Wilcox, Phyllis Perrin
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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

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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

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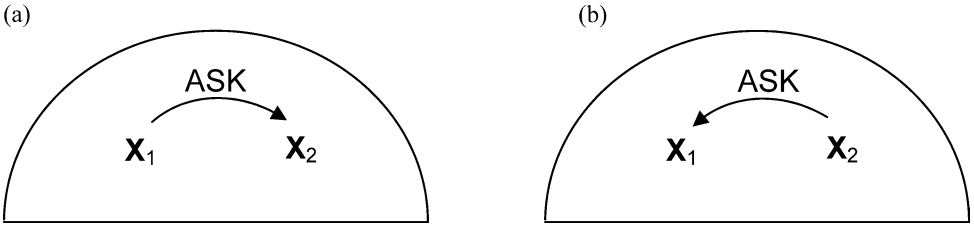

Fig. 19.1: Example of the syntactic use of sign space. In the semi-circle representing sign space, X_1 and X_2 are locations associated with the discourse referents 'girl' and 'boy', respectively. In (a), the directional verb sign ASK moves from X_1 to X_2 to express 'The girl asks the boy'. In (b), ASK moves from X_2 to X_1 to express 'The boy asks the girl'.

'girl' and a location X_2 to a referent 'boy'. By moving a directional (or agreement) verb between these two locations, or sign space loci, the signer can express either the meaning *The girl asks the boy* (by moving the verb sign from X_1 to X_2, as in Figure 19.1a) or the meaning *The boy asks the girl* (by moving the verb sign from X_2 to X_1, as in Figure 19.1b).

Liddell (1990) describes the syntactic use of sign space in terms of *referential equality.* In assigning entities to certain locations in sign space, those locations become stand-ins for the entities themselves. Reference to the locations, e.g. by directing verb signs or points to them, is equal to reference to the entities. Liddell (1990, 304) likens the relationship of referential equality to the terminology of a legal contract. If Mr. Jones is identified as "the borrower" in a contract, then all subsequent mentions of "the borrower" within that contract refer to Mr. Jones, since the use of the phrase "the borrower" is referentially equivalent to the man called Mr. Jones.

2.2. Topographic use of sign space

In Figure 19.1, the choice of locations in sign space gives no information about the actual locations of the boy and girl in the event being described. Such locative information is conveyed, however, when sign space is used topographically. In the topographic use of space, the referent-location associations in sign space are in themselves meaningful. They are chosen not arbitrarily, but rather to express spatial relationships between referents. Thus, the locations X_1 and X_2 shown in Figure 19.1 would represent the locations of the girl and the boy with respect to each other. The topographic use of sign space exploits the iconic properties of the visual-spatial modality, as the spatial relationships between locations in sign space match those between the referents in the real or imagined event space being described (cf. chapter 18, Iconicity and Metaphor).

In contrast to *referential equality*, when sign space is used topographically, Liddell (1990, 304) describes the relationship between a location in sign space and a referent as *location fixing*. The referent is conceived of as being located at the particular sign space location, which corresponds to a particular location in the real (or imagined) world. Liddell uses the example of an actor who is told to stand at a particular location

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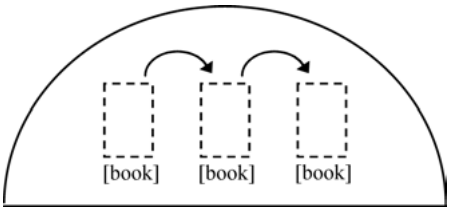

Fig. 19.2: Example of the topographic use of sign space. In the semi-circle representing sign space, the dashed squares represent the placement of the hand in three different sign space locations associated with the locations of three books in the real (or imagined) world. The meaning expressed is 'There are three books lying next to each other'.

on a stage. The actor's location is thereby fixed within a spatial setting, and is topographically meaningful within that setting.

The topographic use of sign space is often associated with the use of *classifier predicates* (cf. chapter 8). In these morphologically complex predicates, the handshape represents referents by classifying them according to certain semantic, often visual-spatial, properties (e.g. a flat hand to represent the flat, rectangular shape of a book, or an extended index finger to represent the long, thin shape of a pen). Furthermore, the location and movement of the hands in sign space corresponds topographically to the location and motion of referents. For example, to represent three books lying next to each other on a table, a signer may place a flat hand successively in three different, proximate locations in sign space, as shown in Figure 19.2.

Signers can use the topographic function of sign space to create very complex spatial representations. Emmorey and Tversky (2002), for example, discuss signers' use of space to describe the topographic layout of a convention center or a town. To do so, signers can use different styles of topographic mapping, depending on how the space is conceptually viewed. As described by Emmorey and Tversky (2002), a signer can either adopt a *survey* perspective, giving a bird's eye view of the layout, or present the spatial layout as if taking a tour through the space itself, adopting a *route* perspective (cf. the discussion of signing perspective in section 4 below).

2.3. Processing evidence for the different function of syntactic and topographic loci

Emmorey, Corina, and Bellugi (1995) provide evidence from language processing for the differential function of topographic versus syntactic (or purely referential) uses of space. In a memory task, signers were better at remembering spatial locations that encoded locative information (i.e. exhibiting a topographic function) than those that encoded only grammatical information (i.e. exhibiting a syntactic function). Similarly, performance in a task that required deciding whether a probe sign had appeared in an immediately preceding American Sign Language (ASL) sentence revealed a dissociation between the syntactic and topographic functions of space. The ASL sentences used locations either syntactically or topographically and the probe signs were presented in locations that were either congruent or incongruent with locations used in the senten-

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ces. The results showed that signers were most impaired in speed and accuracy when the probe sign appeared in an incongruent location within a topographic context. This suggests that semantically relevant topographic locations are processed differently from arbitrarily chosen syntactic locations. The authors argue that topographic locations may be more explicitly encoded, e.g. including other spatial information like orientation and the relative positions of other referents. In addition, MacSweeney et al. (2002) and Emmorey et al. (2002) provide evidence, in comprehension and production respectively, for the involvement of brain areas specialized for spatial processing in sign language constructions that make use of topographic functions of space.

