometimes an animal). In spontaneous full-size mappings, the communicator can be thought of as 'playing a character' in an imagined scene. He or she can act out the character's actions, speak or sign the character's communications, show the character's emotions, and indicate what the character is looking at.

When full-size mappings give rise to lexical items, they tend to denote concepts that can be associated with particular actions. Often, signs denoting activities will be of this type; for example, the sign for WRITE in ASL, SKSL, NGT, Auslan, and many other sign languages (Figure 18.7) is based on an image of a person holding a pen and moving it across paper, and ASL KARATE is based on stylized karate movements. In addition, categories of animals or people that engage in characteristic actions can be of this type; e.g., ASL MONKEY is based on an image of a monkey scratching its sides.

Full-size mappings also play a part in the widespread sign-language phenomenon known as 'role shift' or 'referential shift'. In role shift, the communicator takes on the roles of several different characters. Sign languages develop discourse tools to show where the signer takes up and drops each role, including gaze direction, body posture, and facial expressions (see also chapter 17, Utterance Reports and Constructed Action).

Another major mode of iconic representation might be called *hand-size* mappings. In these, the hands or fingers represent independent entities, generally at reduced size. The hands and fingers can represent a character or animate being; part of a being – head, legs, feet, ears, etc.; or an inanimate object.

Because hands move freely, but are small, allowing a 'far-off' perspective, hand-size mappings are ideal for indicating both the entity's shape and its overall path through space. In section 2.2, we have already touched on a few examples of classifier handshapes representing humans; for additional examples of classifiers involving hand-size mappings, see chapter 8. Lexicalized hand-size mappings can take on a wide range of meanings associated with entities and their actions (see next section).

A slight variation of this mode might be called *contour* mappings, in which the hands represent the outline or surface contour of some entity. It is common to have classifier forms of this sort; for example, ASL has a set of handshapes for representing cylinders of varying depth (one, two, or four fingers extended) and diameter ( , or closed circle, for narrow cylinders;  , or open circle, for wide ones; for the widest cylinders, both hands are used with -handshapes). These forms easily lexicalize into

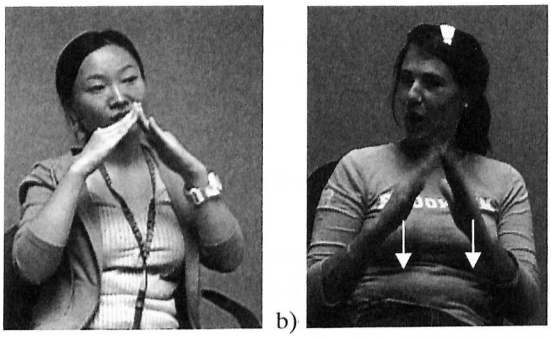

Fig. 18.8: a) HOUSE in SKSL, with 'contour' mapping vs. b) HOUSE in NGT, with 'tracing' mapping

signs representing associated concepts; ASL PLATE and PICTURE-FRAME are of this type, and so is SKSL HOUSE (Figure 18.8a), which is based on an image of a typical house with a pointed roof.

In a third major mode of iconic representation, here called *tracing* mappings, the signer's hands trace the outline of some entity. Unlike the first two modes, in which the signer's movement represents an entity's movement in the imagined event or image, here movement is interpreted as the signer's 'sketching' motion. This mode draws on the basic human perceptual skill of tracking a moving object and imagining its path as a whole. Most sign languages have sets of classifier handshapes used for tracing the outlines of objects – in ASL, examples include the extended index finger for tracing lines, the flat -handshape for tracing surfaces, and the curved - and -handshapes for tracing cylinders. Lexicalized examples include ASL DIPLOMA, based on the image of a cylindrical roll of paper, and NGT HOUSE (Figure 18.8b).

Many more types of iconic form/image relationships are possible, including: number of fingers for number of entities; manner of movement for manner of action; duration of gesture for duration of event; and repetition of gesture for repetition of event. A detailed description is given in Taub (2001, 5).

For comparison, the spoken modality is suited for iconic representations of sound images, via what we might call 'sound-for-sound' iconicity: spoken languages have conventional ways of choosing speech sounds to fit the pieces of an auditory image. The resulting words can be treated as normal nouns and verbs, as they are in English, or they can be separated off into a special adverb-like class (sometimes called *ideophones*), as in many African and Asian languages (e.g., Alpher 1994).

