

# Most Characteristic Elements of Sign Language Texts Are Intricate Mixtures of Linguistic and Non-linguistic Parts, Aren't They?

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## Abstract

There is a considerable number of sign language linguists who accept as proven that essential parts of sequential-simultaneous constructions in sign languages (henceforth: SL) are “gestural” and therefore do not have language status, i.e. are “non-linguistic”. This judgement applies to all elements of SL where spatial parameters are used to code indexical and iconic meanings or spatial relations. The respective argumentations contain many methodologically questionable steps and are particularly led by a strong bias towards a spoken language (henceforth: SpL) perspective. This bias includes an uncritical adoption of the results of research on gestures to SL (“uncritical” means that the inconsistencies in gesture research itself were not considered); despite the fact that gesture research was performed exclusively on SpL. Therefore, a discussion of the assumptions and analysis processes concerning SL is urgent. In order to overcome the SpL bias in SL linguistics we need a typological model which takes both SpL and SL as instances of “language” in different modalities. By abstracting from both types of language, a new extended model of “language” can be developed. I will perform my analysis from the perspective of a typological language model which comprises both SL and SpL in equal measure. A comprehensive typology assumes that every language shows those categories which its users select as the best suited for the chosen modality or modalities. It

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cannot devaluate visually appropriate ones against acoustically appropriate ones. By this I want to prove that the assumption of an enormous number of gestural components in SL texts, intricately combined with language elements – concerning essential areas of SL grammar – is untenable.

The methodological shortcomings of the “Gesture School”<sup>1</sup> to be indicated are: The authors neither apply a modality-independent model of language, nor transfer “gradience” and “conventionalisation” to SL conformly to typology and semiotics. Additionally, we find no consideration of:

- the coding conditions and possibilities of SL, especially related to indexical and iconic (in contrast to symbolic) morphemes
- the relation between gradient production and categorical cognitive processing in all languages
- the contrast between listability and the application of rules (by inadequate application of the listability criterion against SL morphemes like classifiers, ignoring the existing grammatical rules for them).

## 1 The Extent of the Issue

### 1.1 Phenomena Evaluated as “Gestural”

The judgement “gestural”/“non-linguistic” concerns:<sup>2</sup>

1. Phenomena of sequentially and/or simultaneously produced, detailed visual codings in verb phrases. Ferrara (2012, 26f) gives the following list of terms used for SL codings involving spatial and/or iconic parameters, therefore containing “non-linguistic” elements: “(multi)directional verbs”, “verbs of motion and location”, “spatial-locative predicates”, “spatially descriptive signs”, “classifier (predicates/constructions)”, “polymorphemic verbs/predicates”, “polycomponential/polysynthetic signs”, “productive signs/lexicon”, “depicting verbs/signs”.

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<sup>1</sup> I am not sure that there is a completely homogeneous school of thought which we could call the “Gestural School”. Nonetheless I will use this term as an abbreviation for the group of authors advocating the “gestural” perspective on SL described in paragraph 1.1.

<sup>2</sup> Concerning nonmanuals, Pendzich and Herrmann state: “Nonmanual actions articulated by the body, head, and face fulfill various functions, either as gestural elements or as linguistic markers operating on all levels of sign language grammar. Thereby, two characteristics are particularly decisive: nonmanuals are multifunctional and they may simultaneously combine with manual components as well as with further nonmanual features [...]” (Pendzich and Herrmann 2015) For grammatical functions of nonmanuals cf. Lackner 2017. Stamp and Sandler 2016 argue for a view of SL structures emerging from bodily actions (cf. also Sandler 2015) and Constructed Action which – after an adequate restriction of this notion’s scope, following its use in SpL research – should really be evaluated as gestural.

## 2. Phenomena of coding reference via spatial parameters

- The category INDEX, interpreted as completely equivalent to the pointing gesture in SpL, and similar signs used with respect to referencing (e.g. possessive pronouns)
- localisation of referents for anaphoric identification (“loci”)
- role change.

Taking this extent of allegedly “gestural”/“non-linguistic” elements for true, there would hardly exist any longer SL text which did not show complex sequential and simultaneous combinations of linguistic and gestural/non-linguistic elements:

We find that one-third of the core elements in the single clause-like units in these Auslan narratives are expressed via pointing signs, depicting signs, gestures, and enactments, in various orders. (Hodge and Johnston 2014, 262)

Consequently, SL texts become “blends”:

[...] blends, that is, as expressions in which gestural and linguistic elements are co-produced within a single sign” (Özyürek 2012, 637)

This statement assumes that linguistic and non-linguistic elements constitute a “sign”. It does not clearly say whether the gestural element is a sign. If we assume that (as the more probable solution)<sup>3</sup>, the statement has to be read as: ‘linguistic and gestural signs constitute x-signs’. No one has yet answered the question whether these x-signs could be evaluated as signs of language.<sup>4</sup> Only if we approve that, we can call SL texts as a whole “language texts”. Choosing a negative answer, we would have to state that what we call SL-communication or SL-texts run with a permanent change between language and non-language signs.

The criterial properties of SL elements to be evaluated as “gestural” are “gradience” (Liddell 2003) or gradual/complete lack of “conventionalization” (Johnston and Schembri 2010); a third – less strictly applied – criterion is the similarity of SL productions to spoken language gestures (Cormier 2014, 3).

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<sup>3</sup> If we would assume that the gestural element does not have sign status, we would have to argue that the combination of a sign and a non-sign constituted a sign again.

<sup>4</sup> Liddell (2003, x) uses “language signal” as a cover term for linguistic and gestural elements as he interprets them.

## 1.2 Illustrative Examples for “Gestural Analysis” of SL Utterances

### 1.2.1 Locative Arrangement

hand 1	
handshape	gestural = non-linguistic
orientation	gestural = non-linguistic
location	gestural = non-linguistic
hand 2	
handshape	gestural = non-linguistic
orientation	gestural = non-linguistic
location	gestural = non-linguistic

TABLE  
[STANDS]  
ASIDE  
WALL

Table 1: Locative Arrangement

### 1.2.2 Ditransitive Verb

	Starting position	Movement	End position
handshape		non-linguistic	
orientation		non-linguistic	
location	location 1: linguistic		location 2: non-linguistic
movement		linguistic	
direction		non-linguistic	
	I	GIVE (TO) BOOK	HIM/HER

Table 2: Ditransitive Verb

The examples show that central elements of SL, the equivalents of which are coded by language elements in SpL, are ascribed the status of “gestural”. It is not so easy to prove that “gestural” is equivalent to “non-linguistic” because the “Gesture School” representatives have partially adopted the concept of “continuum” from Kendon and McNeill and use cover notions like “language signal” (cf. Liddell 2003). But while McNeill – before taking over Liddell’s view – positioned SL as one pole of the gesture-

language continuum, stating that SL had all language properties, the Gesture School either does not discuss the issue or puts the gesture-language distinction *into* SL. That is, for the adherents of the “Gesture School” SL are no longer the pole of Kendon’s continuum but contain many phenomena which are located outside of the language pole. Therefore, we can at least indirectly conclude that the respective SL elements (cf. 1.1) do not have language status.

Clearly, the ascription of “gestural” at first depends on the understanding of the word’s meaning, its role in a model of language and/or communication and the operational methods or criteria by which scientists can identify “gestural” elements. The first task of a critique therefore is to look for the meaning of this notion:<sup>5</sup>

### 1.3 A Recent Example for the “Gestural” Perspective on SL

Jantunen proposes a modality-independent definition:

[...] , the term ‘gestural’, [...] , refers broadly to any sort of expression in signing or in speech that “can’t be analysed in discrete, categorial terms” (Kendon 2008). In other words, it refers to the relatively gradient (i.e. un-categorial) and unconventional aspects of language production. (Jantunen 2017, 66)

Here we find all central elements which are used to construct the meaning of “gesture”, namely discreteness vs. gradience, categorial vs. uncategorial and conventional vs. non-conventional. We will see below that some gesture researchers recently formulated the idea that gestures (in SpL) – similarly to SL elements – can be described as constituted by different parameter values and also show at least some phenomena of a “grammar”. For now, I will analyse the meaning of “gesture” as it is given in the quotation above, adopted from earlier gesture research. For the recipients of Liddell and other authors of the “Gesture School”, the “gestural character” of SL not only affects whole categories of SL elements but also SL syntax:

[...] the nature of syntax in sign languages and [...] a conceptualization in which syntax is seen as a set of norms distributed on a continuum between a categorial-conventional end and a gradient-unconventional end. (Jantunen 2017, 65)

It is not completely clear, but it seems that the author – after having defined “gesture” for all modalities – puts forward his proposal for syntax only concerning SL. If this is correct, it would prove the SpL bias of his analyses.

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<sup>5</sup> I cannot go into detail here, but we have to keep in mind that – applying the view of Cognitive Linguistics – scientific notions used or defined in linguistics are prototypically organised as we assume that for all, especially more abstract language elements. Maybe there is some more strictness in communication about them in the disciplines and there are even operational definitions for them, but this does not help to avoid prototypical meaning.

#### 1.4 The Epistemological Consequences of Ascribing “Gestural” to Central Elements of SL

In order to understand the discussion on gestural elements in SL, we have to look at the epistemological dimension of the assumption that most central elements of SL are “gestural” in the understanding formulated above by Jantunen. One question in this respect is whether this way of describing SL has any scientific advantage, compared with other descriptions.<sup>6</sup> As far as I know, no representative of the Gesture School has ever commented on that issue. My view is that this approach has a principal disadvantage: It does not lead to a modality-independent model of language. Instead, it promotes the incompatibility of SpL and SL by creating special notions for SL categories like “established lexicon” or “depictive verbs” and by denying the applicability of linguistic methods like a vertical minimal pair analysis (cf. below).

The representatives of the Gesture School argue inconsistently: On the one hand they emphasise the concept of a “continuum”; on the other hand, they see a “competition” between language and gesture:

Given that in sign languages, the same articulators compete for gestural and linguistic components of expression, it might seem unlikely at first sight that gesture production would figure prominently in sign languages. Some recent studies, however, argue that gestural components do play a role in sign production. This argument is based on the insight that sign languages exhibit modality-specific patterns and have – due to the visual-gestural modality – the potential to directly access imagistic, analog, iconic, or spatio-temporal representations [...] (Özyurek 2012, 636f)

These formulations take the existence of a high number of gestural elements in SL as an already proven scientific fact; their “shaping notions” for the area of SL, e.g. “visual-gestural modality” contain this semantics already in themselves. Additionally, readers are provided with a list of potential reasons for that existence of gestural elements, namely the possibility to produce “imagistic, analog, iconic, or spatio-temporal representations” in this modality. “Imagistic” and “analogue” are used stereotypically in many publications of adherents of the Gesture School, without legitimising their use by any further analysis. It is taken as given that several categories of elements of SL represent “images” which have the quality to be “analogue” to the referents they code. I concede that there is no agreement between philosophers or semioticians concerning a definition of “image” as well as “icon”. But I want to emphasise Sebeok’s statement that diagrams as one subcategory of icons (besides image and metaphor) were often neglected in semiotics (Sebeok 2001, 107). The abstractness of many iconic elements of

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<sup>6</sup> I do not relate this discussion to the sociolinguistic context of SL research here. For this issue cf. Napier and Leeson 2016 and their description of “applied sign linguistics”.

SL, partially described as lacking transparency, the fact that only one or very few parameters of the object referred to are produced, indicates that more or less all SL categories like classifiers or morphological components of verbs should rather be interpreted as diagrams and should not be denounced as mere images (otherwise all respective elements should be easily recognisable by non-signers). The use of inadequate terms strengthens the impression of SL as being “gestural”.

Moreover, the passage that “sign languages exhibit modality-specific patterns and have – due to the visual-gestural modality – the potential to directly access imagistic, analog, iconic, or spatio-temporal representations” proves the SpL bias of Özyurek’s approach: It is only on grounds of the use of another modality that SL are presumed to show non-linguistic properties.

It is also worth noting, that there is no ‘continuum’ between “analysable” and “not analysable in discrete terms”. This means that adherents of the Gesture School have to decide whether gestural elements, which – following Kendon and Jantunen – “can’t be analysed in discrete, categorial terms” are linguistically analysable or not. As this decision concerns major parts of SL grammars which showed that all the phenomena in question (cf. 1.1) are principally describable “in discrete terms”, the Gesture School should also develop a description of SL following their assessment of gestural parts in SL.

In contrast to Jantunen, Wilcox defines “gesture”<sup>7</sup> as follows: “[...] a gesture is a functional unit, an equivalence class of coordinated movements that achieve some end” (Armstrong, Stokoe and Wilcox 1995, 43).

Adopting this definition, “gesture” would be a superordinate concept not only for SpL and SL but also for all functional actions of the human body. This definition is the most abstract and a modality-independent one. Using it, we need further criteria in order to separate “language” and “gesture”. For that we first have to decide whether we want to achieve a rigid separation of the two areas or whether we assume that there are some transitional areas or a partial sharing of properties, synchronically and/or diachronically. According to the second view, Wilcox introduces

[...] certain dimensions along which these phenomena vary, such as articulatory and perceptual systems, medium of transmission, conventionalization, schematicity, symbolic complexity, and autonomy-dependence. (Wilcox 2004b, 58)

Along these dimensions also the question whether some elements are more likely to have language status or not should be researched by in-depth analysis.

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<sup>7</sup> The notion of “gesture” as well as that of “articulation” can be interpreted rather differently: In their broadest sense, “articulation” covers production activities in SpL as well SL. Similarly, if “gesture” includes “vocal gesture”, it covers SpL, SL and every acoustic or visual communication act (cf. Wilcox 2013). In its common understanding, “gesture” means the non-linguistic expressive potential of the body (“body language”); in the context of SpL linguistics it means autonomous and speech-accompanying bodily activities (cf. Kendon 2005, 17–83).