2.4. Integrated function of syntactic and topographic loci

Emmorey et al. (1995), however, also emphasize that the two functions of sign space are not mutually exclusive, noting that it is an issue of how a location functions within sign space, and not of two distinct types of sign space (as is suggested by Poizner et al. 1987). Depending on how it is used, the same location can function both syntactically (or referentially) and topographically. For example, a signer could use a classifier predicate to establish a referent, e.g. a colleague, at a certain (topographic) location in sign space, e.g. seated at her desk. Subsequently, the signer could direct a verb sign, e.g. ASK, to the same location, specifying the colleague as the grammatical object of the predicate (see Liddell (1990, 318) for a similar example). In this example, the location associated with the colleague is functioning syntactically (or referentially) and topographically at the same time. The colleague is still conceived of as seated at her desk at the time she is asked a question. Although they recognize this double function of loci in sign space, Emmorey et al. (1995) nevertheless maintain a clear distinction between the two functions, arguing that loci do not necessarily convey topographic, or spatially relevant, information. They note that "when space operates in the service of grammatical functions, the spatial relation between the loci themselves is irrelevant" (1995, 43).

Other researchers, in particular Liddell (1990, 1995, 1998, 2003) and van Hoek (1992, 1996), propose a more strongly integrated view of the double function of spatial loci, and have argued against maintaining a distinction between them. Van Hoek argues that the use of space to create relationships between referents and loci is never truly abstract (or arbitrary). Loci in sign space do not necessarily refer to the physical location of referents (although van Hoek suggests this may be the prototype of spatial reference), but reflect a more broadly defined conceptual location, in which referents are conceived of within particular contexts, situations, or settings. Van Hoek's analysis draws on the theory of *mental spaces* (Fauconnier 1985, 1994), which are conceptual structures containing all elements relevant to meaning construction in a particular context, including background and world knowledge about referents. In this sense, a location in sign space is associated not simply with a referent, but with a mental space, and thus the location "may invoke not only the conception of a referent, but the conception of the situation in which the referent is involved" (van Hoek 1992, 185). Furthermore, it is not only the particular situation that is relevant, but also other factors like the perceptual and conceptual saliency of the referent, the current location of the referent, and the discourse focus (van Hoek 1992).

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Similarly, Liddell argues that the use of space to indicate non-present referents functions fundamentally in the same way as for present referents. The association of a location in sign space with an entity is in fact an indication of that entity's conceptual location. Liddell maintains that all signs which refer to locations in sign space, i.e. directional predicates, pronouns, and classifier predicates, use space in the same way, and questions any notion of separability of the two functions of spatial loci. Liddell (1995 and subsequent) develops *mental spaces* and *conceptual blending* theories (Fauconnier 1985; Fauconnier/Turner 1996) as the basis for meaning construction in sign space (see also Dudis 2004). Conceptual blending is a process that operates over mental spaces, in which selected properties from two input mental spaces get projected onto a new, blended mental space. In a blend analysis of sign, the input spaces are (i) real space (i.e. the immediate environment, including sign space) and (ii) the conceptual representation of the event or situation to be described. In the blends that are created in sign space, elements from conceptual space are projected onto the real space (as sign space), and get mapped onto the signer's hands and body (visible) and onto locations in sign space (non-visible). Loci in sign space that are associated with particular referents are thus blended elements, and as such are interpreted as existing within a certain spatio-temporal context.

3. Discourse-level structuring of sign space

This section focuses not on the functions of individual spatial loci in sign space, but rather on the conventions by which signers decide how to structure sign space. In creating arrays of referent-location associations in sign space, the expression of locative relations between referents is only one of many relevant issues. Signers are guided in the meaningful structuring of sign space by semantic and pragmatic considerations (Engberg-Pedersen 1993) as well as by principles of discourse cohesion (Winston 1991, 1995). Thus, even beyond an interpretation of loci as representing actual physical or more broadly conceived contextual locations of referents, the choice of spatial loci in sign space is hardly ever arbitrary.

Engberg-Pedersen (1993) recognizes that a signer's choice of loci is motivated by a variety of factors, including semantic and spatial relationships between referents, as well as a signer's attitude toward referents. In addition to what she calls the *iconic convention*, in which the locative relationships between referents are reflected in the choice of spatial loci, she proposes several further semantic-pragmatic conventions for structuring sign space. According to the convention of *semantic affinity*, referents that are semantically related to each other, e.g. through a possessive relationship, are represented at the same locus in sign space. Semantic affinity overlaps with the convention of *canonical location*. A referent can be associated with a location typically associated with that referent, e.g. the city in which a person lives, even if he or she is not in that city at the time of utterance.

Other conventions have less to do with the relationships between referents themselves and are instead more reflective of the signer's attitude towards or assessment of referents being talked about. Engberg-Pedersen observes that signers can express *point of view* in their choice of loci for different referents by using locations proximal and

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distal to the body on a diagonal axis. Signers tend to locate disliked referents at a location further from the body, and place referents with which they empathize close to the body. For example, in discussing two movies, one liked and one disliked, a signer might underscore her adverse opinion by placing the disliked movie at a distal location, while choosing a location close to the body for the favored movie. Were the signer comparing two movies she was equally fond of, she would tend instead to use the left-right lateral axis, giving equal, but contrastive, status to the two movies. The use of the lateral axis for juxtaposing two referents (or two sets of related referents) falls under the *convention of comparison*. Finally, Engberg-Pedersen notes that the choice of loci is influenced by the *authority convention*. A signer may locate referents to whom she attributes authority, e.g. a boss or government official, higher up in space than other referents with less authority.

Winston (1991, 1995) and Mather and Winston (1998) discuss the contrastive use of sign space on a discourse level in terms of *spatial mapping*. Here, sign space structuring achieves discourse cohesion by mapping different discourse themes onto different areas of sign space. Morphosyntactically, this is accomplished with devices associated with the creation of spatial loci: directional verbs, classifier predicates, pointing signs, as well as the spatial displacement of citation form signs. The visual-spatial modality allows signers to create a visual representation of discourse structure. This, in turn, provides addressees with powerful cues to the structure of discourse, aiding meaning comprehension through visual information chunking. For example, in their analysis of spatial mapping in an ASL narrative, Mather and Winston (1998) observe that the narrator creates two main discourse spaces in sign space, one for inside a house and one for outside it. These main spaces are further subdivided to elaborate subtopics related to either of the main spaces, e.g. to describe events that take place inside or outside the house, respectively. It is important to note that spatial mapping refers not only to the mapping of concrete entities, but also of abstract ideas and notions. In this way, discourse cohesion is visually reinforced for events in which referents engage, but also for reporting their inner monologues or thoughts.