3.4. Types of concept/image associations

We turn now to types of relationships between an iconic linguistic item's image and the associated concept. Note that this section applies only to conventional or 'frozen' structures, where the signer is 'saying without showing' (i.e., non-illustrative intent in

Cuxac/Sallandre's terms) – if the intent were illustrative, the signer would be 'showing' an image rather than referencing a concept related to that image.

It is a common misimpression that only concrete, simple concepts can be represented by iconic linguistic items. On the contrary, iconic items represent a wide range of concepts – the only constraint is that there must be some relationship between the iconic image and the concept signified. Since we are embodied, highly visual creatures, most concepts have some relation to a visual, gestural, or motor image. Thus we see a wide variety of concept/image associations in sign languages, with their ability to give iconic representation to these types of images.

One common pattern in sign languages is for *parts* to stand for *wholes*. If the concept is a category of things that all have roughly the same shape, sometimes the selected image is a memorable part of that shape. In many sign languages, this is a common way to name types of animals. For example, the sign CAT in ASL and British Sign Language (BSL) consists of the 🤏-shaped hand (index finger and thumb touching, other fingers extended) brushing against the signer's cheek; the thumb and index finger touch the cheek, and the palm is directed forward. The image presented here is of the cat's whiskers, a well-known feature of a cat's face.

If the concept is a category of physical objects that come in many sizes and shapes, sometimes the selected image is a *prototypical* member of the category. This is the case for the SKSL and NGT signs for HOUSE (Figure 18.8), and the various signs for TREE cited in section 1: houses and trees come in many sizes and shapes, but the image in both signs is of a prototypical member of the category. For HOUSE, the prototype has a pointed roof and straight walls; for TREE, the prototype grows straight out of the ground, with a large system of branches above a relatively extended trunk.

Categories consisting of both physical and non-physical events can also be represented by an image of a prototypical case, if the prototype is physical. For example, the ASL verb GIVE uses the prototypical image of handing an object to a person, even though GIVE does not necessarily entail physically handling an object; GIVE can involve change of possession and abstract entities as well as movement and manipulation of physical objects (Wilcox 1998).

In many cases, the image chosen for a concept will be of a typical body movement or action associated with the concept. Signs denoting various sports are often of this type, as noted in section 3.3 above. Body movements can also name an object that is associated with the movement; for example, CAR in ASL and BSL uses an image of a person turning a steering wheel (again encoded with fist-shaped instrument classifiers).

In some signs, an entire scenario involving the referent as well as other entities is given representation. ASL examples include GASOLINE, showing gas pouring into a car's tank, and KEY, showing a key turning in a lock. Auslan WRITE (Figure 18.7) is also of this type, showing the signer moving a pen across paper.

Finally, if some physical object is strongly associated with the concept, then the image of that object may be used to represent the concept. For example, in many sign languages, the sign for OLYMPICS represents the linked-circles Olympics logo, as illustrated by signs from three different sign languages in Figure 18.9.

The final type of concept/image association in sign languages is complex enough to merit its own subsection (see section 3.5 below): *metaphorical* iconic signs, or those which name an abstract concept using a structured set of correspondences between the abstract concept and some physical concept.

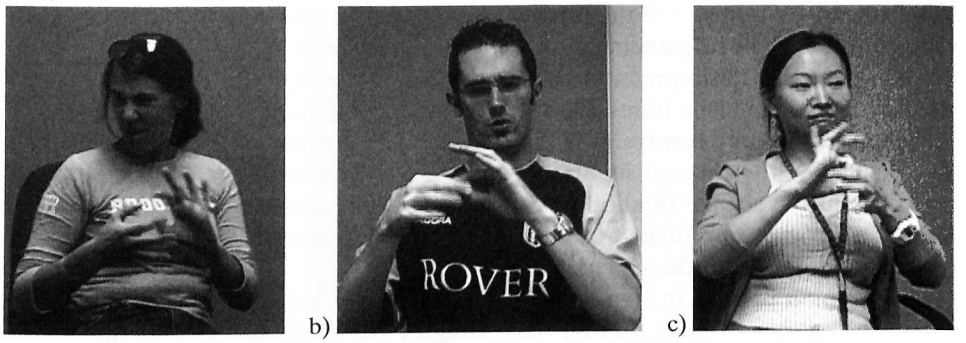

Fig. 18.9: The sign for OLYMPICS in a) NGT, b) Auslan, and c) SKSL

Though iconic images in spoken languages are limited to sound images, temporal images and quoted speech, the types of concepts given iconic representation are not so limited. This is because any concept that is somehow associated with these kinds of sensory images can enter into the analogue-building process.