However, also in using Wilcox' view, the following questions remain: Can all “gestural” phenomena in Wilcox' sense, produced in the context of communication by language, be described by one and the same model or system? In other words: Can we really construct a “unified grammar” – as proposed by Fricke (cf. 2.5.3) – or is it better to keep the notion of “grammar” restricted to items identified as language elements, enriched by elements indispensable for the correct interpretation of the communication act? Though adhering to the opinion that language is “an activity of the whole body”, I personally tend towards the second solution, assuming a combination of embodiment and grammaticalisation processes (cf. Wilcox 2004a; Bolly, Gabarro-Lopez and Meurant 2015; Dachkovsky 2015; Kaşıkara and Özsoy 2015; Stamp and Sandler 2016).

## 1.5 The History of the Problems of SpL Linguists with Visually Coded Languages

Looking into the history of SL research, we find several issues which surprised linguists coming from SpL research. They had to cope with the properties at hand and sometimes their decisions left the way of looking for a common typology for SpL and SL, implicitly declaring SL as the deviant system.

### 1.5.1 A Biased “Model” of Language

Looking at SL only from the perspective of SpL research results, i.e. taking the results of SpL typology as the standard of comparison for all natural languages, turns all properties of SL which don't (seem to) have any coding equivalents in SpL to critical cases with respect to their language status. Drawing on Hockett (1978), Kendon (2014, 1–3) gives an overview related to the definition of “language”:

Hockett (1978) accepted the language status of SL, but also drew attention to an important difference between spoken and signed languages, however. These differed, he said, in terms of what he called ‘syntactic dimensionality’. That is, as he put it, in speech ‘the only possible arrangement of words is linear’. On the other hand, in a sign language, ‘there are four usable dimensions, three of space and one of time’. Because of this, sign languages can be iconic to an extent to which spoken languages cannot. He writes: ‘when a representation of some four-dimensional hunk of life has to be compressed into the single dimension of speech, most iconicity is necessarily squeezed out’ [Hockett 1978, 275]. If one has a four-dimensional system such as a sign language, on the other hand, much less iconicity is lost. For Hockett, thus, systems such as spoken languages or sign languages do their work with the properties that they have, and he suggests that spoken languages, just because of this linearity that squeezes out iconicity, have limitations that sign languages do not. Nevertheless, he says, because ‘in 50,000 years or so of talking we have learned to make a virtue of necessity’, we have become

proud of the arbitrariness of speech [Hockett 1978, 273–275]. (Kendon 2014, 2)

Kendon associates this quotation with an assumed topos of SpL linguistics, namely “arbitrariness is top”: “We like to make a point of the arbitrariness of language, as if this is something that makes it superior to systems that are not arbitrary.” (Kendon 2014, 2) Stating his own position, Kendon continues:

Why this should be so, I am not sure. There is a view that iconicity is somehow ‘easier’ than arbitrariness, [...] Hockett seems free from this prejudice, however. For him, it is clear that a system that shows iconicity can be just as respectable as one that does not. For example, he agrees that, in the light of a careful reading of Stokoe’s monograph, sign languages have what he calls ‘duality of patterning’—an important property, also, of spoken languages. He adds, however, that ‘[j]ust as speech in any language is characteristically accompanied by various paralinguistic and kinesic effects [...] so also signing can be accented and punctuated by purely iconic or expressive body motions that lack cinematic structuring’ [i.e. lack a phonology, or something analogous to it] [Hockett 1978, 276]. ‘Iconic devices’ in sign language are thus, for him, part of the picture, just as they are in spoken languages. (Kendon 2014, 2)

As a linguist, one has to accept Hockett’s reservation principally, as it only assumes very generally that there are some parts in every natural language communication which are not performed in concord with the system of the respective language (i.e. its grammar). To quote similar views from SL research:

Still, Goldin-Meadow and McNeill claim that sign languages are like speech in showing the crucial segmented/combinatorial characteristics. They then ask, “Can the manual modality at the same time also be used for holistic and mimetic expression? In other words, do signers gesture along with their signs [...]?” (Goldin-Meadow and McNeill 1999, 166)

It seems clear that signers do, in fact, gesture along with their signs. As Emmorey (1999) shows, sometimes the signer will stop signing and insert a gestural element. (Lillo-Martin and Meier 2011, 236f)

I would agree that there is no doubt that signers also gesture (cf. Healy 2015 who reports on emotional facial expressions which are produced in analogy to speech-framed gestures, coding the emotions of an experiencer in a story, possibly interpretable as Constructed Action). It is also very probable that many SL elements have their source in gesture, but the actual status of these SL elements is another question (cf. Wilcox 2005). Related to the question which elements were gestures in actual SL texts, therefore, we may ask two questions: 1. How do we methodologically separate the phenomena belonging to grammar from the others which are “performative” or accidental to

the analysed text? 2. With respect to the application of typological results from SpL to SL, how do we check the methodological validity of these operational methods? Additionally, I would like to emphasise Hockett's sentence quoted above: "[S]ystems such as spoken languages or sign languages do their work with the properties that they have". This sentence respects a general typological perspective on SL which we need for their unbiased analysis. We may reformulate it as a third question: How do SL do their work in comparison to SpL?

Compared to the quotes above, Kendon (referring to DeMatteo 1977; Mandel 1977; Boyes Braem 1981; Stokoe 1991; Brennan 1992; and Pizzuto, Pietandrea and Simone 2007) astonishingly states that:

[T]here were a number of students of sign language who had already seen that the structural linguistic model, as borrowed unchanged from spoken language linguistics, could not serve as a complete framework for the analysis of sign languages. (Kendon 2014, 2)

I interpret this statement as a misunderstanding of the quoted authors: These argued for adapting and expanding structural analysis in order to do justice to the visual languages, not for abandoning it.

### 1.5.2 "Established" vs. "Productive" Lexicon

The first example for "problems" linguists had with SL is the lexicon: Starting from the fact that it was not possible to find unique forms which could represent certain lemmas in SL dictionaries, especially for some verb classes, Brennan (1992) differentiated an "established" or "frozen lexicon" from a "productive lexicon". This dichotomy is not adequately comparable to spoken language linguistic terminology, where "productive" means a rule of language still in use (i.e. producing new form combinations) and contrasts to "non-productive" rules which are no longer used in the community.

The reason for the lack of unique lemmas for some verbs is that they appear in simultaneously produced verb phrases with detailed visual codings. This is – as was stated rather early in SL linguistics – due to the variability of visually three-dimensional coding, e.g. of actions related to space: Some types of sign language verbs (e.g. so-called agreement and movement verbs) show a rich morphology concerning the participants (using so-called classifiers) and different parameters of movement. As there is no infinitive in sign languages, there is no 'natural' neutral or less marked form which could be selected as the lemma. Instead, one has to choose a "citation form", i.e. a morphologically sufficiently enriched form which is a prototypical realisation of the respective verb (this problem is also found in spoken languages like Arabic or Hungarian where a finite form is selected to represent the lemma). Moreover, as all parameters can change in production, related to context, there is no element in such verbs which could be called the stem. Nonetheless, native signers seem to know the respective concepts (like "give" or

“move”) and the morphological rules for the production of the verbs in question. Accordingly, sign language dictionaries show prototypical instances of them. Therefore, the given definition is not adequate in saying that the productive lexicon was

an inventory of phonological building blocks (handshapes, movements, [...]) from which the language user can make a selection to form new signs that do not (yet) belong to the frozen lexicon. (Schermer 2016, 173f)

This definition assumes that the respective verbs are “invented” anew in every signing act and would differ radically from the elements of the “frozen” lexicon. We can conclude that the dichotomy as such is not adequate even for SL as it mixes lexical and morphological criteria and misinterprets the difficulty to establish lemmas for the elements of the “productive lexicon” in dictionaries as a property of certain lexical classes of SL. To emphasise the source of the dilemma: It was not a problem of analysis; it was only a problem of the representation of visual lexemes/morphemes in dictionaries which disappointed the expectations of some SpL linguists.

### 1.5.3 First vs. Non-First Person Pronoun

Meier (1990) contrasts SpL to SL because in the latter the position of the referent in space determines the phonological parameter of direction:

[M]ost descriptions of the ASL signs translated as “you” or “him/her/it” are phrased in terms of the reference of these signs. That is, the sign YOU is described as a pointing sign directed to the addressee or, alternatively, as a pointing sign directed to the addressee and accompanied by gaze to that addressee. In such descriptions the phonological shape of the putative second-person sign is defined in terms of both the location of its referent and the conversational role of that referent. In contrast, when we impute second person to the English pronoun “you”, the notion “addressee” appears only in the description of the conditions under which “you” is used, not in the phonological description of the word. (Meier 1990, 188)

That the pronoun coding of ASL deviates from that of English in terms of exploiting the possibilities of three-dimensional space is not looked upon neutrally (e.g. by trying to find a model overarching SpL and SL). Rather, the model of English, having no directional coding element, is generalised as a criterion for all languages, namely: Pronouns must not include the addressee in their phonological description. Looking at the physical appearance (“phonological form”) of the signs for addressee and third person and – following the “English” model” – neglecting the roles of the participants, he states that the respective forms cannot be distinguished. “[T]he set of pointing signs we might identify as second person largely, if not completely, overlaps the set we would identify as third person.” (Meier 1990, 186)

This SpL-biased interpretation of facts serves as the argument against differentiating between second and third person as grammatical categories in ASL:

Unless the form of the corresponding ASL sign can be described independent of the location of the real or hypothetical addressee, I see no reason why the grammatical description of ASL must be complicated by the notion of second person. Note that this problem does not arise in describing first person signs. The first-person signs [...] can be described as having the center of the chest as their place of articulation. The center of the chest is also the place of articulation of a large number of non-deictic signs [...] (Meier 1990, 188)

As a result, Meier proposes three grammatical categories for ASL, namely first person singular, first person plural, and non-first person. The latter can be differentiated by adding morphemes like a “sweep movement” for plural or by the incorporation of numbers.<sup>8</sup> Addressee and non-addressee as well as different non-addressees can be differentiated by indexing different loci for the respective referents.

Though Meier quotes a SpL universal: “All known spoken languages have a way to distinguish first, second and third person” (Meier 1990, 176), he does not concede that for SL grammatical categories. The underlying SpL-bias – instead of accepting “direction to participant” as a relational parameter for SL pronouns – helps assuming that SL are “deviant” from SpL, especially by not being able to identify referents without the use of spatial elements. He forgets that visual spatial elements belong to the coding inventory of SL while the SpL inventory does not contain acoustic spatial elements (how they should look like ever).

Meier cannot make clear why the use of different loci should allow to differentiate between addressees and non-addressees because the loci physically overlap as well as the directions of the indexes do.<sup>9</sup> We can find linguistic parameters of SL which allow a formational distinction between second and third person, however: normally, gaze is directed to the addressee, except a third person is indexed (this fact is noted by Meier 1990, 186, but he dismisses it as possibly being a “property of conversation”) and role play is only possible for third person referents.

Moreover, Meier uses a problematic parameter description for the pronouns: He takes “place of articulation” as the main feature of the first person (i.e. the chest of the signer). But this parameter does not allow to describe the calling up of different loci. This can only be done by using the parameter of “direction”. Taking “direction” as the decisive parameter for all pronouns would show that a homogeneous rule for

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<sup>8</sup> Meier (1990, 189) argues that lexicalised forms for the first-person pronouns and componentially differentiated non-first-person pronouns are compatible with findings from diverse SpL.

<sup>9</sup> “[...] indexing of spatial loci is sufficient to distinguish the loci associated with the addressee from those associated with the non-addressed participants in a conversation.” (Meier 1990, 189)

directing the index allows a more general description of pronominal indexing. This rule – resorting to the cognitive processing of participants' roles and not to the superficial directions in physical space – can serve to set up the usual differentiation between first, second, and third person pronouns: The phonological description of the pronoun in the lexicon then contains the parameters remaining unchanged as well as a relational rule for the parameter of direction, depending on the actual communication situation or an invented one, also related to the roles of the respective participants. The situation as a whole can be related to a cognitive “map” of the signer containing all information relevant for his sign production and steering the signing.

We can further argue with the coding inventory of SL that “direction” belongs to this inventory (but not to the inventory of SpL), so why not use it for the production of pronouns? The realisation of the parameter follows a universal human cognitive-communicative rule which is directly taken in by SL grammar, by that also using the general principle of SL to use iconic/indexical strategies in parameter values (Stokoe's (1991) “semantic phonology”).<sup>10</sup>

## 1.6 How to Find so Many “Gestural”/Non-Linguistic Elements in SL?

Within the “Gesture School” of SL linguistics there are two pathways to its results: One can either take over Liddell's (2003) model,<sup>11</sup> mainly based on the argument that “gradience” is a definitive criterion for elements of SLs to be evaluated as “gestural”. Or one can use the argument of gradual or complete lack of “conventionalisation” as the criterion for elements being “gestural” (put forward e.g. by Johnston 1996 and Johnston and Schembri 2010).<sup>12</sup> The use of similarity judgements between elements of SpL evaluated as “gestural” with respective elements of SL (cf. Cormier, Quinto-Pozos, Sevcikova and Schembri 2012) is methodologically questionable. A similarity approach only has as its consequence that all elements of SL showing a sufficient similarity with gestural elements of SpL would get the same evaluation for SL.

As the “Gesture School's” findings are based on or related to gesture research, I first refer to this discipline:

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<sup>10</sup> Comparing the production parameters of SpL and SL from a typological perspective, we find many common features: simultaneous and sequential configuration of parameter values, place of articulation, open/close movements, movements from one configuration to the other (= coarticulation). The difference is that in SpL all these elements are used to produce different shapes of the resonance space of the vocal tract.