4. Structuring sign space for event representation: Signing perspective and classifier predicates

In the sections above, referent location has been discussed in connection with the topographic use of sign space. The depiction of referent location is often coupled with the depiction of referent motion and action in signed discourse − particularly in event narratives. In describing complex events, narrators convey information about referents acting and interacting within a spatial setting, thereby constructing a representation of the event space in which an event takes place. To achieve this, signed narratives rely to a large extent on the use of *signing perspective* together with the use of *classifier predicates*, which encode spatial and action information about referents by representing the referent as a whole (with *entity* classifiers) or by representing the manipulation of a referent (with *handling* classifiers). This section will focus on the relationship between perspective and classifier predicates in structuring sign space for event representation.

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4.1. Signing perspective

Signing perspective refers to the way in which an event space (real or imagined) is mapped or *projected* onto sign space, and is thus significant in determining how sign space is structured for spatial representation. There are two ways in which this projection can take place, depending on the signer's conceptual location, or vantage point, in relation to the event space. In one case, the signer is construed as external to the event space. In this *observer perspective*, the whole event space is projected onto the area of sign space in front of the body, providing a global view of the event space. In the other case, the signer is internal to the event space, in the role of a character within the event. This gives the signer a *character perspective* on the event space, which is conceived of as life-sized, encompassing and surrounding the signer. Entities in the event space are mapped onto sign space as seen by the character mapped onto the signer's body (Perniss 2007a; Perniss/Özyürek 2008; Özyürek/Perniss 2011). Figure 19.3 gives a schematic depiction of the event space as projected onto sign space from (a) an observer's perspective and (b) a character's perspective (see Fridman-Mintz/Liddell (1998) for the use of similar schematic depictions, where a wavy line area surrounding the signer indicates *surrogate space* and a semi-circle area in front of the signer indicates *token space*).

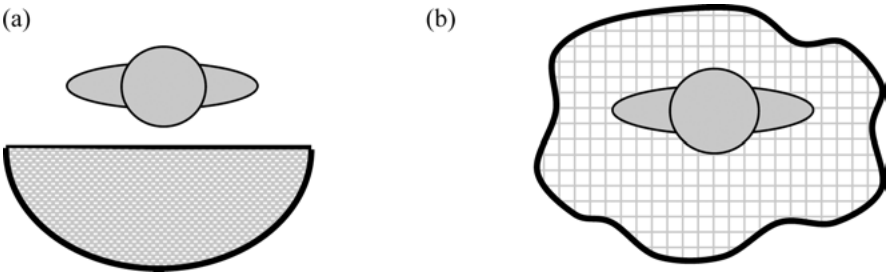

Fig. 19.3: Example of event space projection from (a) *observer perspective*, where the whole of event space is mapped onto the area of space in front of the signer's body, and from (b) *character perspective*, where the signer is within the event space, in the role of a character in the event.

The two types of signing perspective − *observer* and *character* − have been described along similar lines, with different names, by numerous researchers: *model* and *real-world space* (Schick 1990); *diagrammatic* and *viewer spatial format* (Emmorey/Falgier 1999); *fixed* and *shifted referential framework* (Poizner et al. 1987; Morgan 1999); *token* and *surrogate space* (Liddell 1995, 1998); *depictive* and *surrogate space* (Liddell 2003); *narrator* and *protagonist perspective* (Slobin et al. 2003); *global* and *participant viewpoint* (Dudis 2004); *diagrammatic* and *viewer space* (Pyers/Senghas 2007). Moreover, a similar distinction has been made in gesture research for iconic gestures made from either an *observer* or *character viewpoint* (McNeill 1992).

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4.2. The relationship between signing perspective and classifier predicates

The relationship between signing perspective and classifier predicates, stated implicitly or explicitly, can be framed in various ways. In terms of argument structure and verb semantics, there is a systematic correspondence between *entity* classifiers and *intransitive* verbs, on the one hand, and between *handling* classifiers and *transitive* verbs, on the other hand (cf. Engberg-Pedersen 1993; McDonald 1982; Supalla 1986; Zwitserlood 2003). In each case, the handshape (or classifier) of the predicate encodes the theme argument of the verb. With entity classifiers, the position/movement of the hands in sign space directly encodes the intransitive location/motion of entities in the event space, corresponding to the event-external vantage point of observer perspective. With handling classifiers, the transitive motion of entities is represented on the hands through a depiction of agentive manipulation, corresponding to the event-internal vantage point of character perspective (see chapter 8, Classifiers, for details).

The relationship between perspective and classifiers can also be characterized in terms of the interplay of articulatory and semantic constraints, that is, constraints on the type of information that certain forms are able to felicitously represent. For example, the so-called 2-legged entity classifier (index and middle finger extended, fingers pointing downward) has properties that correspond to features (or facets) of the human body: the extended fingers correspond to the legs, the tips of the fingers correspond to the feet, and the back side of the fingers corresponds to the front of the body (as shown in still 1 of Figure 19.4a). In addition to simple location and motion, these properties allow signers to represent postural information (e.g. lying vs. standing), direction of movement (e.g. forward vs. backward), as well as manner of locomotion (e.g. walking vs. jumping). Similarly, the so-called upright entity classifier (index finger extended, pointing upward) is used to represent human beings, as the long, upright shape of the finger corresponds to the upright form of the human figure (as shown in still 1 of Figure 19.4b). By convention, this handshape can also encode orientation, by mapping the front of the body onto the front (inside surface) side of the finger.

However, neither of these two entity classifiers includes features that correspond to the human figure's arms or head, and they are thus not suited for the expression of manual activity. To depict the manual manipulation, or manner of handling, of a referent, the signer's hands have to function as hands, imitating the actual manual activity. Expressions of this type of information appropriately involve the use of handling classifiers and imply a character perspective representation (Perniss 2007c; Perniss/Özyürek 2008; Özyürek/Perniss 2011). Figure 19.4 shows the use of entity classifiers to depict the location (in (a), still 1) and motion (in (b), still 1) of referents, and the subsequent use of handling classifiers to depict the respective manual activity of the referent (in still 2 of (a) and (b)) in its location or along its path. While the use of the entity classifiers in the examples occurs in an event space projected from an external observer's perspective, the handling classifiers occur in a character perspective space in which the signer embodies the referent. In (a), the signer is depicting an animate referent standing at a stove, holding a pan. In still 1, the signer uses a 2-legged entity classifier to represent the referent's location and orientation. In still 2, the signer uses a grasping handshape to represent the referent holding the pan. In (b), the signer represents an animate referent walking while dribbling a ball. In still 1, the signer