Thus, a concept such as 'the destructive impact of one thing into another' can be named by the iconic English word *crash*, an example of onomatopoeia. This concept is not primarily an auditory one, but such impacts nearly always have a characteristic sound image associated with them. It is that sound image that receives iconic representation as *crash*. Then the iconic word is used to talk about the concept as a whole. Even abstract concepts that can in some way be associated with a sound image can thus be represented iconically in spoken languages (cf. Oswalt 1994) – for example, a *stock market crash* can be metaphorically associated with the sort of rapid descent and impact that could make a sound of this sort.

It turns out, of course, that the vast majority of concepts are not closely enough associated with a sound image. For this and other reasons, iconicity is less common in spoken than in sign languages. Fewer concepts are appropriate for iconic representation in the spoken modality; and, as we saw in the previous section, there are far fewer parameters that the spoken modality can exploit. The smaller amount of iconicity in spoken languages, which has been attributed to the inferiority of iconic representations, could just as well have been attributed to the inferiority of the spoken modality in establishing iconic representations.

3.5. Iconicity linked with metaphor

Conceptual metaphor is the use of one domain of experience to describe or reason about another domain of experience (Lakoff/Johnson 1980; Lakoff 1992). In spoken languages, this often manifests as the systematic use of words from the first domain (*source*) to describe entities in the second domain (*target*). For example, a phrase such as 'We need to dig deeper' can mean 'We need to think more intensely' about some topic.

In sign languages, however, the situation is somewhat different, due to the linkage between metaphor and iconicity (Wilbur 1987; Wilcox 2000; Taub 2001). Here we see

metaphor at work within sign languages' lexicons: vocabulary for abstract (target) domains often consists of iconic representations of concrete (source-domain) entities. Thus, for example, in the ASL verb ANALYZE, movements of the  -handshapes ('bent V') iconically show the process of digging deeper into some medium. In addition to the lexicon, the iconic classifier systems used for describing movements, locations, and shapes can be applied to the metaphorical description of abstract (non-physical) situations (see examples in Wilcox 2000); thus, this type of iconicity can be both illustrative and non-illustrative. This linkage between metaphor and iconicity is possible but rare in spoken languages; the pervasive iconicity of sign languages makes this phenomenon much more common there. Conversely, metaphor without iconicity is rare in ASL (cf. Wilbur 1990) and other sign languages (for the metaphorical use of 'time-lines' in sign languages, see chapter 9, Tense, Aspect, and Modality).

As an example, let us consider the domain of communication (also see Wilcox 2000). Many languages have a metaphor 'communication is sending' (e.g., Reddy 1979; Lakoff/Johnson 1980) where successful communication is described as successfully sending an object to another person. In ASL, a large set of lexical signs draw on this metaphor, including signs glossed as INFORM, COMMUNICATE, MISS, COMMUNICATON-BREAKDOWN, IT-WENT-BY-ME, OVER-MY-HEAD, and others. Brennan (1990) has documented a large set of signs in BSL that draw on the same metaphor as well. We shall see that these signs involve *two* conceptual mappings: one between target and source conceptual domains, and one between source-domain image and phonetic form (Taub 2001).