<sup>11</sup> Here and throughout this text I take Liddell (2003) as the prototype for the “Gesture School”. Although similar ideas had been proposed earlier (cf. also paragraphs 1.5.2 and 1.5.3 above), these did not concern SL as a whole. Liddell was the first to systematise the “gestural view” on SL and to summarise all arguments in favour of this view.

<sup>12</sup> This argumentation is perhaps a transfer of McNeill's concept of “conventionalisation” to sign languages, using “non-conventionalised” as a synonym for “gestural”, the latter having been adopted from Liddell.

## 2 The Transfer of the Spoken Language-oriented Notion of “Gesture” to SL

Gesture research was exclusively driven by analysing SpL communication. Nevertheless, its results were more or less taken over by SL linguists. Neither the source of gesture description, SpL research, nor any possible need for an adaptation of the definition of gesture for SL were discussed (cf. Lillo-Martin and Meier 2011, 236, referring to McNeill’s model described below). However, analysing SL based only on results of SpL research poses a first methodological problem, namely the number of communication channels: SpL use two, the acoustic and the visual one, SL use only one, the visual one. The fact that the acoustic channel contains most of the content – together with the widespread tacit assumption that SpL is exclusively produced in the acoustic channel – had as its consequence that SpL linguistics evaluated only the elements of this channel as “language” or “paralanguage”.<sup>13</sup> All visual elements are assigned non-linguistic status, they are “gesture”. The result is a strict dichotomy which is questionable even for SpL. While for SpL the respective channel then defined the language status of communicative elements, this is impossible for SL. Therefore, one needs a different definition of “gesture” for SL.

In contrast to the more dichotomous model of SpL linguistics, gesture research postulated a tight cognitive connection between SpL and gesture which accompanies and amends SpL (cf. McNeill 1985, Kendon 2005).<sup>14</sup>

### 2.1 “Kendon’s Continuum” by McNeill

Kendon conceived a “continuum” of different visual-communicative means within the extension of “gesture”, having SL as the “border” to language which was expanded to 4 subcontinua by McNeill (2000, 2–5).<sup>15</sup>

<sup>13</sup> “Linguistic” means “produced by use of the language system/grammar”, “paralinguistic” means “without any relation to the language system/grammar”; cf. also the notions “competence” and “performance”. All respective definitions come from SpL research. “Paralinguistic” is more commonly used for phenomena in the acoustic channel, while “non-linguistic” covers the visual channel (cf. e.g. Lehmann 2013). Rarely, “paralinguistic” covers both channels.

<sup>14</sup> McNeill (2007, 18) calls this “imagery-language dialectics”, in which both speech and gesture are simultaneously active and inseparably combined in cognition. The notion of “imagery” which I interpret as generally describing memory engrams of scenes, actions, and objects has led to the misinterpretation that all these engrams are “images” in the sense used in semiotics and that they are directly represented as “images” of the elements referred to in gesture production. This interpretation was then transferred from SpL to SL. In connection with the assumption that these “images” were analogue reproductions of the elements of the real world, many SL signs were denied categorial (= language) status.

<sup>15</sup> SL is taken as one “pole” of the continuum. It is only from its description in Kendon (2016) and McNeill’s description in the subcontinua 2–4 – identical to the description of SpL – that we can conclude that SL “signs” belong to the area of language. With the notions of “contrasting kinds of semiotic properties” and “sign-gesture system”, however, McNeill (2000, 5) refers to Liddell’s concept of SL.

	<i>Subcontinuum 1: relationship to speech</i>		<i>Subcontinuum 2: relationship to linguistic properties</i>	<i>Subcontinuum 3: relationship to conventions</i>	<i>Subcontinuum 4: character of the semiosis</i>
<i>gesticulation</i>	obligatory present	<i>gesticulation</i>	absent	not convention- alised	global synthetic
<i>emblem</i>	optionally present	<i>pantomime</i>	absent	not convention- alised	global and analytic
<i>pantomime</i>	obligatorily absent	<i>emblem</i>	some present	partly conven- tionalised	segmented and synthetic
<i>sign (language)</i>	obligatorily absent	<i>sign (language)</i>	present	fully conven- tionalised	segmented and analytic

Table 3: Subcontinua to “Kendon’s continuum”

The pole “Gesticulation” is defined as being “co-expressive”, “co-speech”. “Gesticulation” assists the transmission of the meaning of SpL and is a system bound to SpL.<sup>16</sup> The other pole, sign language, is ascribed language properties because its signs are fully conventionalised.<sup>17</sup> “Emblem” is defined as a culturally specific conventionalised gesture with a specific meaning (e.g. “thumbs up” or “ok”). This specific relation between form and meaning represents already somehow a property of language and therefore emblems are understandable with or without accompanying SpL. A linguistic property they lack is the existence of a contrastive formational system; and not all additional features can be distinctly interpreted. The last category within the area of gesture, “Pantomime”, is defined as a sequence of gestures which code an event or story not accompanying respective SpL units.

The arguments for not ascribing linguistic status to gestural elements are the following: They are spontaneously produced, non-arbitrary, and depend on their context; they do not have a standard form and cannot be combined together. Additionally, they are defined as non-linear, not as segments, and their meaning is “top-down”, “global” or “synthetic”.

<sup>16</sup> “Gesticulation” is “synchronised” with the simultaneously produced SpL and breaks down together with the latter in aphasia.

<sup>17</sup> Concerning the criterion “absence of speech”, it should be noted that mouthings represent a contact phenomenon related to SpL.

“Speech-framed gestures” – they are not mentioned in McNeill (2000) and appear first in McNeill (2006) – are defined as replacing a possible word of SpL which is not produced. That is, they fill a structural slot in a SpL text.

For “gesticulations” und “speech-framed gestures” McNeill (2006, 4f) proposes a subdivision in “rhythmical” (i.e. “strokes”/”beats”, synchronised with the rhythm of SpL), “deictic” (“indexical”, e.g. “pointing gestures”), “conjunctive” (linking of text parts), “iconic” (coding information visually) and “metaphoric” (visual metaphor for abstract information).

Further assumptions by McNeill:

- If SpL is the basis of communication (i.e. obligatorily present), gestural elements do not show properties of language; if SpL is obligatorily absent, SL elements have these properties. Emblems and partly also “Homesign” are examples for gestural communication with emerging language properties (McNeill 2000, 9).
- The conventionalisation of an element directly correlates with its language status.
- Meaningful language elements can be combined to more complex meaningful elements (“bottom-up”, “segmented-analytic”).

### 2.1.1 Critical Points of Mc Neill’s Model<sup>18</sup>

The model poses a variety of problems: The first and unique continuum (McNeill 1992) had the following structure:

[spontaneous] gesticulation > [language framed/slotted] > pantomime  
> emblem > signs/sign language.<sup>19</sup>

Splitting this unique continuum into four subcontinua changed the sequence for subcontinuum 1 into ‘gesticulation > emblem > pantomime > sign language’, while subcontinua 2–4 kept the original sequence.<sup>20</sup> As a result, there is no more a homogeneous sequence of the four chosen phenomena (cf. Table 3).

<sup>18</sup> For critique from a SpL linguistics perspective cf. Fricke 2012, 116-122.

<sup>19</sup> This sequence merges several variants of the basic “continuum”; cf. McNeill 1992 and McNeill 2007a.

<sup>20</sup> For the respective reception cf. e.g. Parrill 2008, 197, Gawne, Kelly, and Unger 2009, Tellier 2009, Scott and Pika 2012, 153f.

### 2.1.1.1 The Notion of “Continuum” is Applicable Neither to the Whole Model nor to the Single Subcontinua. Rather, We See More or Less Well-Defined Classes or Sets<sup>21</sup>

As mentioned above, subcontinuum 1 deviates from the other three, concerning the order of emblem and pantomime (cf. also Kendon 2005, 104–106). This inhomogeneity is probably due to their characteristic functions and their appearance: emblems are single signs, pantomime is a coherent “acting out” at specific positions of SpL or SL communications, and SL are languages themselves.

With the exception of emblems and homesign (see above), McNeill does not give examples for “transitional areas” between the four categories described in Table 3. This view is supported by discretely ascribing the criteria used to the respective categories. Therefore “continuum” seems to be only an illustrative metaphor.

In-between the two poles, emblem seems to get its gradual evaluations (some linguistic properties present, partly conventionalised, segmented AND synthetic) more for the sake of arranging them where they are than from observation and analysis: It is not clear why they should be only partly conventionalised. The description “segmented and synthetic” looks like a contradiction in itself. Either the emblem’s gestalt can be analysed in parts, the absence of which destroys its significance, or not. “Synthetic” seems to express only the status of a single item of meaning. The evaluation of pantomime as “global and analytic” shows a similar contradiction in itself.

The criteria used for the description of the categories are dichotomous; they do not even show transitional steps: E.g. in the fourth subcontinuum, related to semiotic processes involved in the production of the gestural elements differentiated, McNeill uses two opposing pairs, namely “global” vs. “segmented” and “synthetic” vs. “analytic”. “Global” says that the meaning of the respective element does not result from a combination of meaningful elements (that is the definition of “segmented”), but from the element as a unitary unit. In other words: the parts of “global” gestures cannot be ascribed morpheme status); the meaning of the gesture is produced “top-down”. In contrast, the “bottom-up” produced meaning of “segmented” entities results from the meanings of its morphemes. In McNeill’s words: “The meanings of the ‘parts’ are determined by the meaning of the whole. This contrasts to the upward determination of the meanings of sentences.” (McNeill 2000, 5)

“Synthetic” says that the meaning of the respective gestural element relates to a word or even a sentence as a whole, while “analytic” gestures (e.g. in pantomime) can be analysed as sequences of actions. Both opposite pairs, “global” vs. “segmented” and “synthetic” vs. “analytic”, cannot be used to describe a continuous transition within single continua, rather they signal categorical differences.

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<sup>21</sup> The only possibility to create relations between the classes would be to state genetic cognitive, or historic “family resemblances” in the sense Wittgenstein proposed.

The “relative distances” of the categories are not discussed: Concerning the absence of language properties as well as of conventionalisation, gesticulation and pantomime would mate, while concerning the absence of speech pantomime and SL would mate.

Important criteria like duration/measure in time or communicative function are not applied: While gesticulation runs at least partly continuously if a speaker uses it, an emblem has a duration like a single sign. Pantomime has some longer duration because it presents information scenically, via visually perceivable performance of the whole body.

### 2.1.1.2 Mixing of Criteria of Different Sorts

The above-mentioned subdivision of “gesticulations” und “speech-framed gestures” in “rhythmical”, “deictic”, “conjunctive”, “iconic” and “metaphoric” mixes different criteria: While “rhythmical” is an intrinsic property of the gestures defined by this criterion, “deictic” and “conjunctive” are communicative functions of the respective gestures. In contrast, “iconic” is a special form of coding, as well as “metaphoric”. Therefore, the subdivision is methodologically not clear-cut and the category of “gesticulation” is inconsistent in itself: One set of elements within this category are the more or less continuous activities during speaking (e.g. beats, strokes, etc.), other subsets are deictic, iconic representational, and metaphoric gestures (elements of the last subset represent abstract content iconically). The members of these subsets differ massively regarding their functions and their conditions of their production.

### 2.1.1.3 Problematic Understanding of “Conventionalisation” and Inadequate Use of the Criterion “Degree of Conventionalisation”

Gesticulation and pantomime are evaluated as “not conventionalised” (regarding sub-continuum 1, they are not adjacent, because emblems are positioned between them). Emblems are ascribed “partly conventionalised”; only signs/sign language get – as could be expected – “fully conventionalised”. This reflects McNeill’s assumption that only language elements can show this property (cf. McNeill 2000, 9; he may have adopted this assumption from common sense SpL linguistics). But linguists do not take this property as one which is restricted to language alone. Rather, every sign needs some sort of convention – always restricted to the group of its users – for its successful use in communication – by definition. Therefore, regarding the ascription of “conventionalised”, the preceding question is whether the respective element can be taken as a sign instead of using a gradual scale of the parameter “conventionalised” as a tool for ordering different phenomena as in McNeill’s subcontinuum 3.

Enfield restricts the evaluation of “non-conventional” to signs which are singularities within communicative usage, i.e. spontaneous applications of what I have described

in connection to pantomime (attempts to code what the speaker thinks is a common “concept” of the respective object or action):

Non-conventional signs [...] are found when people take certain signifiers for certain signifieds not because of previous experience with that particular form-meaning pair or from social convention, but where the standing-for relation between form and meaning comes about by virtue of just that singular event of interpretation. Examples include representational hand gestures [...], where the gesture component of an utterance is a token, analogue representation of its object. (Enfield 2013, 696)

Let us start with the so-called “emblems”: Following McNeill, these are culturally and contextually specific gestures coding a relatively well circumscribed meaning (e.g. “thumbs up” or “ok”), understandable with and without language.<sup>22</sup> With this meaning-form-relation they can be interpreted as similar to single signs of a language. However, as they cannot be combined with each other to form larger meaningful units and as they miss a system of contrastive distinctive features in which all emblems of one coherent cultural group are embedded,<sup>23</sup> they do not constitute a language (additionally, there is simply no sufficient number of elements for that). They have to be conventionalised in order to be understood as signs in a certain community: they are (fully) conventionalised non-linguistic signs. Naturally, this convention holds only for the group of persons who use such visual signs systematically in their communication.