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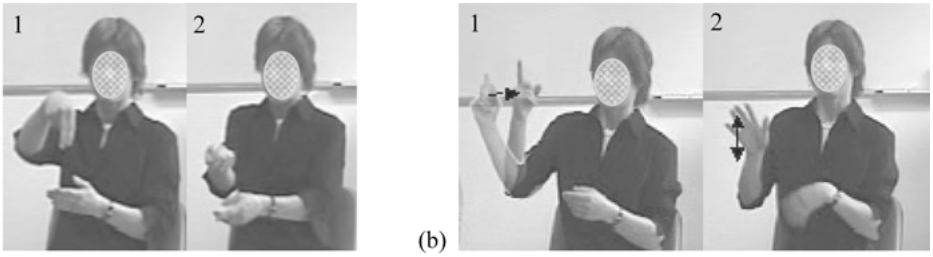

Fig. 19.4 Examples of prototypically aligned classifier-perspective constructions: Entity classifier predicate in an observer perspective event space projection (still 1 of (a) and (b)); Handling classifier predicate in a character perspective event space projection (still 2 of (a) and (b)). The examples are from German Sign Language (DGS).

represents the path motion of the referent, and then represents the referent dribbling the ball in still 2.

The correspondence between the use of entity classifiers and observer perspective, on the one hand, and handling classifiers and character perspective, on the other hand, can also be motivated by a principle of *scale iconicity*, whereby different parts of a representation should have the same size, insuring an internal consistency in scale within the event space projection (Perniss 2007c). In observer perspective, the event space is reduced in size, and the scale of referent representation within the event space is correspondingly small. In contrast, the event space in character perspective is life-sized, and referents within the event are equally represented on a life-sized scale. Based on the notion of scale iconicity, specifically the match between the size of referent projection and the size of event projection, the correspondences between perspective and classifiers can be formulated in terms of prototypical *alignments* (Perniss 2007a, 2007b; Perniss/Özyürek 2008; Özyürek/Perniss 2011). The predicates in Figure 19.4 are all examples of prototypically aligned classifier-perspective constructions.

4.3. Choice of signing perspective

As described above, the choice of perspective within a narrative depends to a considerable degree on the type of information to be expressed. The perspective from which an event space is projected also bears on the localization of referents in sign space. That is, the way in which sign space is structured depends on whether referents are 'seen' from the perspective of an external observer or from the perspective of an event protagonist. Let us take the example of two animate referents standing opposite each other in a particular spatial setting. In observer perspective, where the signer is not part of the event, the canonical locations (assuming equal discourse status) for the two referents are opposite each other on the lateral axis, on the left and right sides of the signer's body (cf. the discussion of Engberg-Pedersen's (1993) semantic-pragmatic conventions for structuring sign space in section 3 above). In character perspective, however, the signer is a character within the event, taking on the role of one of the animate referents. The location of one referent thus coincides with the location of the

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signer's body. The other referent, located opposite conceptually, must thus be mapped onto sign space at a location opposite the signer's body. Figure 19.5 gives a schematic representation of canonical referent locations in observer and character perspective event space projections. These correspondences are evident, for example, in the predicates in Figure 19.4b. The movement of the entity classifier (in still 1) is along the lateral axis (corresponding to the direction of motion observed). The handling classifier, in contrast, is directed forward, along the sagittal axis.

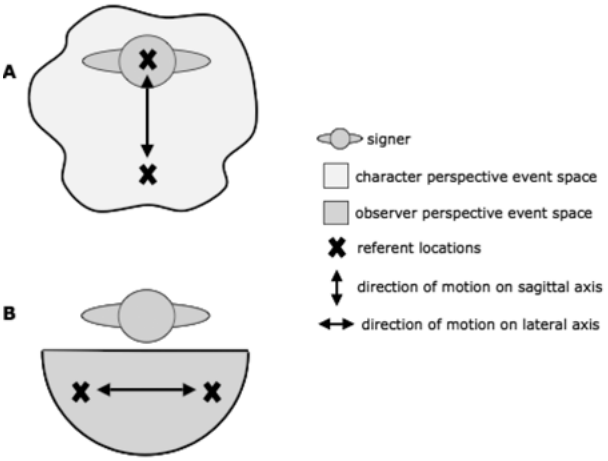

Fig. 19.5: Schematic representation of canonical referent locations in an event space projected from (A) character perspective and (B) observer perspective.

This means that depending on the use of perspective, the same referent can be associated with different locations in sign space. This affects how sign space is structured and may have implications for discourse coherence. The combinations of perspective and classifier predicates found in extended discourse are much more varied than the prototypical alignments described above. The co-occurrence of different classifier forms with different perspectives thus motivates the existence of *aligned* and *non-aligned* classifier-perspective construction types. As described, there are two kinds of the aligned classifier-perspective construction type: entity classifiers in observer perspective, on the one hand, and handling classifiers in character perspective, on the other hand. There are also two kinds of the non-aligned classifier-perspective construction type, which are the converse combinations: entity classifiers in character perspective, on the one hand, and handling classifiers in observer perspective, on the other hand. These are summarized in Table 19.1.

Examples of non-aligned construction types are shown in Figure 19.6. In (a), the signer uses an entity classifier (on the right hand) to place an animate referent, in a prone posture, in a location along the sagittal axis, opposite the body. The event space is projected from − and thus the entity classifier referent is depicted within − the character perspective of the referent mapped onto the signer's body. This referent is holding a ball (on the left hand; see section 5 on simultaneous constructions) and is

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Tab. 19.1: Classifier predicate and signing perspective correspondences in *aligned* and *non-aligned* classifier-perspective construction types.

Construction type	Classifier predicate	Signing perspective
Aligned	Entity classifier	Observer perspective
	Handling classifier	Character perspective
Non-aligned	Entity classifier	Character perspective
	Handling classifier	Observer perspective

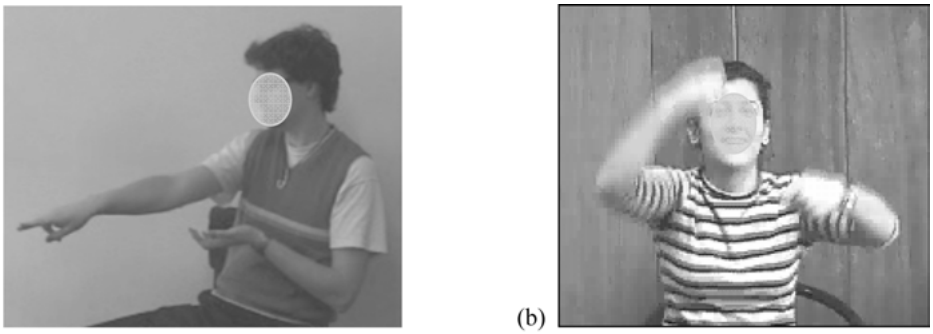

Fig. 19.6: Examples of non-aligned classifier-perspective constructions: (a) Entity classifier predicate in a character perspective event space projection (German Sign Language, DGS); (b) Handling classifier predicates in an observer perspective event space projection (Turkish Sign Language, TİD).