In the ASL sign THINK-PENETRATE (Figure 18.4 above), the dominant  -handshape begins at the temple and travels toward the locus of the verb's object. On the way, it encounters the non-dominant hand in a flat  -handshape, palm inward, but the index finger penetrates between the fingers of the flat hand. If this sequence were to be

Tab. 18.1: Iconic mapping for THINK-PENETRATE

ARTICULATORS	SOURCE
1->CL ()	an object
Forehead	head
1->CL touches forehead	object located in head
1->CL moves toward locus of addressee	sending an object to someone
non-dominant B-CL ()	barrier to object
1->CL inserted between fingers of B-CL	penetration of barrier
signer's locus	sender
addressee's locus	receiver

Tab. 18.2: Iconic mapping for DRILL

ARTICULATORS	SOURCE
dominant L-handshape ()	long thin object with handle (in particular, a *drill*)
non-dominant B-CL ()	flat surface
L inserted between fingers of B-CL	penetration of surface

Tab. 18.3: Double mapping for THINK-PENETRATE

Iconic Mapping	Metaphorical Mapping	
ARTICULATORS	SOURCE	TARGET
1->CL	an object	an idea
Forehead	head	mind; locus of thought
1->CL touches forehead	object located in head	idea understood by originator
1->CL moves toward locus of addressee	sending an object to someone	communicating idea to someone
non-dominant B-CL	barrier to object	difficulty in communication
1->CL inserted between fingers of B-CL	penetration of barrier	success in communication despite difficulty
signer's locus	sender	originator of idea
addressee's locus	receiver	person intended to learn idea

interpreted as a classifier description, it would denote a long thin object (the index finger or '1->') emerging from the head, moving toward a person, encountering a barrier, and penetrating it. Table 18.1 spells out this iconic mapping between articulators and concrete domain.

It is useful to contrast THINK-PENETRATE and ASL DRILL (Figure 18.3 above), a sign derived from lexicalized classifiers. In DRILL, the dominant hand assumes a 𝟙-handshape, with index finger and thumb extended; the non-dominant hand again forms a 𝟙-handshape. The index finger of the 𝟙-hand penetrates between the fingers of the 𝟙-hand. The image chosen to stand for the piece of equipment known in English as a 'drill' is that of a long thin object (with a handle) penetrating a surface; the 𝟙, of course, iconically represents the long thin object (or drill), and the flat hand represents the surface pierced by the drill. This is a case of pure iconicity. The iconic mapping is given in Table 18.2.

Unlike DRILL, THINK-PENETRATE does not describe a physical scene. Its actual meaning can be translated as 'to get one's point across' or 'for someone to understand one's point'. When we consider as well signs such as I-INFORM-YOU, THINK-BOUNCE, OVER-MY-HEAD, and IT-WENT-BY-ME, all of which resemble classifier descriptions of objects moving to or from heads and pertain to communication of ideas, we have strong evidence for a metaphorical mapping between the domains of *sending objects* and *communicating ideas*. Thus, THINK-PENETRATE involves *two* mappings: an iconic mapping between articulators and source domain, and a metaphorical mapping between source and target domains.

In Table 18.3, we can see how each articulatory element of THINK-PENETRATE corresponds to an element of the domain of *communication*, via the double mapping. The signer's location corresponds to the communicator's location; the index finger corresponds to the information to be communicated; the movement of the index finger from signer toward the syntactic object's location in space corresponds to the communication of that information to an intended recipient; the flat hand represents a difficulty in communication; and finally, penetration of the flat hand represents success in communication despite the difficulty.

Signs that share a metaphorical source/target mapping need not share an iconic source/articulators mapping. The classifier system of ASL provides several iconic ways

to describe the same physical situation, and all of these ways can be applied to the description of a concrete source domain. For example, consider the sign I-INFORM-YOU, where closed flat-O-handshapes begin at the signer's forehead and move toward the addressee's location, simultaneously opening and spreading the fingers. This sign does not have a physical articulator corresponding to the idea/object; instead, the flat-O classifier handshapes iconically represent the handling of a flat object and the object itself is inferred. Nevertheless, in both I-INFORM-YOU and THINK-PENETRATE, the moved object (regardless of its representation) corresponds to the notion of an *idea*.

This suggests that the double-mapping model is a useful way to describe metaphorical/iconic phenomena in sign languages: a single-mapping model, which described signs in terms of a direct mapping between articulators and an abstract conceptual domain, would miss what THINK-PENETRATE and I-INFORM-YOU have in common (i.e., the source/target mapping); it would also miss what THINK-PENETRATE and DRILL have in common (i.e., the fact that the source/articulators mappings are much like the mappings used by the sign language's productive classifier forms).