The question whether signs have to be evaluated as non-linguistic is further complicated by the existence of so-called “speech-framed/slotted gestures”, positioned between “gesticulation” and “emblem” (cf. subcontinuum 1 above and McNeill 2006, 4f) or “pantomime” (cf. subcontinua 2–4). This notion describes the property of a gesture which can be used to fill a sequential slot in a SpL sentence structure alone (without an accompanying spoken element having the same meaning), i.e. to replace a spoken element.<sup>24</sup> The consequence of this phenomenon is that we have to differentiate for the same gestural elements whether they are used for visual underlining or illustrating – accompanying respective SpL elements – or for replacing spoken elements, then necessary for the completion of a SpL structure. This differentiation is an important feature in analysing the functional capacity of gestural elements: We separate the gestures exclusively used “co-expressively” from those which can be used both accompanying speech and filling sequential slots. This parameter has to be cross-used with McNeill’s (2006, 4f) differentiation into “rhythmic” (“strokes”/“beats” which are produced synchronically with

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<sup>22</sup> In general use, emblems have a far wider meaning, they are e.g. defined as “an object or the figure of an object symbolizing and suggesting another object or an idea”, or “a device, symbol, or figure adopted and used as an identifying mark” (cf. <http://www.merriam-webster.com/dictionary/emblem>).

<sup>23</sup> Though they – like all visual gestural elements – can be analysed into parts by simply applying a descriptive inventory, e.g. the one used for SL.

<sup>24</sup> The question emerges whether an otherwise non-linguistic visual sign changes its status to “linguistic” when it is used as a representative.

the rhythm of SpL), “deictic” or “indexical” (pointing gestures), “conjunctive” (joining parts of a text), “(visually) iconic” und “metaphoric”.<sup>25</sup>

Let us turn to pantomime:<sup>26</sup> Functionally, it has similarities with SpL and SL as one can describe scenes or tell stories with them. Pantomime uses another inventory of body movements than SL: For artistic pantomime,<sup>27</sup> all elements of pantomime are intended to show typified recognisable body movements including facial expressions which the audience can relate to actions, feelings, etc. There is no fixed “sign inventory for pantomime” – not even for a special culture – but there are many institutions where one can train to become an artistic pantomime.<sup>28</sup> In order to be “understood”, pantomimes have to resort to what they think are common conceptions of what they want to represent; this is done in typifying observations of everyday life, by taking over apparent traditional views and representing them in the form of icons (images, diagrams, and metaphors) for certain notions or actions, also in training contexts.

In the ideal case, the audience – though they did not learn the rules of artistic pantomime – can identify all elements of a pantomimic scene. Therefore, the only evaluation of artistic pantomime as “not conventionalised” is not adequate: On the side of the producers there are some “rules of representation” – partially culturally determined – which can be learned and trained. On the side of the perceivers there is a more or less commonly shared, partially kinaesthetic experience regarding the relationship of movements and facial expressions with a scene, story, or meaning represented by them. As a consequence, we have to state that for pantomime groups of different cultures there is a conventionalised set of “body signs”, with some artistic freedom in actual production and the possibility to develop new signs. Their production quality is imagistic or highly iconic, including metaphoric (metonymic) use, maybe showing more creative variability for the single sign than other systems. From a Peircean perspective, they must be called (non-linguistic) “signs” anyway. Due to the special group structure of producers and audience, where only the first group has full access to the respective conventions

<sup>25</sup> It should be noted that only one of these descriptors, namely “rhythmic” describes a formal property, all others describe functional ones. The gestures in the rhythmic set do not seem to be used for replacing spoken elements. As soon as beats or strokes would lose their synchronisation with speech, we would stop calling it “(co-speech) gesticulation”. Therefore, there is no transition zone from “gesticulation” as defined by McNeill to any other part of the pretended “continuum”.

<sup>26</sup> Cf. “Simple Definition of pantomime:

- a way of expressing information or telling a story without words by using body movements and facial expressions
- a performance in which a story is told without words by using body movements and facial expressions.”

A selection from <http://www.merriam-webster.com/dictionary/pantomime> 10 Sept. 2016.

<sup>27</sup> McNeill (2000, 3) excludes “theatrical pantomime” from his continuum because of its rules. I consider it here in order to show the contrast and the commonalities between everyday and artistic pantomime.

<sup>28</sup> Cf. Chapter 2 Pantomime and mime n.d. In artistic pantomime, there are notions used like “gesturally-pantomimically representational dance” which use “conventionalized gesture” (Österreichisches Musiklexikon 2009) or “gestural-facially expressive-pantomimic movement language” (Schroedter 2004, 33). For a history of representational inventories, cf. Thurner 2009, 49–132.

and as there is some pressure regarding the originality of artistic pantomime, there will be many people in the audience who do not get full access to the meaning intended by the producers. This proves that the average members of the audience are not members of any of the “convention holder groups”. On the other hand, fully idiosyncratic performances by the artists without any connection to common experience would not have any success at the side of the audience.

For non-artistic, everyday pantomime, several functions can be observed: People can try to overcome their lack of knowledge of a foreign language, demonstrate a certain practical process, overcome a noisy environment, illustrate a SpL scene, or play (which we can at least partially call “Constructed Action”). In this context, the term “convention” would be inappropriate. But as the transmission of information is still central here, the question is which coding strategy can be used for a successful transmission. The answer is similar as for artistic pantomime: Consider common sense experience and use visual images or icons which are as explicit and typical for a certain action, situation, object, or property as possible. The only difference between artistic and everyday pantomime is that the artists are trained, and the laypeople have to search for spontaneous iconic signs and to try to perform correctly what they have in mind. In non-artistic pantomime, convention is replaced by establishing reference to a hypothetically joint experience and expectation.<sup>29</sup> In other words: convention as a clear categorial criterion is replaced by the existence of a not entirely specified set of common experiences and iconic strategies. For the sake of artistic creativity, this may also partially be the case for artistic pantomime.

For both types, artistic and non-artistic pantomime, understanding the meaning is facilitated by the use of the whole body and by a direct representation of scenes and their sequences, for which the addressee has their own kinaesthetic or imaginative repertoire. These properties delimit pantomime very clearly from SL as well as from gesticulation (the second delimitation is not well illustrated by McNeill’s continua).

Regarding “gesticulation”, the criterion of conventionalisation is here partially inadequate for another reason: If there is no explicit intent to transmit meaning, as in some parts of co-speech gesture, we use gestural elements acquired in our cultural-communicative socialisation (and not those invented on the spot); i.e. the acquisition of relevant behaviour steers gesture. Related to the perception of these elements, unconscious or partially conscious expectations concerning gestural behaviour are evoked: Experiences of producers and perceivers allow/demand a behaviour within the borders of certain social norms. Within this bandwidth, the culturally accepted behaviour is unmarked; any deviation would cause surprise or refusal by the perceivers (cf. Kendon

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<sup>29</sup> That such a concept is sometimes problematic is illustrated by the following play: a group selects a – preferably difficult – notion which a member of another group should pantomimically present to her group in order that they can name the word.

2016, 36–38):<sup>30</sup> Would a person replace strokes/beats in the space in front of her by strokes/beats on her head, the partially automatic perception of the perceivers would become fundamentally disturbed.

For gestures which have one of the functions described above (deictic, conjunctive, iconic, or metaphoric), either a recourse to common experiences of gestural “meanings” (e.g. for conjunctive ones) must take place or even a rather narrow-banded convention exists (e.g. for indexical/iconic gestures like pointing or giving a metaphor for ‘crazy’).

In summary: Related to the general definition of signs by Peirce who differentiates between signs as images, icons, or symbols (adding that most, if not all signs show all three properties to different extents), McNeill’s understanding and application of the criterion of “conventionalisation” seems to be inadequate. In contradiction to his use, several subsets of his category of “gesticulation” (namely indexical and iconic elements) of pantomime as well as the entire category of emblems have to be evaluated as signs which are, by definition, based on conventions. Other parts of gesticulation and non-professional pantomime are driven by social norms of behaviour and by common expectations related to their form and use. The limits of these norms and expectations are only inadequately described by “partly/not conventionalised”. Therefore, McNeill’s continua should be revised, considering whether the types referred to are signs of language, other types of signs, or effectively no signs.

#### 2.1.1.4 The Problem of Subcontinuum 4

Ascribing the values of “global and synthetic” to gesticulation expresses a “holistic” view on these productions. There was never any doubt that gesticulation could be described using the same parameters as are used for the description of the signs of SL or any movement of the hands. What remains is the “downward” constitution of meaning: “The meanings of the ‘parts’ are determined by the meaning of the whole.” (McNeill 2000, 5). In contrast, Wilbur and Malaia show “neurological, functional (semantic) and formational (kinematic) similarities between gesture (in spoken languages) and sign languages” (Wilbur and Malaia 2008, 5)

Using event structure as a base, they state that gestures can be described to some extent using semantic components which are found in SL analysis<sup>31</sup> (cf. also Sandler

<sup>30</sup> We could relate this also to McNeill’s (2000, 5) notion of “conventional only in the broadest sense”.

<sup>31</sup> [...] the kinematic patterns of sign formation systematically reflect fairly abstract conceptual and semantic components of event structure within the context of predicate signs. Further analysis [...] indicates that what might be called the sign ‘stroke’, parallel to the gesture stroke, has internal structure that can in fact be systematically and sequentially identified with (1) the inception of an event (e.g. loss of contact between two hands, or rapid acceleration of one hand away from the other or a location in space), (2) the dynamic portion of the event (extent/path, manner), and, if appropriate, (3) the completion of an event (the rapid deceleration we have documented above). The argument for considering there to be internal structure is that either the inception, or the completion, or both, must be perceptually *marked* (rapid acceleration or deceleration). Movement which begins and ends evenly does not permit postulation of internal subevent structure. It is likely then that some gestures are not ‘unanalyzable’ but need to be further

2015 on the compositionality of body actions). As a result, the “non-analysability” of gesticulation becomes doubtful. This makes the whole subcontinuum 4 questionable.

#### 2.1.1.5 Disregard of the Diversity of Coding Strategies in Different Languages: An Example

An example of *gesticulation* is “he grabs a big oak tree and **bends it** way back” (McNeill 1992). Before making the gesture, the speaker had moved his right hand forward and slightly upward while opening his hand into a kind of C-shaped grip; all of this was preparation. The gesture then took place during the boldface stretch, with the hand appearing to grasp something and pull this imaginary tree back and down. (McNeill 2000, 1f).

The “bends it way back” lacks all linguistic properties. It is non-morphemic, not realised through a system of phonologically formal constraints and has no potential for syntactic combination with other gestures. We can demonstrate the inapplicability of linguistic properties through a thought experiment. Imagine another person saying the same thing but with “it” meaning the corner of a sheet of paper. Then, rather than the hand opening into a grip, the thumb and forefinger would come together in a pinch; rather than the arm moving forward and slightly up, the pinching hand would be held slightly forward and down; and rather than pull the arm back, the pinching hand would rotate. Also, this gesture would naturally be performed with two hands, the second hand ‘holding’ the paper that is being bent back. That is, none of the formal properties of the first gesture would be present in the second gesture, bends-it-way-back though it is. Neither gesture in fact obeys constraints within a system of forms; there are only constraints that emerge from the imagery of the bending itself. The handshake and position are creations of the moment that reflect the speaker’s imagery – of a character from a story reaching up and pulling forward to pull back a tree, of someone turning down the corner of [a] piece of paper. The ASL sign TREE, in contrast, *is* constrained by the phonological properties of the ASL language system. (McNeill 2000, 3)

In the bending back gesture, we understand from the meaning of the gesture as a whole that the hand (one of the ‘parts’) equals the character’s hand, the movement (another part) equals the character’s movement, and the backward direction (a third part) equals the character’s backward movement. These are not independent morphemes. It is not the case that the hand in general means a hand or movement backwards must always mean movement in that direction [...] In speech, on the other hand, the event of the character bending back the tree was constructed out of independently meaning-

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investigated to identify possible components. Indeed, if one is to take seriously the argument that gestures are the forerunners to language, with mediation through sign languages [F.D: this relates to the proposal in Armstrong, Stokoe and Wilcox 1995], it is practically an imperative that some gestures are analytical in order to permit the development of sign *language* with its clear phonological and morphological structure. (Wilbur and Malaia 2008, 8)

ful words or segments organised according to a standardised plan or syntax. (McNeill 2000, 5)

In evaluating this argumentation, we have to consider first that McNeill refers to co-speech gesticulation. Nevertheless, we can identify relevant shortcomings: First McNeill assumes that the bending back of tree or paper will be coded by one and the same verb in all SpL languages as it is possible in English. This is rather improbable: at least some languages would have to use a verb which specifically codes the action more exactly, or that it was performed “by hand”, or a classifier which codes e.g. the dimensionality of the object.

Second, we need to be aware that the fact that bending back a tree vs. bending a paper may almost obligatorily be differently coded in an iconic visual sign system is not an argument against the conventionalisation of these different codings: It is simply a convention in such systems that these different actions are coded differently.

Third, even in English it is not completely clear what “bend” means: does it mean “to fold” (which could not apply to the tree) or “to break” (which could not apply to the paper). We can therefore not exclude the interpretation that the gesture is used as a specific information the speaker wants to give in order to transmit the exact information of the event. In this case it was a visual sign used simultaneously with the spoken sign. Due to its rigid exclusion of visual signs, SpL grammar does not consider such possibilities though they are not this rare.

Fourth, McNeill proves himself that the parts of the bending back activity can be identified and obviously contain information about details of the action not coded in accompanying speech. That is, they are meaningful components of a sign as an image. It is also clear that the speaker would not have performed a forward movement if the movement in question would have been one backward. In this case he would have used a movement contrasting to the original forward one. The same is valid for the handshape: If the speaker would have wanted to display that the tree could have only been bent away by two hands, he would have shown that by moving both hands jointly. If the speaker would have lacked any information about the real action, he would have selected his prototypical image of “bending”, constructed by using relevant components representing several aspects of the action.