facing the referent lying down. In (b), the signer depicts two animate referents standing across from each other, holding pans and flipping a pancake back and forth between them. The referent locations correspond to an observer perspective representation of the event space, but the signer uses handling classifiers, prototypically associated with character perspective, to represent the referents' activity. The hands are oriented in order to depict the flipping along the lateral axis. In an aligned character perspective representation, only one referent (character) would be depicted at a time, and the hand would be directed forward, as in the actual activity. Classifier predicates and signing perspective are used as spatial devices in almost all sign languages that have been studied to date (an exception is Adamorobe Sign Language (AdaSL), a village sign language used in Ghana, in which the use of entity classifiers is not attested (Nyst 2007a); also see chapter 24, Shared Sign Languages). Thus, different classifier-perspective construction types − i.e. aligned and non-aligned, as well as more complex combinations and fusions of perspective (see section 5 on the simultaneous use of perspectives) − should theoretically exist in all sign languages. However, the frequency of use, or distribution of occurrence, of different construction types may differ significantly between sign languages (see section 6 on typological differences between sign languages).

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5. Structuring sign space with multiple articulators: Simultaneous constructions

The availability of multiple, independent articulators is a further factor that impacts on the use of space, specifically, on how sign space is structured to refer to and represent referents. *Simultaneous constructions* have been defined as representations that are produced with more than one articulator, whereby each articulator bears distinct and independent meaning units, which stand in some semanto-syntactic relationship to each other (Engberg-Pedersen 1994; Leeson/Saeed 2007; Miller 1994; Vermeerbergen 2001; Vermeerbergen/Leeson/Crasborn 2007).

Much of the research on simultaneous constructions focuses on the use of the two manual articulators, and numerous different functions of bimanual simultaneous constructions have been identified. Their functions can be categorized into two main groups, based on whether they reflect perceptual structure or discourse structure. Simultaneous constructions can also involve articulators other than the hands, for example, the eyes, face, or torso (Aarons/Morgan 2003; Dudis 2004; Liddell 1998, 2000; Perniss 2007b). The simultaneous use of manual and non-manual articulators often occurs to express elements associated with different perspectives, and has likewise been associated with different functions.

Simultaneous constructions that reflect discourse structure are used primarily to guide the procession of discourse. In this sense, they lie outside the focus of this chapter. For example, signers can use simultaneous constructions in listing contexts, where one hand is used to enumerate while the other hand identifies the list items (cf. Liddell's (2003) *pointer buoy*). Signers can also exploit the affordance of simultaneity to create topic-comment structures, visually maintaining a discourse topic in sign space on one hand, while the other hand 'comments' on it.

In simultaneous constructions that reflect perceptual structure, the two hands express information about the spatial and/or temporal organization of an event. Sign space is structured to represent the simultaneity of spatial and temporal relationships between referents, both static and moving, and using both entity and handling classifiers. For example, two entity classifiers used within a simultaneous construction can depict the spatial relationship between a person and a table (e.g. a person standing at a table) (as shown in Figure 19.7). Similarly, two handling classifiers can depict the temporal simultaneity of two events, e.g. holding open a cupboard door while retrieving a cup from the cupboard. These constructions contain what Engberg-Pedersen (1993, 1994) analyzes as a *hold*-morpheme. The *hold*-morpheme is typically associated with the ground referent or the backgrounded event (and is typically signed with the non-dominant hand). In addition, the *hold*-morpheme is neutral with respect to the semantic distinction between location and motion, such that when the interaction between two moving referents (e.g. two basketball players) is depicted in sign space, only the foregrounded referent is associated with a movement morpheme (Engberg-Pedersen 1993, 284).

The simultaneous representation of aspects of events associated with different perspectives, and involving both manual and non-manual articulators, has not been widely discussed in the literature to date, yet it is recognized as a frequent phenomenon in

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Fig. 19.7: Example of a simultaneous classifier construction. Two entity classifier predicates are used simultaneously to depict the spatial relationship of a person standing at a table (German Sign Language, DGS).

narratives by those researchers who have studied it (e.g. Aarons/Morgan 2003; Dudis 2004; Engberg-Pedersen 1993; Hendriks 2008; Liddell 1998, 2000, 2003; Morgan 2002; Perniss 2007a, 2007b, 2007c). Different functions have been attributed to such representations, and they have been labeled in different ways. Aarons and Morgan (2003) describe the use of 'multiple perspective representations', while Dudis and Liddell characterize the creation of 'simultaneous blends'. For these authors, the depiction of different aspects of an event in different perspectives functions mainly to give a richer, more detailed representation of the event. For example, both Dudis (2004) and Liddell (2000) give an example from ASL in which a signer simultaneously represents a vehicle on one hand and the driver of the vehicle on the body. A 'zoomed out', or observer perspective, view of the scene is exhibited in the use of an entity classifier to depict, in Liddell's example, a car stopped at an intersection, and in Dudis' example, a motorcycle going up a hill. By mapping the drivers of the vehicles onto the body, the signer can simultaneously depict their facial expressions and behaviors (e.g. the driver of the car looking both ways before crossing the intersection) through a 'zoomed in' or character perspective view of the scene. Aarons and Morgan (2003) describe a similar construction from South African Sign Language (SASL) in which a signer maps a parachutist floating through the air simultaneously onto his hand and onto his body. Perniss uses the terms "simultaneous perspective constructions" (2007a,b) and 'double-perspective constructions' (2007c). She attributes to these constructions two separate functions: (i) achieving a full, semantic specification of an event, and (ii) creating a mapping between two event space projections (one from observer and one from character perspective). Hendriks (2008) discusses the use of 'multiple perspectives' in Jordanian Sign Language (LIU), mentioning their function of clarifying a positional relationship. She gives the example of a signer using two entity classifiers to depict one animal jumping onto the neck of another animal. The signer does this by moving one entity classifier (2-legged entity classifier) onto the other entity classifier, specifically onto the back of the other hand. She then additionally represents the jumping movement by moving the entity classifier onto her own neck and head. In doing so, she clarifies the nature of the spatial relationship between the two referents.