We may note that metaphorical/iconic words and constructions also exist in spoken languages, and can be handled with a double mapping and the analogue-building process in the same way as metaphorical/iconic signs. Some examples of metaphorical iconicity in English include *lengthening* to represent *emphasis* (e.g., 'a baaaad idea'; cf. Okrent 2001, 187 f.), and *temporal ordering* to represent *order of importance* (e.g., topic/comment structures such as 'Pizza, I like'; cf. Haiman 1985).

3.6. Partially iconic structures: temporal iconicity

Drawing on the definition of iconicity as a structure-preserving mapping between form and image associated with meaning, we find many lexical items, syntactic structures, and other linguistic structures that are partially iconic. In these cases, only some aspects of each sign are iconically motivated; thus, unlike the iconic items discussed above, they do not present a single consistent iconic image.

We only have space to look at one type of partial iconicity: the case of *temporal iconicity*, where morphological and syntactic structures whose temporal structure is related to their meaning are superimposed on non-iconic lexical material. Other partially iconic phenomena include: lexical items for which different aspects of the sign are motivated by different iconic/metaphorical principles (Taub 2001, 7); sign language pronoun systems, which are partially iconic and partially deictic (see chapter 11, Pronouns); and metaphorical/iconic use of locations in signing space to convey notions of relative power and affiliation (see chapter 19, Use of Sign Space). For the most part, these phenomena are not consistent with illustrative intent.

Temporal iconicity is fairly common in both sign and spoken language temporal aspect systems. One common example is the use of reduplication (i.e., the repetition of phonetic material) in morphological structures denoting repetition over time (see, e.g., Wilbur 2005). Many sign languages have a much more extensive use of iconicity in their temporal aspect systems, in that the temporal structure of most aspectual inflections reflects the temporal structure of the event types they describe.

Consider, for example, the ASL *protracted-inceptive* (PI) inflection (Brentari 1996). This inflection can occur on any telic verb; it denotes a delay between the onset of the

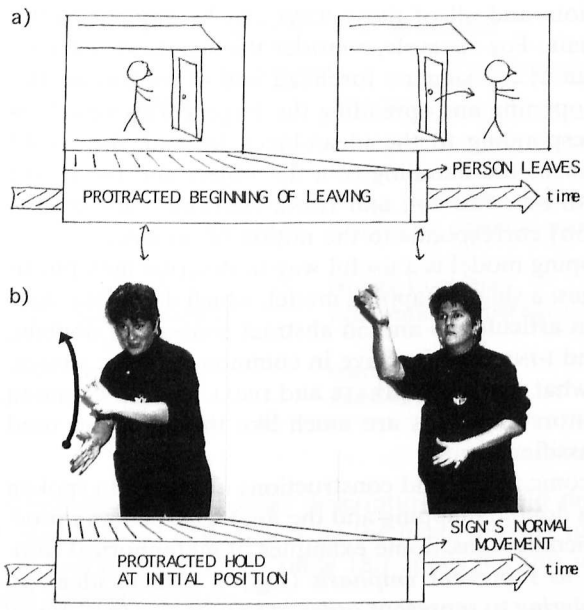

Fig. 18.10: Structure-preserving correspondences between the temporal structure of a) a situation where a person is delayed but eventually leaves and b) the sign LEAVE inflected for PI.

verb's action and the accomplishment of that action – in effect, a 'protracted beginning' of the action. PI's phonetic form involves an extended hold at the verb's initial position, while either the fingers wiggle (if the handshape is an open ✋) or the tongue waggles (if the handshape is more closed); after this hold, the verb's motion continues as normal.

Figure 18.10 (taken from Taub 2001) demonstrates this inflection with a specific verb. Figure 18.10a shows a situation where PI is appropriate: a person who intends to leave the house is temporarily delayed (perhaps by another person needing to talk); eventually the person does leave. Figure 18.10b shows two phases of the ASL sign LEAVE inflected for PI: first the long initial hold, and then the verb's normal movement.

It is easy to see the correspondences between the two temporal structures: a delay in leaving (referent) is represented by a delay in the verb's normal motion (form); similarly, the eventual accomplishment of leaving (referent) is represented by the eventual performance of the verb's normal motion (form).