We can conclude that even a partial set of the so-called co-speech gesticulations underlies an implicit system of coding visual signs of the image or icon type. The many dimensions of detailed visual signs and their character of images or icons have distracted SpL linguists as well as McNeill from accepting them as signs. Instead of pointing to this detailed structuring of visual signs compared to acoustic (spoken) ones, McNeill denounces it as deficient, compared to what he thinks are signs of spoken language;<sup>32</sup>

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<sup>32</sup> Cf. e.g. the statement that the visual codings are “creations of the moment”, as if a SpL sentence would not be of that category. He also devaluates constraints which “emerge from the imagery”. This phrase is descriptively not adequate: McNeill ignores the major constraint for visual signs of the image type: ‘Do

this includes the devaluation of signs which are images or icons against those which are symbols.

If we imagine a coding of the bending back scene in a SL, the bending would be coded by a verb showing at least the same components as described for the co-speech visual sign. One essential difference is that all possible SL coding dimensions are described in a grammar, the rules of which can be detected by asking any native signer:<sup>33</sup> Communities of SL users have optimised the rules for coding single items as well as scenic representations, following rules of economy, clarity, and functionality just as communities of SpL users have done that for their acoustically transmitted codes.

The production of signs which are visual icons (images, diagrams, and metaphors/metonymies) is a universal human ability. It is based on our universal kinaesthetic cognition. Therefore, some parts of this cognition, e.g. the dimensions of up and down or directions like forward and backward are universally respected – and also used as conceptual metaphors – while others, e.g. space in general and time can differ from each other culturally, related to the ascription of different importance to their components. Signs which are visually iconic show a similar variability.

## 2.2 Kendon

Kendon (2014, 1–3) refers to the history of sign language linguistics. He repeats what we can call a topos of newer SL research, namely that the early SL linguistics

attempts to show that sign languages can be analysed, at least grammatically, in the same way as spoken languages can be, and efforts have been made to argue that even the iconic or expressive devices that Hockett mentions and which, as he says, lack cinematic structuring, after all somehow do show this. There was an ideological agenda behind these efforts, however, not just a scientific one. This was an agenda that derived from the moral superiority attributed to what is counted as being ‘truly linguistic’. (Kendon 2014, 2)

With this evaluation as “an ideological agenda”, Kendon – without presenting any argumentation of his own – denounces the attempts of early SL linguists to integrate findings in SL into the existing language typology by creating notions like „classifier” or “locus”, even accompanied by proposals to broaden language typology in order to cover all phenomena found in SL. These attempts may have not all been adequate, but they are now devaluated as a whole by taking over Liddell’s interpretation of so many SL phenomena as “gestural”. He follows Wilcox (2004a) who

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not use coding parameter values which violate your reconstruction of the scene or – in case of lacking knowledge concerning the real scene – the prototypical image of the scene.’

<sup>33</sup> McNeill accepts lexical visual signs which represent objects (i.e. nouns): He states that the ASL sign TREE “iconically depicts a kind of schematic tree” und “iconicity is conventionalized and constrained” (McNeill 2000, 2). It remains unclear whether he considers SL verbs being of the same category.

reminds us, many of the attempts to analyse sign languages just as if they are spoken languages – compelling them, as it were, to fit a model of language reared through the analysis of spoken languages – meant that many features of what signers actually do when constructing utterances either had to be overlooked or represented as something that they were not. (Kendon 2014, 2)

Therefore, though pleading for a new, broader perspective on “language”, Kendon takes over the assumption that structural linguistics “should be modified for the description of sign languages”:

It is becoming recognised that gradient or analogical forms of expression, the use of pantomime and pictorial depiction through bodily movement, spatial inflections of individual signs and of units of signed discourse, and the possibilities of complex simultaneities in expression, all play integral roles in signed discourse. (Kendon 2014, 3)

Here he repeats the presentation of SL by Liddell, especially accepting his proposed criterion of gradience and the ascription of “analogue” as the quality of SL elements. He even takes over Liddell’s claim that “spatial inflections” cannot be seen as linguistic. Referring to Liddell and Johnston et al. 2007, he concludes

If we accept, as surely we must, that utterances produced by living language users (speakers or signers [...]) in the ordinary co-present circumstances of life – diverse as these may be – always involve the mobilisation of several different semiotic systems in different modalities and deployed in an orchestrated relationship with one another, then we must go beyond the issue of trying to set a boundary between ‘language’ and ‘non-language’, and occupy ourselves, rather, with an approach that seeks to distinguish these different systems, at the same time analysing their interrelations. (Kendon 2014, 3)

This general statement could be accepted in principle but connected to the earlier taking over of Liddell’s conception of what is linguistic or not, it has to be refused on the grounds I discuss below. Presenting examples from manual (and nonmanual) activities during speech, Kendon writes:

I began this paper by discussing how sign language descriptions that used an analytic model borrowed from structural spoken language linguistics were not fully appropriate. This led to the idea that the concept of ‘language’, as it developed in academic linguistics in the first part of the twentieth century, is too narrow. If sign languages are to be considered true languages, and yet they are found to use modes of expression that cannot be accommodated by models derived from the description of spoken languages, then these models should be revised and our concept of ‘language’ should be changed,

accordingly. This, in turn, has suggested that spoken languages may also deserve a new model. In recent decades, it has become a commonplace to observe that, when speaking, speakers do more than utter words. They also engage in various kinds of visible bodily actions that are integrated with the activity of speaking. If this is looked upon from the point of view of how these actions contribute to the utterance as the speaker constructs it in the moment of interaction, a point of view I have tried to put forward here, it becomes clear that speakers also make use of the dimensions of expression that visible bodily action makes possible. Often this is done in ways that can be compared with the ways signers make use of these dimensions. A new model of language that might incorporate these aspects, however, would be a model that would accommodate language as a mode of action, rather than treating it as an abstract, quasi-static social institution. That is to say, *linguaging*, or *doing language*, would become the object of study [cf. 47]. In such a case, how visible bodily action is used in utterance construction by speakers becomes as much a part of the study of speakers as, necessarily, it is already a part of the study of signers. (Kendon 2014, 12f)

We have to analyse this text in-depth, in order to discover its complete meaning as well as necessary further considerations: The first argument is that SpL linguistics methods are not completely appropriate for the analysis of SL. This argument can be interpreted from different perspectives. If we choose the perspective that the findings about SpL given so far define a priori what can be evaluated as language<sup>34</sup>, we need not wonder that SL cannot be considered “languages” as a whole. Taking this perspective, however, has as its trivial consequence that it cannot be guaranteed that linguistic methods developed for and with SpL will – rigidly and unchangedly applied – prove valid for another language type. The reason for excluding SL with this method does not come from SL’s lacking of language properties but from a too restricted assumption, namely that all languages have to equal SpL.<sup>35</sup>

If we take the perspective to construct a linguistic theory which postulates that it should be able to provide the instruments to analyse all languages, we have to choose another procedure: We have to abstract our methods to be adequately applied to all known languages, especially SL. One example for this is the application of the minimal pair analysis in phonology, morphology, or syntax: If we decide to apply it also for simultaneously ordered elements (as it is already done in SpL phonology, cf. below),

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<sup>34</sup> An example is Corbett’s 2006 definition of agreement: “Agreement in language relates to the correspondence between words in a sentence, in terms of gender, case, person, or number.” (book advertisement at <http://www.cambridge.org/at/academic/subjects/languages-linguistics/morphology/agreement?format=PB&isbn=9780521001700>).

<sup>35</sup> To illustrate that with a trivial example: If we define humans via their sex as only male or female, we fail to cover all humans. It is then not the “fault” of intersexuals that they cannot be evaluated as humans, but it is the fault of the analyser who uses inadequate instruments.

then the abstract method itself need not be changed and it can be fully applied to SL (this seems to be one main argument for the statement that “spoken language linguistics [methods] were not fully appropriate”). If we deny a simultaneous application [as Johnson and Liddell (2010) do], we end up with the inadequate evaluation of SL as described above. In my view, early SL linguists like Mandel or Stokoe had in mind such an abstract theory of language which covers both SpL and SL.

Kendon is right when he argues for a widened view on SpL as he describes it. But he transfers this more comprehensive view of SpL inadequately to SL, using Liddell’s interpretation of what is gestural. Kendon – like all other followers of the Gesture School’s view – does not discuss the fact that the relevant question concerning the language-gesture-system in SL is not whether it exists (it does) but to which extent we find gestures in SL texts and how they are operationally definable.

Kendon deduces from his first argument as analysed above that the traditional “concept” or “model” of language is “too narrow”. By that, it seems, Kendon takes the second perspective described above. He proposes even to change the model for spoken languages in the light of SL research. This is exactly what I have tried to show with McNeill’s “bend back” example as well as with my proposal for several speech-framed gestures. Kendon is right when he argues for a widened view on SpL as he describes it.<sup>36</sup> But he transfers this more comprehensive view of SpL inadequately to SL, using Liddell’s interpretation of what is gestural.<sup>37</sup> Kendon – like all other recipients of the Gesture School’s view – does not discuss the fact that the relevant question concerning the language-gesture-system in SL is not whether it exists (it does) but to which extent we find gestures in SL texts and how they are operationally definable. In contrast, he states “that speakers also make use of the dimensions of expression that visible bodily action makes possible.” (Kendon 2014, 12). With the next sentence he first states a similarity between signers’ and speakers’ bodily actions – which is phenomenologically true, naturally: „Often this is done in ways that can be compared with the ways signers make use of these dimensions.” (Kendon 2014, 12). Then he implicitly presumes that they are the same in status and/or function, i.e. gestural. This interpretation we can derive from the following parts of the text:

A new model of language that might incorporate these aspects, however, would be a model that would accommodate language as a mode of action,

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<sup>36</sup> Therefore, we do not need to oppose the above as well as Kendon’s following general statement, because it is much the same as Hockett’s (1978: 276; cf. above): “That is to say, languaging, or doing language, would become the object of study [...]. In such a case, how visible bodily action is used in utterance construction by speakers becomes as much a part of the study of speakers as, necessarily, it is already a part of the study of signers.” (Kendon 2014, 12f)

<sup>37</sup> It is not completely clear whether Kendon follows Liddell in every of his evaluations of the language status of SL elements. It is only by recalling a quotation from above partially, that, from the general description of the possible candidates for an evaluation as “gestural”, we can conclude that this is very probable: “[...] gradient or analogical forms of expression, the use of pantomime and pictorial depiction through bodily movement, spatial inflections of individual signs and of units of signed discourse, and the possibilities of complex simultaneities in expression, [...]” (Kendon 2014, 3)

rather than treating it as an abstract, quasi-static social institution. (Kendon 2014, 12)

To “accommodate language as a mode of action, rather than treating it as an abstract, quasi-static social institution” can also be done without taking over the view of the Gesture School on SL (for an alternative view cf. Wilcox 2005 and the general conception of language by Cognitive Linguistics).<sup>38</sup>

Kendon’s “mode of action” equals Liddell’s “language signal” which comprises linguistic and gestural elements (see below).<sup>39</sup> But as long as scientists differentiate between “language” and “gesture”, a cover term does not relieve us from the decision which elements in SpL and SL texts do have language status, and which do not. We could only abandon such a decision if we assume that all phenomena which appear within Kendon’s “language mode of action” or Liddell’s “language signal” are steered by the same system (“grammar”) and all underlie the same principles of a unique linguistic or semiotic theory.

### 2.3 Excursus: Does Traditional SpL Grammar Lack an Adequate Description of Speech-framed Gestures?

Related to the question of language status, the so-called “speech-framed” “speech-slotted” or “speech-linked gestures” pose a problem not only to gesture research but also to SpL linguistics: Structurally, these visual signs alone fill a slot in an otherwise incomplete syntactic structure of acoustic language signs or a slot for additional information, necessary for the sake of complete understanding. They can appear sequentially within the structure of the acoustic elements or simultaneously with them (for references cf. Müller, Bressemer and Ladewig 2013, 709). Because of their visual character they are evaluated as “gesture” in the context of SpL by definition, a practice which was never challenged in SpL linguistics. Therefore, they are evaluated as “non-linguistic”, though they give additional information which is not contained in the acoustic part of SpL. Sometimes this information is even crucial for a successful communication. Three main

<sup>38</sup> We could also say that – especially from a usage-based linguistic model of language – the language part in this comparison, set up “as an abstract, quasi-static social institution”, does not comply with actual linguistic theory any more.

<sup>39</sup> Looking at the abstract of an earlier publication by Kendon, we find a position which tries to integrate language and gesture but remains indifferent about the extent of these phenomena in SL texts. The statement also becomes questionable with its emphasis on “visible bodily action” in order to separate SL from the set of all languages, using its “kinesics” and “visibility”: “In recent discussions there has been a tendency to refer to ‘gesture’ and ‘sign’ as if these are distinct categories, sometimes even as if they are in opposition to one another. Here I trace the historical origins of this distinction. I suggest that it is a product of the application to the analysis of sign languages of a formalist model of language derived from structural linguistics, on the one hand, and, on the other, of a cognitive-psychological view of ‘gesture’ that emerged in the latter half of the twentieth century. I suggest that this division between ‘gesture’ and ‘sign’ tends to exaggerate differences and obscure areas of overlap. It should be replaced by a comparative semiotics of the utterance uses of visible bodily action. This will be better able to articulate the similarities and differences between how kinesics is used, according to whether and how it is employed in relation to other communicative modalities such as speech.” (Kendon 2008, 348)

groups of these elements are the directional (“pointing”) gestures, the gestures coding size and/or form of an object, and signs which demonstrate a certain action; all having sign status, being of indexical or iconic type.

Concerning obligatoriness in SpL, they can be replaced by acoustic SpL signs at any time (e.g. “there, left ahead of the traffic signal” or “has the form of a rectangle with a width of 1 meter” or “you have to handle this with your fingers around the shaft”), i.e. are variants of SpL signs. Both variants can also be used simultaneously (this makes some visual elements redundant). Concerning markedness, the visual variants may be evaluated as marked, related to SpL grammar,<sup>40</sup> but as they are the more expected variants rather often, due to economy (time of production and exactness, compared to rather long and complicated spoken descriptions) and related to the situational context,<sup>41</sup> they may be evaluated as communicatively unmarked.