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6. Typological perspective: Use of sign space across sign languages

The use of spatial devices for structuring sign space – including the use of classifier predicates, directional verbs, and pointing signs – has been assumed to be similar across sign languages, due to the assumption that the iconic potential of the visual-spatial modality creates a homogenizing effect on spatial structure (Aronoff/Meir/Sandler 2005; Meier 2002; Talmy 2003). To date, however, very little cross-sign-linguistic research on the use of sign space for referent representation has actually been conducted. Moreover, there is comparatively little research on less well-known and unrelated sign languages, as well as a lack of research on sign language usage in actual discourse situations.

However, these gaps in research are beginning to be filled. More, as well as more geographically diverse, sign languages are being studied, enriching the field of sign linguistics through an accumulation of data and knowledge about sign language lexica and grammars. Cross-linguistic and typological investigations are also growing in popularity, with researchers embarking on long-term and large-scale projects aimed at uncovering the range of structural variation possible within the visual-spatial language modality (e.g. Perniss/Pfau/Steinbach 2007; Zeshan 2006; Zeshan/Perniss 2008; Wilbur 2006).

Investigations into the use of space, the domain of interest in the current chapter, in different sign languages have also begun to surface recently (Aronoff et al. 2003, 2005; Liddell/Vogt-Svendsen/Bergman 2007; Nyst 2007a,b; Perniss/Özyürek 2008; Pyers/Senghas 2007; Özyürek/Perniss 2011). It is this domain, in particular, where modality effects are widely considered to create similarities across sign languages (see also Cuxac 1999; Sallandre/Cuxac 2002). In fact, some research on the use of classifier predicates has found striking similarities in the representation of spatial information across different sign languages (e.g. Aronoff et al. 2003, 2005). However, other comparative research has shown that significant differences exist between sign languages in the use of space (e.g. Arik 2009; Perniss/Özyürek 2008; Pyers/Senghas 2007). Such results suggest that language-specific constraints are involved in shaping the influence of the modality's iconic properties, and that this domain may exhibit more variation than previously thought.

For example, Perniss and Özyürek (2008) and Özyürek and Perniss (2011) found differences in the use of classifier-perspective constructions, specifically, in the distribution of use of non-aligned construction types, between German Sign Language (DGS) and Turkish Sign Language (TİD), as well as differences in the way the two perspectives were combined into single constructions. While TİD signers used handling classifiers quite frequently in an observer perspective event space projection (as shown in Figure 19.6b), this non-aligned construction type was not used at all by DGS signers in the data set compared. Conversely, the use of entity classifiers in a character perspective event space was used abundantly by DGS signers (as shown in Figure 19.6a), but comparatively rarely by TİD signers. Nyst (2007a) found that AdaSL, in contrast to other TİD sign languages studied to date, does not make use of entity classifiers to express location and motion events. Instead, AdaSL signers use character perspective representations together with generic directionals and intransitive motion markers. For example, to represent the upward climbing motion of an animate referent, AdaSL

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signers combine a predicate GUAN (meaning 'run') with a generic directional UP. In combination with a directional, the predicate GUAN functions to mark an intransitive motion event (Nyst 2007a). Finally, Pyers and Senghas (2007) found differences in the devices used to mark referential shift between ASL and Nicaraguan Sign Language, including differences in the use of the body to indicate role-taking and in the use of pointing signs to indicate referents.

7. Summary and outlook

This chapter has described the semantic and pragmatic uses of sign space, explaining the different ways in which locations in sign space are given meaning, and the use of different spatial devices in structuring sign space. The chapter first provided an overview of the syntactic and topographic uses of space, showing that referent-location associations in sign space can either reflect the real-world locations of referents (providing information about spatial configuration), or be chosen independently of actual locations, simply in order to mark syntactic relations. While there is evidence that these two uses of space are treated differently in processing, many researchers have shown that the choice of locations in sign space is never really arbitrary, but rather motivated by semantic-pragmatic conventions and principles of discourse cohesion.

The chapter then described the use of signing perspective and classifier predicates, two primary spatial devices used for structuring sign space for event representation, especially of referent location, motion, and action. It described the relationship between classifier predicates and signing perspective and motivated the existence of different classifier-perspective construction types, including the use of simultaneous constructions and, in particular, the simultaneous use of different perspectives. Finally, the issue of sign language typology was discussed, focusing on the possibilities of variation between sign languages in the use of sign space.

Future research will continue to uncover similarities and differences between sign languages in the use of sign space, leading us to a better understanding of the influence of modality on language structure, as well of the potential for language-specific variation given similar mophosyntactic structures and resources.

8. Literature

Aarons, Debra/Morgan, Ruth
2003 Classifier Predicates and the Creation of Multiple Perspectives in South African Sign Language. In: *Sign Language Studies* 3(2), 125–156.

Arik, Engin
2009 *Spatial Language: Insights from Sign and Spoken Languages.* PhD Dissertation, Purdue University, West Lafayette, IN.

Aronoff, Mark/Meir, Irit/Padden, Carol A./Sandler, Wendy
2003 Classifier Constructions and Morphology in Two Sign Languages. In: Emmorey, Karen (ed.), *Perspectives on Classifier Constructions in Sign Languages.* Mahwah, NJ: Lawrence Erlbaum, 53–84.

Bereitgestellt von | De Gruyter / TCS
Angemeldet | 212.87.45.97
Heruntergeladen am | 29.11.12 17:38