3.7. Are sign languages more iconic than spoken languages?

The well-known fact that sign languages have more iconicity than spoken languages (see, e.g., Klima/Bellugi 1979) is easily explained by the conceptual mapping model we have been examining. The potential for iconicity is far greater in the signed modality for two reasons. First, we have more visual and motor images than sound images associated with concepts – for example, there is no characteristic sound for the category

table, yet there is a characteristic shape. Second, the signed modality, with its use of body movements, facial expressions, hand and arm configurations, and space near the signer, has a large number of possible ways to build linguistic analogues for mental images. The spoken modality has little more than the ordering of sounds and the pitch of the speaker's voice. Thus, in creating iconic blends, sign languages have a greater range of possibilities to draw on.

Given the abundance of iconic items in sign languages and their substantial presence in spoken languages, it is plausible to claim that languages in fact draw on iconicity as much as possible in the formation of new morphemes (cf. Armstrong 1988; Liddell 1992; Taub 2001; Perniss/Pfau/Steinbach 2007). Only the relative poverty of auditory imagery in our experience, and the lack of precision in our auditory and vocal systems (e.g., in creating and detecting localized sounds), has kept spoken languages from being richly iconic.

4. Relevance of iconicity to sign language use

As we have seen, iconic linguistic items are conventional and language-specific; they are motivated by their meaning but not predictable from it. Since iconic items seem to originate in imitative gestures, iconicity is clearly a significant factor in sign creation. As noted by Currie, Meier, and Walters (2002) and McKee and Kennedy (2000), iconicity must be taken into account when calculating historical relationships among sign languages, as a certain percentage of signs will be similar based on iconicity rather than historical derivation (see chapter 38 for further discussion). Yet how relevant is iconicity to daily use of sign languages?

4.1. Acquisition and routine language use

Psycholinguistic studies of iconicity's relevance to acquisition and memory suggest that in everyday use, signers are usually not conscious of a sign's iconicity. For example, Orlansky and Bonvillian (1984) found that the first signs learned by children do not tend to be iconic, and Meier (1982, 1987) showed that iconic morphological structures and personal pronouns are first used by children without regard to their iconicity (also see chapter 28, Acquisition, and chapter 25, Language and Modality). Poizner, Bellugi, and Tweney (1981) demonstrated that ASL signers' ability to recall signs was not affected by their iconicity. Bosworth and Emmorey (1999) showed that sign iconicity plays no role in semantic priming (the ability to recognize a sign more quickly when a semantically related sign is presented first as a 'prime'). In addition, all conventional signs are treated alike by grammatical rules, regardless of whether they are iconic or not (Emmorey 2002). Thus, awareness of iconicity seems to be 'optional' in daily language use of lexical signs.

On the other hand, the iconic use of signing space is crucial to spatial descriptions and classifier constructions (Emmorey 2002; also see chapter 19, Use of Sign Space). Schembri, Jones, and Burnham (2005) compared classifier descriptions in Auslan and Taiwan Sign Language with non-signers' gestured descriptions of the same scenes, and

found that while the classifier handshapes were language-specific, the movements and locations of both sign languages matched almost completely with each other and with the non-signers' gestures. This suggests that classifier handshapes, whether iconic or not, are fully conventional and rarely modified, while movements and locations are produced on-line to match a conceptual model. Emmorey and Herzig's (2003) study of production, comprehension, and acceptability judgments of ASL classifier constructions also supports this conclusion.

Theoretically, this is not surprising. Linguistic forms that depend on an active 'blending' of two conceptual spaces (Liddell 2003) or have illustrative intent (Cuxac/Sallandre 2007) are exactly the sorts of forms that require on-line iconic manipulation. Forms that are simply memorized or used non-illustratively would not require attention to their iconic component.

4.2. Iconicity in sign language poetry

Signers often play with the iconicity of lexical signs (e.g., Klima/Bellugi 1979), showing that it can be brought to awareness if desirable. Sign language poetry in particular makes highly effective use of iconicity and metaphor in creating structured, artistic language (see chapter 41).

Poets make art from language by creating patterns of meaning (e.g., repeated images or metaphors) and patterns of form (e.g., repetition of phonetic material). In spoken languages, these levels are largely separate, but in sign languages, the two can combine and overlap. That is, the poet's concrete and metaphorical mental imagery can receive direct visual representation through the language's iconic lexical items and grammatical inflections.