Considering the communicative function fulfilled in both SpL and SL, communication participants need sufficiently exact information about the location of an object or a direction/position in space mentioned in discourse concerning the actual physical situation. Only this information allows correct understanding. It can – aside with others – be performed by visual deictic signs. These work by identifying directions in three-dimensional space (including abstract or metaphoric use). This function is universal and needed for any communication act which is not intended to mislead the addressee. Therefore, the signs possess a unique specification concerning coding: Their directional part is directly determined by the direction towards the respective object (cf. Wrobel 2001). This uniqueness can be proven by the fact that addressees cannot “repair” an incorrect direction like mispronunciations of other SL or SpL signs.

Visual pointing is performed in SpL and SL, but its status is different concerning obligatoriness and function: In SL, the visually indexical elements are obligatory in unmarked presentational contexts (except in cases where deaf communication partners would like to avoid that another person sees their pointing, or in cases where a more explicit explanation is given, naturally also visually), they are additionally used in abstract (situationally independent) contexts and for the coding of pronouns. All these uses can be described by grammatical rules.

Size and form can also be coded in SpL and SL. In both language types, there are morphosyntactic slots which have to be obligatorily filled, but only in SpL there is a possibility to choose an acoustic and/or visual sign. Again, there are differences concerning obligatoriness and function: In SL, visual iconic coding is more or less obliga-

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<sup>40</sup> The visual variant of size, form, or action presentation is very often marked by a lexeme or phrase like “so” or “this way”. This may be interpreted as making the recipient aware of the change in the modality of coding.

<sup>41</sup> Cf. instructions of use in written language only with ones which use drawings or even videos. SpL variants are usual for situation-independent communication or technical/scientific contexts.

tory.<sup>42</sup> In SpL size and form can be expressed by acoustic signs which are in almost all cases symbolic, and/or realised by iconic visual signs (i.e. the acoustic and visual mode can be synchronised).

Typologically, for obligatory structural slots, basic indexical and iconic visual coding patterns are obligatory in SL; in SpL there is a context-dependent choice between acoustic or visual signs. Special information has to be coded by acoustically lexical signs in SpL and visually lexical signs in SL.

Confronted with the fact that acoustic or visual signs may fill certain structural slots in sentences, the representatives of the “Gesture School” get into trouble when they should argue why these signs – coding more or less the same information in different modes – should have different language status. The way out of this dilemma, in my perspective, is to differentiate the evaluation of “non-linguistic” because it is too general: it would be better to use the terms “(non-)SpL-linguistic” or “acoustically (non-)linguistic”<sup>43</sup> and “visually (non-)linguistic”. This would allow to accept a combination of SpL- and SL-signs – both “linguistic” – for some types of spoken speech acts which are rather marginal concerning their status in SpL grammar but rather frequent in everyday communication (cf. Clark 2016). “Non-linguistic” would then be a term for phenomena which are excluded from every conceivable language.

Using this difference, we could evaluate “speech-framed gestures” in SpL description-adequately as “facultative visual signs for obligatory slots of SpL phrases”, assuming that such cases should be described in complete SpL grammars.<sup>44</sup> The corresponding visual elements of SL would keep their status of “visually linguistic”, due to the fact that they are easily describable in SL grammars.

## 2.4 Liddell’s Transfer of “Gesture” to SL and its Reception by Gesture Researchers

Kendon, McNeill, and many other authors emphasise that SpL and gesture are cognitively associated (cf. from a neural perspective Healey and Braun 2013). How the relation between “language” and “gesture” could be interpreted for SL,<sup>45</sup> was first discussed extensively by Liddell (2003). As there was no preceding systematic discussion of the notion of “gesture” within the context of SL, we have to assume that Liddell

<sup>42</sup> I suppose that in different possible variants, we always find iconic coding as the preferred or the only possible strategy, except for information on colour or an exact measurement which have to be done via SL lexemes.

<sup>43</sup> The fact that still many SpL-oriented introductions to language and linguistics ignore SL (cf. Eifring and Thiel 2005, 1, Lehmann 2013) is a strong argument that “non-linguistic” is implicitly defined in the restricted sense of “acoustically non-linguistic”.

<sup>44</sup> “[...] co-speech gestures can fulfil syntactically as well as semantically attributive functions in German [...] This implies that they must be seen as part of the subject of German grammar.” (Fricke 2013: 735)

<sup>45</sup> Kendon (2016, 34) describes gesture accompanying SpL as “kinesics in partnership with speech” and SL as “systems for kinesic discourse”.

simply transferred the notion of “gesture” – which the gesture researchers had intended to define for SpL – to SL, probably because of the obvious similarity of the respective SL elements with gestural elements accompanying SpL. This transfer was performed although the separation of “language” from “gesture” in SpL, usually done by the definition that they occur in different modes, is logically excluded for SL as there is only the visual communication mode. It seems that Liddell tacitly assumed that “gesture” combines with SL, occurring either in a “co-sign” or a “sign-framed” context. This transfer includes McNeill’s usage of “conventionalisation”.

However, compared with gesture research and McNeill’s criteria, Liddell also changed several points proposed by McNeill:

- He ignored the fact that McNeill’s gesture types are defined via the presence or absence of speech.
- He introduced a dichotomy of language vs. gesture, valid for SpL as well as SL.
- Perhaps the most crucial point is that Liddell ignored McNeill’s criterion for language status, namely that only language elements can combine to units of a higher order.

Further, he did not consider the sign types of image, icon, and symbol.

This approach resulted in the implicit assumption that “gesture” in SL is principally the same as in SpL.<sup>46</sup> Reversely, Kendon (2005, 311–324) as well as McNeill (cf. McNeill and Duncan 2005) took over Liddell’s assumptions and conclusions without any verification as they obviously had no research of their own.

## 2.5 Recent Approaches Concerning Language “as an Activity of the Whole Body”

### 2.5.1 “Composite Utterance”

Taking the task “to infer what a person wants to say” (Enfield 2013, 689) as the most important one for the users of any language, Enfield describes the “composite utterance approach to meaning”. This approach confirms McNeill’s and Kendon’s hypothesis of a tight connection between language and gesture, insofar as it assumes that several activities in several channels of communication contribute to the meaning of a communicative act. However, Enfield’s findings relate to “speech-with-gesture composites” only. Methodologically, he identifies the notion of “conventional sign” with Peirce’s “symbol”, “non-conventional sign” with spontaneously produced unique “iconic” and “indexical” elements (Enfield 2013, 695; cf. quotation from page 696 above in 2.1.1.3).

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<sup>46</sup> This perspective has negative consequences for the linguistic analysis of central parts of SL texts: As soon as some parts are declared “gestural”, they are no longer investigated in necessary depth concerning SL grammars and typology. It may even become arguable that SL texts are not completely linguistically analysable.

For all deictic signs, he uses the SpL tradition which sees them as “form-meaning mappings whose proper interpretation depends partly on convention and partly on context (Bühler [1934] 1982, Jakobson 1971, Silverstein 1976).” (Enfield 2013, 696)

From this perspective, deictic signs, now called “symbolic indexical”, turn out to be a “hybrid” of “conventional” and “non-conventional” signs, constituted by a symbolic (= arbitrary) form, e.g. of a personal pronoun of a SpL like “him” as the conventional, and the “non-conventional facts unique to the speech event (e.g. whichever male referent is most salient given our current joint attention and common ground).” (Enfield 2013, 696)

Here, we have to discuss first how the notion of “conventional” could be applied to speech events: There are ritual speech events which follow a social convention, which we should differentiate from the social convention concerning a language. Even everyday single speech events can contain such rituals, like a greeting form or how to take turns in conversation. To apply “convention” to the fact which person or object in a speech event needs to be identified by which activity, does not make any sense. In contrast, it makes sense to ask whether there are (general) conventions of identifying persons or objects under specific communicative circumstances. Here the answer is: yes, naturally. One of the conventional means in SpL is to use a showing gesture. It belongs to the convention that an integral part of this showing gesture, which is an indexical sign, produces the correct direction which allows the speech participants to identify the respective person or object.

The description of “him” as an arbitrary symbol is incorrect: Already the choice of the speaker to use “him” depends on the communicative situation: Adopting the quoted sentence above, we have to say that the “non-conventional fact”, “unique to” a certain speech event, namely that the speaker has to index a male participant, influences the production of “him”; the same is valid for the role this participant has in the respective sentence: The role “determines” that the speaker uses “him” instead of a possible “he”. Therefore “him” cannot be evaluated as “symbol”. Its choice is as dependent on the single speech situation (or event context) as is its visual counterpart, the INDEX in SL. That the latter shows a high similarity to the showing gesture in SpL cannot be taken as proof that it is “gestural” (cf. below).

Summarising, we have to differentiate conventions concerning the identification of persons or objects in different communicative situations (which are indispensable for successful communication; we could call them “conventions of application”), the special identifying activity of a speaker or signer in a single communicative event (which normally follow one of these conventions), and the conventions about single signs in languages. The latter include a special convention as a principle for indexical signs: The user has to produce an indexical sign with at least one element which gives a hint to the object or person indexed by linking grammatical information to the scene. According to the pronominal system of SpL, this may be the gender of the actual person and this may be the direction in which the addressees can find the actual person.

Using Peirce's token vs. type differentiation, Enfield assumes that all signs have a token identity, but only conventional signs or parts of signs (i.e. the symbolic part of indexicals) additionally have a type identity (the tokens of which Peirce called "replicas"). This difference makes it possible to assign to conventional signs a meaning "independent of context" (Enfield 2013, 696):

Conventional signs are pre-fabricated signs, already signs by their very nature. By contrast, non-conventional signs (including non-conventional components of symbolic indexicals) are tokens but not tokens of types. They are singularities (Kockelman 2005). They become signs only when taken as signs in context. (Enfield 2013, 696)

Compared to standard modern language philosophy and Cognitive Linguistics, this is an old-fashioned view on language signs, also with its implicit assumption of "one form – one meaning": Wittgenstein has already stated the meaning of a sign is constructed in the respective actual use and its context. Therefore, the statement that a special class of things only become signs in a context where they are used as signs is either empty or trivial: Everything used as a sign becomes a sign only in the actual use and if its use follows a number of conventions (or breaks those conventions explicitly, as in the arts). Additionally, Enfield's dichotomy of "pre-fabricated signs" (which "possess" their being a sign "in their very nature", whatever this is) and "singularities" (which have to wait to become signs in an adequate context) construct a categorial difference which contradicts the assumptions of a "tight connection" between language and gesture and of transition zones between them.

Instead of taking both parts of the "composite utterances" as equally important, Enfield adopts the traditional SpL perspective, summarising that "encoded" (we could say: traditionally defined SpL) meaning is "enriched" by communicative indexical and implicature strategies:

[E]ncoded meaning" encompasses both lexical and grammatical meaning. Grammatical signs show greater indexicality because they signify context-specific ties between two or more elements of a composite utterance (e.g. grammatical agreement, case-marking, etc. or between the speech event and a narrated event (Jakobson 1971); resolution of reference left open either explicitly (e.g. through symbolic indexicals like *this*) or implicitly (e.g. by simple co-placement in space or time; thus a "no smoking" sign need not specify "no smoking *here*"). "Enrichment through implicature" refers to Gricean token understandings, arising either through rational interpretation based on knowledge of a restricted system of code (i.e. informativeness scales and other mechanisms for Generalised Conversational Implicature; Levinson 2000), or through rational interpretation based on cultural or personal common ground (e.g. Particularised Conversational Implicatures

such as those based on a maxim of relevance; Sperber and Wilson 1995).  
(Enfield 2013, 698)

Again, we find an old-fashioned dichotomy here: lexical and grammatical meaning are apparently interpreted as having a unique meaning in all possible instances of the same sentence or text, and the resolution of reference is separated from this meaning. Such a view does not respect the usage-based view that in communication two embodied cognitive systems (subjects) interact only on the basis of overt texts which are produced and understood from the experiences of these subjects with their language and not from an absolute meaning existing elsewhere, which has to be “re-interpreted” by the application of situational or contextual perceptions.

Related to SL, Enfield adopts Liddell’s and Okrent’s position:

The present account makes it clear that the visible components of a sign language utterance cannot be compared directly to the visible hand movements that accompany speech, nor to mere speech alone (i.e., with visible hand movements subtracted), but may only be properly compared to the entire speech-with-gesture composite (Liddell 2003; Okrent 2002). The unit of comparison in both cases must be the move. By the analysis advanced here, different components of a move in sign language will have different semiotic functions [...]: conventional signs with non-conventional signs, linked indexically. Take the example of sign language “classifier constructions” or “depicting verbs” (Liddell 2003: 261ff). In a typical construction of this kind, a single articulator (the hand) will be the vehicle for both a conventional sign component (a conventionalised hand shape such as the American Sign Language “vehicle classifier”) and a non-conventional sign component (some path of movement, often relative to a contextually established set of token spatial referents), where linking indexical mechanisms such as spatio-temporal co-placement and source in single creator are maximised through instantiation in single sign vehicle, i.e., one and the same hand). (Enfield 2013, 702)

We find the same relationship between a general scientific assumption and its biased application which leads to inadequate statements about SL: The “composite utterance” approach is interesting and could be applied adequately if we had a discussion about the relational extent of the gestural “singularities” and the language signs within texts. For SL, Enfield – adopting Liddell’s model – evaluates movement paths which are “relative to a contextually established set of token spatial referents” as singularities, while SpL-grammar elements with the same function and also including an indexical element, namely to identify e.g. the role of participants are seen as stable signs (at least partially). Enfield does not see that the spatial “singularities” follow the same rule as the grammatical indexes of SpL, namely: “to produce the indexical sign with at least one element which gives a hint to the object or person indexed by linking grammatical information

to the scene". In my perspective, Enfield's analysis proves the SpL bias in SL analysis which is mainly driven by the fact that spatial coding elements are taken as a priori non-linguistic because their production conditions deviate from those of SpL elements.