Aronoff, Mark/Meir, Irit/Sandler, Wendy
2005 The Paradox of Sign Language Morphology. In: *Language* 81(2), 301–344.
Cuxac, Christian
1999 French Sign Language: Proposition of a Structural Explanation by Iconicity. In: Braffort, Annelies/Gherbi, Rachid/Gibet, Sylvie/Richardson, James/Teil, Daniel (eds.), *Lecture Notes in Artificial Intelligence. Proceedings of the 3rd Gesture Workshop '99 on Gesture and Sign Language in Human-Computer Interaction.* Berlin: Springer, 165–184.
Dudis, Paul
2004 Body Partitioning and Real-space Blends. In: *Cognitive Linguistics* 15(2), 223–238.
Emmorey, Karen/Corina, David/Bellugi, Ursula
1995 Differential Processing of Topographic and Referential Functions of Space. In: Emmorey, Karen/Reilly, Judy S. (eds.), *Language, Gesture, and Space*. Hillsdale, NJ: Lawrence Erlbaum, 43–62.
Emmorey, Karen/Falgier, Brenda
1999 Talking About Space with Space. In: Winston, Elizabeth A. (ed.), *Story Telling and Conversation: Discourse in Deaf Communities.* Washington, DC: Gallaudet University Press, 3–26.
Emmorey, Karen/Damasio, Hanna/McCullough, Stephen/Grabowski, Thomas/Ponto, Laura L.B./Hichwa, Richard D./Bellugi, Ursula
2002 Neural Systems Underlying Spatial Language in American Sign Language. In: *NeuroImage* 17, 812–824.
Emmorey, Karen/Tversky, Barbara
2002 Spatial Perspective Choice in ASL. In: *Sign Language & Linguistics* 5(1), 3–25.
Engberg-Pedersen, Elisabeth
1993 *Space in Danish Sign Language: The Semantics and Morphosyntax of the Use of Space in a Visual Language.* Hamburg: Signum.
Engberg-Pedersen, Elisabeth
1994 Some Simultaneous Constructions in Danish Sign Language. In: Brennan, Mary/Turner, Graham H. (eds.), *Word-order Issues in Sign Language.* Durham: ISLA, 73–87.
Fauconnier, Gilles
1985 *Mental Spaces.* Cambridge, MA: MIT Press.
Fauconnier, Gilles
1994 *Mental Spaces. Aspects of Meaning Construction in Natural Language.* Cambridge: Cambridge University Press.
Fauconnier, Gilles/Turner, Mark
1996 Blending as a Central Process of Grammar. In: Goldberg, Adele E. (ed.), *Conceptual Structure, Discourse, and Language.* Stanford, CA: CSLI, 113–130.
Fridman-Mintz, Boris/Liddell, Scott K.
1998 Sequencing Mental Spaces in an ASL Narrative. In: Koenig, Jean-Pierre (ed.), *Discourse and Cognition: Bridging the Gap*. Cambridge: Cambridge University Press, 255–268.
Hendriks, Bernadet
2008 *Jordanian Sign Language: Aspects of Grammar from a Cross-linguistic Perspective*. PhD Dissertation, University of Amsterdam. Utrecht: LOT.
Hoek, Karen van
1992 Conceptual Spaces and Pronominal Reference in American Sign Language. In: *Nordic Journal of Linguistics* 15, 183–199.
Hoek, Karen van
1996 Conceptual Locations for Reference in American Sign Language. In: Fauconnier, Gilles/Sweetser, Eve (eds.), *Spaces, Worlds, and Grammar*. Chicago, IL: University of Chicago Press, 334–350.

Bereitgestellt von | De Gruyter / TCS
Angemeldet | 212.87.45.97
Heruntergeladen am | 29.11.12 17:38

Klima, Edward S./Bellugi, Ursula
1979 *The Signs of Language.* Cambridge, MA: Harvard University Press.
Leeson, Lorraine/Saeed, John
2007 Conceptual Blending and the Windowing of Attention in Simultaneous Constructions in Irish Sign Language. In: Vermeerbergen, Myriam/Leeson, Lorraine/Crasborn, Onno (eds.), *Simultaneity in Signed Languages: Form and Function*. Amsterdam: Benjamins, 55–72.
Liddell, Scott K.
1990 Four Functions of a Locus: Reexamining the Structure of Space in ASL. In: Lucas, Ceil (ed.), *Sign Language Research: Theoretical Issues.* Washington, DC: Gallaudet University Press, 176–198.
Liddell, Scott K.
1995 Real, Surrogate and Token Space: Grammatical Consequences in ASL. In: Emmorey, Karen/Reilly, Judy S. (eds.), *Language, Gesture, and Space.* Hillsdale, NJ: Lawrence Erlbaum, 19–41.
Liddell, Scott K.
1998 Grounded Blends, Gestures, and Conceptual Shifts. In: *Cognitive Linguistics* 9(3), 283–314.
Liddell, Scott K.
2000 Blended Spaces and Deixis in Sign Language Discourse. In: McNeill, David (ed.), *Language and Gesture: Window Into Thought and Action*. Cambridge: Cambridge University Press, 331–357.
Liddell, Scott K.
2003 *Grammar, Gesture, and Meaning in American Sign Language.* Cambridge: Cambridge University Press.
Liddell, Scott K./Vogt-Svendsen, Marit/Bergman, Brita
2007 A Cross-linguistic Comparison of Buoys. Evidence from American, Norwegian, and Swedish Sign Language. In: Vermeerbergen, Myriam/Leeson, Lorraine/Crasborn, Onno (eds.), *Simultaneity in Signed Languages: Form and Function*. Amsterdam: Benjamins, 187–215.
Lillo-Martin, Diane/Klima, Edward S.
1990 Pointing out Differences: ASL Pronouns in Syntactic Theory. In: Fischer, Susan D./Siple, Patricia (eds.), *Theoretical Issues in Sign Language Research. Vol. 1: Linguistics.* Chicago: University of Chicago Press, 191–210.
MacSweeney, Mairead/Woll, Bencie/Campbell, Ruth/Calvert, Gemma A./McGuire, Philip K./David, Anthony S./Simmons, Andrew/Brammer, Michael J.
2002 Neural Correlates of British Sign Language Processing: Specific Regions for Topographic Language? In: *Journal of Cognitive Neuroscience* 14(7), 1064–1075.
Mather, Susan/Winston, Elizabeth A.
1998 Spatial Mapping and Involvement in ASL Storytelling. In: Lucas, Ceil (ed.), *Pinky Extension and Eye Gaze: Language Use in Deaf Communities.* Washington, DC: Gallaudet University Press, 183–210.
McDonald, Betsy
1982 *Aspects of the American Sign Language Predicate System.* PhD Dissertation, State University of New York, Buffalo.
McNeill, David
1992 *Hand and Mind: What Gestures Reveal About the Mind.* Chicago: University of Chicago Press.
Meier, Richard P.
2002 Why Different, Why the Same? Explaining Effects and Non-effects of Modality Upon Linguistic Structure in Sign and Speech. In: Meier, Richard P./Cormier, Kearsy/Quinto-Pozos, David (eds.), *Modality and Structure in Signed and Spoken Languages.* Cambridge: Cambridge University Press, 1–25.