For example, the ASL poem 'Circle of Life' (Lentz 1995; analyzed in Taub 2001) was composed for a wedding. One theme of this poem, *eternity*, is represented metaphorically by *repeated circular motion*, and by *circles* in general. The poem is full of circular signs. A few (e.g., YES, ENVISION, RELATIONSHIP) do not share the notion of *eternity*, and simply 'rhyme' by having circular handshapes. Other signs have circular handshapes or motions because they iconically depict the motion of the earth and sun (YEAR, SUN-RISE-AND-SET, WORLD, WORLD-TURN), or the motion of clock hands (HOUR, ERA); these concepts are strongly associated with *time* and *eternity*. The sign ENGAGE depicts a ring sliding onto a finger, and the wedding ring is of course a conventional symbol of *eternity*. Finally, ASL's grammatical inflection for 'continuation over time' is itself a circular movement superimposed upon a verb root, and this metaphorical/iconic inflection appears throughout. Thus, circles function as both a 'rhyme scheme' and a conceptual motif in this poem.

4.3. Historical change: loss and preservation of iconicity

Once a form/meaning pairing has been conventionally adopted as part of a language's lexicon or grammar, users seem to stop accessing its iconic origins on-line, and it may undergo changes that make it less transparently iconic (cf. Klima/Bellugi 1979; Brennan

1990). One example is the 'opaque' ASL sign HOME, where a flat-O-shaped hand touches the cheek first near the mouth and second near the ear; this sign developed as a compound of the iconic signs EAT (flat-O at the mouth) and SLEEP (spread hand's palm at the cheek, suggesting a pillow). For another example, Frishberg (1979) noted that ASL signs tend to move from their original locations toward the center of signing space. This process may make the sign easier to perceive, by moving it closer to where the eyes fixate; but it would reduce a sign's iconicity by moving it from the iconically appropriate location.

These changes are not surprising, as we see the same effects for any sort of derivational morphology. Derived items of all sorts can take on semantic nuances not predictable from their parts. At that point, users of the item are clearly not re-deriving it on-line each time they use it, but instead have given it some kind of independent representation. Over time, any such items can become so remote from their derivational origins that typical users would not know how the item arose.

It is useful to note, in addition, that iconic items often *resist* regular changes that affect all other items of the language (e.g., Hock 1986): some onomatopoetic spoken-language words persist in their original forms despite regular sound change in the rest of the language. Similarly, sign language classifier systems may shift over time, but they maintain some core iconic aspects. For example, Morford, Singleton, and Goldin-Meadow (1995) suggest that as homesign systems (see chapter 26) develop, classifier-like gestures start as strict representations of an object's shape, but later represent an entire semantic category regardless of each member's shape (e.g., all vehicles would eventually get the same classifier, as in today's ASL). But since classifiers would still be chosen based on the shape of the category prototype, this does not remove all iconicity from the system.

Other changes in iconic items that have been described as a 'loss of iconicity' could be better classed as a shift in type of iconicity. For example, Senghas (1995) notes that in Nicaraguan Sign Language, some classifier constructions based on the movements of handling objects are replaced by constructions that represent the shape and size of the object; this may be a move away from 'mimetic enactment', as she claims, but it is certainly not a loss of iconicity itself. Boyes-Braem (1981) noted a similar distinction between motor-based and shape-based iconicity in ASL. She describes this as *de-iconicization*, where the new form is less pantomimic and more 'sign-like' than the old, but once again the two forms are equally iconic.

In sum, changes in lexical signs may remove some small portion of sign languages' iconicity, but the core iconic grammatical structures that appear in language after language are unlikely to fully vanish.

5. Conclusion

In this chapter, we have seen a unified treatment of iconicity in sign and spoken languages. Iconicity exists in all types of languages and is a normal mode of creating linguistic items: conventional iconic structures emerge via repetition from spontaneous gestural blends. While some iconicity is lost as languages change over time, other types of iconic forms remain. Sign languages have more iconic items than spoken languages

because the resources of sign languages lend themselves to presenting visual, spatial, and motor images, whereas the resources of spoken languages only lend themselves to presenting auditory images. Moreover, the combination of iconicity with metaphor and metonymy allows for iconic representation of abstract concepts.