### 2.5.2 "Grammar of Gestures"

Müller, Bressemer, and Ladewig specify Kendon's description of gestures which "manifest deliberate expressiveness" and gesture families (Kendon 2005, 15), abandoning McNeill's view of gestures as "global and synthetic" assuming "that the articulation of shapes, movements, positions and the orientation of hands, fingers and arms is meaningful." (Müller, Bressemer and Ladewig 2013, 708)

That is, they adopt analytical methods developed in SL research more or less for gesture analysis and use the concept of "embodied conceptualisation" as a tool to analyse the iconic and indexical components of gestures. Like Enfield, they take up the traditional view of SpL linguistics when they see their work as

a cognitive take on the process of ad hoc meaning construction in the flow of a discourse: "*Meaning construction* is an on-line mental activity whereby speech participants create meanings in every communicative act on the basis of underspecified linguistic units." (Müller, Bressemer, and Ladewig 2013, 709)

Concerning the status of gestures, they state:

We consider gestures to be a core partner in this interactive process of meaning construction, but we are *not* regarding co-verbal gestures as linguistic units in the full-fledged sense. However, we do take the position that gestures may take over functions of linguistic units either in collaboration or in exchange with vocal linguistic units. (Müller, Bressemer, and Ladewig 2013, 709)

They specify this by listing evolutionary and developmental as well as phenomena of interaction between gesture and SpL:

[F]irst: co-verbal gestures show properties of form and meaning which are prerequisites of language and which [...] may evolve into a more or less full-fledged linguistic system such as a sign language or an alternate sign language [...] Second, when used in conjunction with speech, co-verbal gestures may take over grammatical functions, such as that of verbs, nouns, or attributes pointing to a multimodal nature of grammar. (Müller, Bressemer, and Ladewig 2013, 711)

Here we find the view of SL which is adequate in my perspective: There are many "family resemblances between gesture and SL, but SL should be analysed with the assumption that it is a "more or less full-fledged linguistic system".

Abandoning McNeill's view of gestures not combining and following Kendon's findings, Müller, Bressemer, and Ladewig write:

Taking a form-based view on gesture analysis [...] involves the consideration of linear patterns and structures of the gestural movement. [...] Pioneering work by Kendon (1972, 1980) documented that gestures are structured linearly. Kendon distinguishes units of varying sizes, ranging from gesture phrases to gesture units to posture shifts. He finds, moreover, that this hierarchical structure of units of body movement goes along with a similar hierarchy in the speech units they accompany. [...] [T]he more body parts involved in the movement changes, the larger the conversational unit they go along with (Kendon 1972, 1980). (Müller, Bressemer, and Ladewig 2013, 722)

They describe the following types of gesture combinations:

- (i) One gesture might be repeated several times, resulting in the repetition of the same gestural meaning (iteration) or in the creation of a new gestural meaning (reduplication).
- (ii) Several gestures depicting objects, actions, events in a literal (McNeill's iconic) or metaphoric manner (McNeill's metaphoric) may combine to describe an entire scenario.
- (iii) Several pragmatic and performative gestures (the Ring Gesture, the Palm Up Open Hand [...], the Away Gestures) may combine. They are typically found in argumentative discourses.
- (iv) The three types might combine, with pragmatic and performative gestures often located at the beginning or end of speaking turns (very often with metapragmatic functions) and depictive gestures often placed in the middle of gesture sequences.

(Müller, Bressemer, and Ladewig 2013: 723)

Though working exclusively on SpL, Müller, Bressemer, and Ladewig offer a model of language-gesture analysis which could also be adopted for SL.

### 2.5.3 A “Unified Grammar of Gesture and Speech”

Fricke 2013 – also concentrating on co-speech gestures – resorts to a SpL linguistics tradition assuming the multimodality of language (Wundt, Bühler, Hjelmslev, and Pike) and argues for a “unified grammar of gesture and speech”. She analyses the arguments against co-speech gestures as “potential units of the language system”, namely their lack of conventionalisation and segmentability (Fricke 2013, 734). She tries to invalidate them by pointing to emblems and the possibility to analyse gestures by “kinesthemes”, i.e. “submorphemic units, which [allow] for modeling semiotic processes of typification and semantisation” as well as for developing “gestural constituent structures”:

This concept [of kinesthemes, F.D.] supports the assumption of a “rudimentary morphology” (Müller 2004: 3) as well as substantiating the category of “recurrent gestures” located between idiosyncratic and emblematic gestures in Kendon’s continuum. (Fricke 2013, 735)

According to Fricke, co-speech gestures have to be dealt with in SpL grammar, as they show essential linguistic properties, such as recursion. However, the questions how far this “rudimentary morphology” can be interpreted functionally, and whether the use of gesture in SpL is fully compatible with grammar, remain open.

These new developments in gesture research show interesting new facets of gesture use in SpL which offer new approaches to SL research if we avoid taking over the existing interpretation of the percentage of gestures in SL texts promoted by the Gesture School.

### 3 Liddell’s Model

In the last chapter of his book, Liddell summarises his view of SL:

I have been describing the ASL language signal as consisting of combinations of signs, grammatical constructions, gradience in the signal produced by the primary articulators as signs are produced, and gestural activities independent of the primary articulators. (Liddell 2003, 357)

This view comes from SpL-linguistics, where Liddell evaluates meaningful, but “gradient” acoustic elements as well as meaningful gestures – though accepted as parts of the speech signal – as having no language status. Gradience and production in the visual channel are here taken as criteria for the decision on the linguistic status of communicative elements. Applying these two criteria to SL, Liddell excludes manually produced elements by their gradience and non-manual elements by their postulated identity with gesture in SpL context from the set of language elements.<sup>47</sup>

Liddell’s presentations are not completely clear, however. He declares that in the field of intonation there are “linguistic” (= categorial) and “paralinguistic” (= gradient) areas (Liddell 2003, 71). But it seems that he only accepts segmental tone (as in tone languages) as “linguistic” (Liddell 2003, ix–x).<sup>48</sup> Concerning SL, he summarises his standpoint as follows:

The analyses in this book treat directional uses of signs as gradient and gestural phenomena driven by grammar and by meaning construction. Attempting to characterise the use of space in ASL involves an integration of

<sup>47</sup> Looking at the quoted text in detail, it seems that Liddell does not even ascribe sign status to these non-linguistic elements.

<sup>48</sup> The only argument he poses there against the language status e.g. of syntactic intonation is that it is very rarely investigated. That is, the practice of research replaces linguistic criteria.

grammar, gesture, and gradience in the process of constructing meaning by means of mental space mappings (Liddell 2003, xi)

As a consequence, a crucial part of spatial coding strategies in SL – these are central to SL coding – is excluded from having language status.<sup>49</sup> This means that none of the related phenomena can be described categorically. Combined with Liddell’s statement that the use of space represents the “major difference” between SL and SpL, this illustrates the massive SpL bias against SL. To quote from the final chapter:

[T]he ASL language signal consists of more than conventional linguistic forms. It also includes gradient aspects of the signal (typically directional aspects or placement), and gestures of various types. All of these coordinated and integrated activities constitute the language signal and contribute to expressing the conceptual structure underlying the utterance. There is no evidence that signers give more significance to grammatically encoded meanings than they give to other meaningful aspects of the signal. [...] The gradient and gestural aspects of the signal are not peripheral or paralinguistic. They are required to be present and central to the meanings being expressed. In the case of ASL, restricting the analysis of language to symbolic units and their grammatical organization is hopelessly inadequate. (Liddell 2003, 362)

One could agree with Liddell when he argues for a comprehensive understanding of “language”, including all elements which are important for the construction of meaning. He even writes that the gestural elements of SL were neither “peripheral” nor “paralinguistic”.<sup>50</sup> On the other hand, he constructs a fundamental difference between “categorical” and “non-categorical” elements, implicitly relating categoricity and – using McNeill’s criterion – conventionalisation. But, while the non-categorical elements in LS had only marginal status, they were central in SL (Liddell 2003, xi and 357).<sup>51</sup> Why,

<sup>49</sup> I do not aim to deny the existence of any gestural or paralinguistic elements in SL. E.g. angry or glad signing has a “paralinguistic” component. Additionally, gesture is used when the behaviour of a person is not coded by signs of SL but reconstructed using gestural elements in Constructed Action. Moreover, I do not deny gestural elements as sources for SL elements (cf. Wilcox 2005): “[S]ign languages evolve by a process that takes perceptually and productively distinct visual and motion characteristics and grammaticalises them into distinct units that convey lexical or functional meanings. Both the vocabulary and the structural processes that construct sentences are overlaid on the physical and geometrical substrata.” (Wilbur 2013, 244) I only want to restrict the extent of gestural elements to a methodologically adequate measure.

<sup>50</sup> The question is whether “language signals” should be compared to the entirety of all phenomena appearing in language production. Then it would comprise Saussure’s “langue” and “parole”, or Chomsky’s “competence” and “performance” (these notion pairs separate the “language part” (or the knowledge of the ideal speaker) from all what is irrelevant for the message). Or does “language signal” only mean the relevant parts?

<sup>51</sup> Hodge and Johnston give us a number of non-linguistic elements in normal SL texts: “We find that one-third of the core elements in the single clause-like units in these Auslan narratives are expressed via pointing signs, depicting signs, gestures and enactments, in various orders.” (Hodge and Johnston 2014, 262)

then, should these elements not have (sign) language status? Again, we see the SpL-bias illustrated when he states that ASL showed all types of lexemes and grammatical processes which can be found in SpL, adding:

Some signs have not only the properties one would expect of a word in a vocally produced language, but also additional properties such as the need to be directed toward some entity, the need to be placed within space, the need for the signer to direct his face and eye gaze toward some entity [...], or the need to perform constructed actions within a surrogate blend. (Liddell 2003, 355)

Liddell has never solved these inconsistencies.<sup>52</sup> Wilbur reacts to that, stating: “If gesture is not outside of language (as per Langacker 1991), what does it mean to say that something is gestural? If gesture is part of language, then gesture is linguistic.” (Wilbur 2013, 237)<sup>53</sup>

Liddell is also inconsistent in his use of “grammar”: It remains unclear whether his phrase “directional uses of signs as gradient and gestural phenomena driven by grammar and by meaning construction” (cf. the quotation Liddell 2003, xi, above) means, that “directional uses” are “steered” by grammar, while the “gestural phenomena” are “steered” by “meaning construction”,<sup>54</sup> or whether both phenomena depend on grammar as well as “meaning construction”. Once he relates “grammar” only to the “catego-

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<sup>52</sup> The text announcing Liddell’s book on the website of Cambridge University Press shows similarly unclear formulations: “In sign languages of the deaf some signs can meaningfully point toward things or can be meaningfully placed in the space ahead of the signer. This obligatory part of fluent grammatical signing has no parallel in vocally produced languages. [...] The book demonstrates a remarkable integration of grammar and gesture in the service of constructing meaning. These results also suggest that our concept of ‘language’ has been much too narrow and that a more comprehensive look at vocally produced languages will reveal the same integration of gestural, gradient, and symbolic elements. [...] [the book] Challenges customary notions of what constitutes ‘language’” (<http://www.cambridge.org/at/academic/subjects/languages-linguistics/sign-language/grammar-gesture-and-meaning-american-sign-language?format=PB&isbn=9780521016506>) Concerning the inconsistency in the use of “language element” and “element of the speech signal”, we find a parallel to Liddell in McNeill 2007b, who describes his “terminological tango”: once – following linguistics – “language” being separated from gesture, once – in “traditional use” – “language” containing “gesture” and “speech”. But then he restricts himself to SpL: “language includes spontaneous, speech-synchronised gestures”. This type of gesture “is certainly not ‘part’ of grammar (it is linked to the context of speaking in ways that grammar, because it depends on repeatability, cannot capture)”. (McNeill 2007b, 21)

Concerning SpL, there is a rather good correlation between non-linguistic/gestural and the notion of performance which means the individually or actually shaping of speech. What Liddell takes as gestural in SL has almost nothing to do with this performance; that is, he does not analogically reason from SpL to SL. Rather, he separates grammatical knowledge (e.g. related to the rules of spatial coding) from real production which he declares as “gradient”.

<sup>53</sup> Wilbur refers to a quote from Liddell (2011) she makes before the sentences cited:

“Since Liddell (1995) my published work has been carried out within the theory of Cognitive Linguistics, which does not treat gesture as being outside of language. When describing the pointing that frequently accompanies the English word *this*, for example, Langacker (1991: 102) states that “in cognitive grammar this gesture is unproblematically considered an aspect of the demonstrative’s form, and its import an aspect of its meaning.” Liddell [(2000)] argues that the directionality of indicating verbs and non-first person pronouns is gestural.” (Liddell 2011, 161)

<sup>54</sup> Even the exact difference between “grammar” and “meaning construction” remains unexplained.

rial” elements – cf. the quotation Liddell (2003, 362) above where he separates “grammatically encoded meanings” (= categorial) from gradient “other meaningful aspects of the signal”. Otherwise he states: “Knowing the grammar of ASL includes knowing that pronouns must be properly directed toward referents.” (Liddell 2003, 355)

Then he clarifies:

Since pronouns encode meanings, they are part of the symbolic inventory of ASL. The need to direct a pronoun [...] is also part of its lexical structure. A pronoun’s direction, however, does not depend on a set of symbolic locations or directions, but rather, depends on the locations of things in real space or in real-space blends. Instead of selecting from a grammatically defined list of possible directions, the signer must select a direction that leads to the pronoun’s referent either in real space or in a real-space blend. In this sense, the directionality of the finger during any particular instance of PRO<sup>>x</sup> is gradient. This places the specific direction outside the set of ASL’s symbolic resources since it does not encode – it points. For pronouns in general, the *need to point* is part of the grammatical knowledge but the specific direction of pointing is not. (Liddell 2003, 355)

This text shows two misunderstandings: The first relates to the coding type of indexical signs. They do not code the object as such but induce a relation to it. In SpL, this takes place via the production of acoustic deictic or anaphoric elements at appropriate positions within the sequentially processed text, sometimes accompanied by a pointing gesture. For reasons of salience their coding includes one or more specific properties of the object; e.g. gender and/or number. In SL the same strategy works visually only, by coding the position of or direction towards the object – phenomenologically an equivalent of the pointing gesture in SpL. Liddell uses two different terms, “encode” for elements which he evaluates as linguistic, and “point” for the indexical sign parts he evaluates as non-linguistic. But the difference is not one between linguistic and non-linguistic; it is one between symbolic and indexical coding. In referring only to the symbolic inventory of ASL, Liddell ignores that all languages have also an indexical inventory of signs (and that SL have a much greater inventory of iconic signs than SpL).