Bereitgestellt von | De Gruyter / TCS
Angemeldet | 212.87.45.97
Heruntergeladen am | 29.11.12 17:38

Meir, Irit
2002 A Cross-modality Perspective on Verb Agreement. In: *Natural Language and Linguistic Theory* 20(2), 413–450.
Miller, Chris
1994 Simultaneous Constructions in Quebec Sign Language. In: Brennan, Mary/Turner, Graham H. (eds.), *Word-order Issues in Sign Language.* Durham: ISLA, 89–112.
Morgan, Gary
1999 Event Packaging in British Sign Language Discourse. In: Winston, Elizabeth (ed.), *Story Telling and Conversation: Discourse in Deaf Communities.* Washington, DC: Gallaudet University Press, 27–58.
Morgan, Gary
2002 Children's Encoding of Simultaneity in BSL Narratives. In: *Sign Language & Linguistics* 5(2), 131–165.
Nyst, Victoria
2007a *A Descriptive Analysis of Adamorobe Sign Language (Ghana)*. PhD Dissertation, University of Amsterdam. Utrecht: LOT.
Nyst, Victoria
2007b Simultaneous Constructions in Adamorobe Sign Language (Ghana). In: Vermeerbergen, Myriam/Leeson, Lorraine/Crasborn, Onno (eds.), *Simultaneity in Signed Languages: Form and Function*. Amsterdam: Benjamins, 127–145.
Özyürek, Aslı/Perniss, Pamela
2011 Event Representations in Signed Languages. In: Bohnemeyer, Jürgen/Pederson, Eric (eds.), *Event Representation in Language and Cognition.* Cambridge: Cambridge University Press, 84–107.
Padden, Carol
1990 The Relation Between Space and Grammar in ASL Verb Morphology. In Lucas, Ceil (ed.), *Sign Language Research: Theoretical Issues.* Washington, DC: Gallaudet University Press, 118–132.
Perniss, Pamela
2007a Achieving Spatial Coherence in German Sign Language Narratives: The Use of Classifiers and Perspective. In: *Lingua* 117(7), 1315–1338.
Perniss, Pamela
2007b Locative Functions of Simultaneous Perspective Constructions in German Sign Language Narratives. In: Vermeerbergen, Myriam/Leeson, Lorraine/Crasborn, Onno (eds.), *Simultaneity in Signed Languages: Form and Function*. Amsterdam: Benjamins, 27–54.
Perniss, Pamela
2007c *Space and Iconicity in German Sign Language (DGS).* PhD Dissertation, MPI Series in Psycholinguistics 45, Radboud University Nijmegen.
Perniss, Pamela/Pfau, Roland/Steinbach, Markus (eds.)
2007 *Visible Variation: Cross-linguistic Studies on Sign Language Structure.* Berlin: Mouton de Gruyter.
Perniss, Pamela/Özyürek, Aslı
2008 Constructing Action and Locating Referents: A Comparison of German and Turkish Sign Language Narratives. In: Quer, Josep (ed.), *Signs of the Time. Selected Papers from TISLR 8.* Hamburg: Signum, 353–376.
Poizner, Howard/Klima, Edward S./Bellugi, Ursula
1987 *What the Hands Reveal About the Brain.* Cambridge, MA: MIT Press.
Pyers, Jennie/Senghas, Ann
2007 Referential Shift in Nicaraguan Sign Language: A Comparison with American Sign Language. In: Perniss, Pamela/Pfau, Roland/Steinbach, Markus (eds.), *Visible Variation: Cross-linguistic Studies on Sign Language Structure.* Berlin: Mouton de Gruyter, 279–302.

Bereitgestellt von | De Gruyter / TCS
Angemeldet | 212.87.45.97
Heruntergeladen am | 29.11.12 17:38

Sallandre, Marie-Anne/Cuxac, Christian
2002 Iconicity in Sign Language: A Theoretical and Methodological Point of View. In: Wachsmuth, Ipke/Sowa, Timo (eds.), *Gesture-based Communication in Human-computer Interaction. Proceedings of the International Gesture Workshop (GW 2001)*. Berlin: Springer, 171–180.
Sandler, Wendy/Lillo-Martin, Diane
2006 *Sign Language and Linguistic Universals*. Cambridge: Cambridge University Press.
Schick, Brenda
1990 Classifier Predicates in American Sign Language. In: *International Journal of Sign Linguistics* 1, 15–40.
Slobin, Dan I./Hoiting, Nini/Kuntze, Marlon/Lindert, Reyna/Weinberg, Amy/Pyers, Jennie/Anthony, Michelle/Biederman, Yael/Thumann, Helen
2003 A Cognitive/Functional Perspective on the Acquisition of "Classifiers". In: Emmorey, Karen (ed.), *Perspectives on Classifier Constructions in Sign Languages*. Mahwah, NJ: Lawrence Erlbaum, 271–298.
Supalla, Ted R.
1986 The Classifier System in American Sign Language. In: Craig, Colette (ed.), *Noun Classes and Categorization*. Amsterdam: Benjamins, 181–214.
Talmy, Leonard
2003 The Representation of Spatial Structure in Spoken and Signed Language. In: Emmorey, Karen (ed.), *Perspectives on Classifier Constructions in Sign Languages*. Mahwah, NJ: Lawrence Erlbaum, 169–196.
Vermeerbergen, Myriam
2001 Simultane Constructies in de Vlaamse Gebarentaal. In: Beyers, R. (ed.), *Handelingen (Koninklijke Zuid-Nederlandse Maatschappij voor Taal- en Letterkunde en Geschiedenis)*. Brussels: LIV, 69–81.
Vermeerbergen, Myriam/Leeson, Lorraine/Crasborn, Onno (eds.)
2007 *Simultaneity in Signed Languages: Form and Function*. Amsterdam: Benjamins.
Wilbur, Ronnie B. (ed.)
2006 Investigating Understudied Sign Languages – Croatian SL and Austrian SL, with comparison to American SL. Special Issue of *Sign Language & Linguistics* 9(1/2).
Winston, Elizabeth A.
1991 Spatial Referencing and Cohesion in an American Sign Language Text. In: *Sign Language Studies* 73, 397–410.
Winston, Elizabeth A.
1995 Spatial Mapping in Comparative Discourse Frames. In: Emmorey, Karen/Reilly, Judy S. (eds.), *Language, Gesture, and Space*. Hillsdale, NJ: Lawrence Erlbaum, 87–114.
Zeshan, Ulrike (ed.)
2006 *Interrogative and Negative Constructions in Sign Languages*. Nijmegen: Ishara Press.
Zeshan, Ulrike/Perniss, Pamela (eds.)
2008 *Possessive and Existential Constructions in Sign Languages*. Nijmegen: Ishara Press.
Zwitserlood, Inge
2003 *Classifying Hand Configurations in Nederlandse Gebarentaal (Sign Language of the Netherlands)*. PhD Dissertation, University of Utrecht. Utrecht: LOT.

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