Despite its pervasiveness in sign languages, iconicity seems to play no role in acquisition, recall, or recognition of fixed lexical signs in daily use. It is important, however, for the use of key linguistic systems for description of spatial relationships (i.e., classifier constructions and possibly pronoun systems). Moreover, language users are able to exploit perceived iconicity spontaneously in language play and poetic usage.

We may conclude that iconicity does not limit sign languages. It is irrelevant to daily use of lexical items, crucial to spatial descriptions, and a major resource for poetic and creative language play.

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19. Use of sign space

Abstract

This chapter focuses on the semantic and pragmatic uses of space. The questions addressed concern how sign space (i.e. the area of space in front of the signer's body) is used for meaning construction, how locations in sign space are associated with discourse referents, and how signers choose to structure sign space for their communicative intents. The chapter gives an overview of linguistic analyses of the use of space, starting with the distinction between syntactic and topographic uses of space and the different types of signs that function to establish referent-location associations, and moving to analyses based on mental spaces and conceptual blending theories. Semantic-pragmatic conventions for organizing sign space are discussed, as well as spatial devices notable in the visual-spatial modality (particularly, classifier predicates and signing perspective), which influence and determine the way meaning is created in sign space. Finally, the special role of simultaneity in sign languages is discussed, focusing on the semantic and discourse-pragmatic functions of simultaneous constructions.

1. Introduction

As many of the chapters in this volume demonstrate, signed and spoken languages share fundamental properties on all levels of linguistic structure. However, they differ radically in the modality of production – spoken languages use the vocal-auditory modality, while sign languages use the visual-spatial modality. The most obvious modality-related difference lies in the size and visibility of the articulators used for language production. Through their movements, the hands (as the primary articulators) produce

meaningful utterances in what is known as sign space, i.e. the space in front of the signer's body. By virtue of being produced in the visual-spatial modality, essentially all of linguistic expression in sign languages depends on the use of space. On the phonological level, space is used contrastively in the place of articulation parameter of signs. On the morphosyntactic level, signs are modulated in space for grammatical purposes, including aspectual marking, person and number marking, to distinguish between the arguments of a predicate, and to identify referents at certain locations in space (see Engberg-Pedersen 1993; Klima/Bellugi 1979; Meir 2002; Padden 1990; Sandler/Lillo-Martin 2006; also see chapters 7, 8, and 11).

The focus of the present chapter is on the semantic and pragmatic uses of space. The questions addressed concern how locations in sign space are associated with discourse referents and how signers choose to structure sign space for their communicative intents. This chapter will have little to say, therefore, about the functional/structural analysis of morphosyntactic devices as such (e.g. pronouns, agreement or directional verbs, and classifier predicates). They will be relevant, but only insofar as they bear on the semantic and pragmatic structuring of sign space.

The chapter gives an overview of how sign space is used for the purpose of meaning construction in signed utterances. Section 2 introduces and critically discusses the two main types of use of sign space, i.e. syntactic and topographic, that have been traditionally proposed. Section 3 presents semantic and pragmatic conventions for choosing referent locations, and discusses the use of sign space on the higher level of discourse structuring. Section 4 deals with signing perspective, as a way of structuring space for event space projection, and the closely related use of classifier predicates. Section 5 focuses on the use of simultaneous constructions, as a special way of structuring sign space given the availability of multiple, independent articulators in the visual-spatial modality. Section 6 provides a look at sign language typology and the possible typological variation in the use of sign space for meaning construction. Finally, section 7 gives a summary and offers an outlook on future research.

2. Use of sign space for referent localization

The main principle guiding the use of sign space to express meaning in sign languages is the association of referents with locations in space. Traditionally, the use of space to achieve referent-location associations has been analyzed as taking two main forms: *syntactic* and *topographic* (Klima/Bellugi 1979; Poizner/Klima/Bellugi 1987).

2.1. Syntactic use of sign space

In the syntactic (or referential) system, locations in sign space are chosen arbitrarily to represent referents. The locations themselves are not considered to have semantic import of any kind. Rather, they represent relations purely on an abstract, syntactic level, e.g. to identify a verb's arguments (e.g. Padden 1990; cf. chapter 7, Verb Agreement) or for pronominal reference (e.g. Lillo-Martin/Klima 1990; cf. chapter 11, Pronouns). For example, a signer may associate a location X_1 in sign space to a referent