The second misunderstanding relates to visual coding via the localisation in three-dimensional space: An exhaustive description of three-dimensional space can only be done by using a system of metric coordinates with values along three axes. As it needs technical resources because humans do not have a respective “metrical cognition”, this sort of representation is only a very specific case in special contexts. In contrast, space is cognitively represented by salient “anchor” positions (e.g. a specific object) and – partially egocentric – local relations (e.g. “under” or “left”), sometimes with metrical information based on estimation from experience. In SpL, these are coded symbolically and/or deictically, the latter under specific conditions also iconically via gestures. Communication context and goal determine the accurateness of the coding from “come

down!” (within the context of joint knowledge of the communication partners about source and goal) to “the westernmost house in the northern part of the quarter”. Another possibility is the use of a general deictic, such as “there”, either with spoken description or pointing gesture.

For SL, the same possibilities exist. The only difference is that SpL cannot exploit a spatial resource for acoustic coding but refers to other resources, namely gender and number, while SL cannot exploit the latter and therefore uses the spatial resources. Liddell’s problem is the status of the element equivalent to the pointing gesture in SpL; for the solution cf. section 3.2.3. Liddell uses a terminological trick to establish a categorial difference between pronouns in SpL and SL: SpL pronouns “encode” because they are symbolic signs, while SL pronouns only “point”. By that he ignores that also indexical signs “encode”, they only do that in a different way than the symbolic or iconic signs. In other words: “pointing” is one valid strategy to “encode” information.

There is no language by which we could describe three-dimensional space using a “grammatically defined list of possible directions”. Therefore, not only SL users must resort to this space directly – by visual deictics – in their everyday practice of economic communication, but SpL users must do so, too.

It is economic that a visually coded language uses visual coding strategies and transports more visual information directly than an acoustically coded one: Space is constitutive for articulatory parameters in general and not only for localisation. To turn this basic visibility against the visual languages from a non-visual, acoustic standpoint, is a fatal mistake.

Liddell overlooks that there are deictic pronouns in both SL and SpL. The only difference is that SpL cannot exploit a spatial resource for acoustic coding but refers to other resources, namely gender and number, while SL cannot exploit the latter and therefore uses the spatial resources.

The following quote shows Liddell’s odd bias towards SpL, assuming that tongue and hands have to be used for the same coding strategies:

The fact that directional verbs can be directed toward entities, including physically present people, presents an analytical problem not faced in the analysis of a vocally produced language because the tongue does not meaningfully point at things in the environment as it participates in articulating words. (Liddell 2003, ix)

### 3.1 Liddell’s Methodological Prerequisites

Methodologically, Johnson and Liddell 2010 deny the possibility of modality-independent linguistic research by insisting that a minimal pair analysis can only be performed sequentially:

Claiming that ASL ONION and APPLE compose a minimal pair requires changing the definition to eliminate the concept of sequential contrast. How-

ever, once the concept of minimal pairs is defined differently for speech and sign, it is no longer the same concept. Thus, claiming that APPLE and ONION constitute a minimal pair is tantamount to claiming that they are equivalent to the pair [pat] pot and [tat] tot. But it appears so only because the fundamental definition of minimal pair has been altered in order to make it fit Stokoe's conception of the structure of APPLE and ONION. From this perspective, then, APPLE and ONION do not constitute a minimal pair in the same sense that the term has been traditionally used in describing vocally produced languages. (Johnson and Liddell 2010, 252)

Johnson and Liddell 2010 ignore that even in SpL we get simultaneous oppositions if we turn away from a phonemic notation towards one using distinctive features: There we get minimal pairs like /voiced/ vs. /voiceless/ instead of /b/ vs. /p/ (all other simultaneous features of both vowels being identical). This makes clear that the minimal pair method only makes sense as a general tool if we apply it sequentially as well as simultaneously. Then it can be used modality-independent for the identification of minimal contrast. Johnson and Liddell (2010) deprive themselves of an in-depth comparison of formational aspects of SpL and SL, however.

### 3.2 Liddell's Criteria for Language Status

Liddell's central criterion for the decision about the language status of communicative elements is "gradiance".<sup>55</sup> Aside from this notion, others like "(complete) listability", "one form – one meaning", the application of a modified version of Mental Space Theory and the transfer of the concept of "Constructed Action" to SL play a major role. The introduction of new terms for verbs like "indicating" or "depicting" helps to construct an almost a-priori segregation of language and gesture as intended.

The axiom behind the application of the gradiance criterion is that language elements are, without exception, categorial.<sup>56</sup> Categorial elements have to be identified by opera-

<sup>55</sup> Cf. Wasow (n.d.):

"The term "gradient" appears in dictionaries I have consulted only as a noun but is often used as an adjective by linguists. The noun "gradiance" does not appear in dictionaries; Wikipedia attributes its coinage to Dwight Bolinger. I use "gradient" (as seems to be standard among linguists) as a rough synonym for "graded" and as an antonym for "categorial"; I use "gradiance" as a nominalisation of this use of "gradient", denoting the property of being gradient." (Wasow n.d., 1)

In dictionaries, the meaning of "gradient" is described by "rising or descending by regular degrees of inclination" or "sloping uniformly". Usage examples can be found at <http://grammar.about.com/od/fh/g/gradienceterm.htm>.

<sup>56</sup> "I was taught that there was a real, legitimate distinction between linguistic phenomena and non-linguistic phenomena. The claimed contrast between these two categories suggests that there are logical criteria that can be used to divide communicative behaviours as either being linguistic or not. As best as I can determine, the term 'linguistic' as used by generativists includes categorial phenomena identifiable in the speech stream and excludes co-speech gestures and other gradient phenomena, including gradient phenomena within the speech stream (meaningful gradient changes in loudness, duration, pitch, vocal quality, etc.)." (Liddell, personal communication)

tional tests, such as minimal pairs, deletion, permutation, replacement etc. As Johnson and Liddell (2010) exclude simultaneous arrangements from morphological analysis (cf. above), the respective SL elements cannot get linguistic status in Liddell's model. Additionally, Liddell assumes that there is a distinct correlation of form and meaning for categorial elements.

### 3.2.1 Gradience

Even if I could not prove that Liddell's evaluations concerning gradience of SL elements are not tenable, there are opposite opinions in linguistics concerning Liddell's axiom that only categorial elements have language status.<sup>57</sup> Grammar and gradience are not only seen as compatible; especially Cognitive Grammar shows with the prototypicality of categories that gradience is inherent to cognitive processes (cf. Traugott and Trousdale 2010).

Liddell postulates gradience, from which he deduces his evaluation of "non-linguistic",<sup>58</sup> for two large areas of SL:

1. All codings which relate to position or movement of persons/objects in space, namely deictic elements (including personal pronouns), local adverbs, agreement, as well as spatial verbs and loci.
2. Verbal phrases with detailed visual elements as in so-called classifier constructions.

Signs of the first type contain a directional or positional part which is related to physical space or its use in signing. They represent the use of space for coding in SL prototypically, applying deictic and iconic strategies. Functionally, visual deictic signs or sign parts serve for the identification or localisation of referents or for coding their movement, in agreement verbs they serve for the identification of participant roles. Reference points (loci) are set by the signers in order to allow reidentification of referents during discourse.

Signs of the second type are iconic representations of concepts. Here, the representatives of the "Gesture School" again use a terminological trick in order to avoid a notion such as "iconic sign/language element"; cf. Dudis:

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"that in order to demonstrate that something is linguistic, one must show its categorial nature." (Liddell 2003, 70)

There are opposing opinions in linguistics, however, cf. Coetzee n.d., Traugott and Trousdale 2010, Kagan 2015, and generally:

"We must therefore ask whether the basic discreteness commonly assumed by linguistic theorists has been **discovered in** language or **imposed on it**." (Langacker 2008, 13; emphasis by the author)

<sup>57</sup> Cf. Bybee (2010, 2), Hay and Baayen 2005, 346), Wasow (n.d.) and Coetzee (n.d.) on the gradience of evaluations of grammaticality or acceptability, or Behrens (2015, 13).

<sup>58</sup> I do not consider the notion of "conventionalisation" in relation to the status of SL elements because Liddell 2003 does not use it; cf. Johnston 2014.

Signed language discourse exhibits depictions of virtually any entity. Some of these depictions arise via the use of the body, as in the depiction of human physical actions. Others also make use of space, as in the depiction of a spatial relation between two entities within a setting. That the body and space are the material with which both the depiction of actions and spatial relationships are produced is quite evident. (Dudis 2011, 3)

Liddell constructs gradience as follows: Because the hand can be posited at, directed or moved towards every point in space (this is valid similarly for other articulators like gaze or the body), the production of the respective elements cannot be restricted to a predefined, finite number of points or directions (cf. Liddell 2003, ix and chapter 3).<sup>59</sup> Because of the uncountable number of positions (i.e. geometrically defined points in space) it is impossible to subdivide space into a finite number of areas and therefore an assumed “location morpheme” cannot be sufficiently specified.<sup>60</sup> Instead, these location elements have to be rated as gradient and cannot be ascribed language status but a gestural one. As a consequence, the respective signs contain a constitutive gestural part.<sup>61</sup> Obviously, Liddell is not aware of the fact that the function of indexical elements of SL is not to divide the three-dimensional space as a whole into a countable number of sectors or an uncountable number of points, but either to show the position or movement of one or a few objects in space or to use such positions/directions for agreement and anaphoric purposes. I suppose that behind Liddell’s view we can detect

### 3.2.1.1 A Principal Misunderstanding of Human Orientation in Space and the Related Coding

Visual cognition is processed within a scenic view of events in the world. Within the scenes, we can steer our attention to certain single elements of the scene. At the same time, our scenic view is primarily socially (and egocentrically) grounded.<sup>62</sup> This “human coordinate system” includes positions for the ego (“I”), for ego’s dialogue partners

<sup>59</sup> “The fact that signs can be directed in an unlimited number of ways toward things which are not part of that language presents a difficult analytical problem. Specifically, the manner in which signs which use space are placed or directed is not listable in the grammar. [...] The problem which arises here relates to having a sufficient number of morphemes to correctly describe the ways that signs are directed in space. There cannot be a discrete morphemic solution, since there are too many possible locations and there could not be a morpheme for each possible location or direction.” (Liddell 2000, 344)

<sup>60</sup> Cf.: “As mentioned earlier, the linguistic system cannot directly refer to areas within gestural space [...]. Otherwise one runs into troubles listing an infinite number of areas in gestural space in the lexicon [...].” (Mathur and Rathmann 2012, 144)

<sup>61</sup> The direction and goal of the movement constitutes a gestural component of the sign. (Liddell 2000, 345)  
Because PRO can be directed in virtually any direction, a part of its phonetic form is not lexically fixed. (Liddell 1995, 24)

[...] the use of space in sign languages is carried out through a combination of linguistic features and gestural pointing. (Liddell 2000, 332)

<sup>62</sup> Cf. Wilbur (2013, 241f) and her quotation from Langacker (2013, 242).

(“you”) and others (“3<sup>rd</sup> person”). Coding of language is performed with respect to this “coordinate system” in which these positions are taken as a base which remains unchanged regardless of the locations of these positions in the three-dimensional physical coordinate system.<sup>63</sup>

In general, we must not confuse human perception of space with its geometric description (cf. Wilbur 2013, 223f). Only the first is the basis of codings in languages, including visual ones. As already mentioned, humans do not have a metrical perception and are incapable of identifying a point in space by its coordinates (e.g.  $x=150$ ,  $y=-23$ ,  $z=530$  mm) or to point to the specified position without technical instruments. Therefore, the human practice of “pointing to an object” should not be confused with selecting a point in space, geometrically determined by coordinates on three axes.<sup>64</sup> Its function is to give addressees sufficiently exact information to identify an object referred to.<sup>65</sup> This is done by coding the direction towards the object (normally without coding any distance). Due to practical communicative and linguistic conditions and limits, there are only a few (normally up to three) objects represented in one communication act (cf. Wilbur 2013, 227f).

As there is no real “point”, then, in coding, the whole discussion on the linguistic status of loci or R-loci is obsolete (cf. Wilbur 2013, 231–237). In addition to the confusion of point and direction, Liddell constructs an absolute limit between space and language,<sup>66</sup> arguing that elements of space could never be units of language. He denies that the concept of a “spatial index/locus” is useful because such elements of space cannot be ascribed meaning<sup>67</sup>:

The concept of a meaningful locus [...] is an artifact of the search for a part of a sign – its location – that could account for the meaning that results from its directionality.

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<sup>63</sup> This is what Wilbur describes as follows: “[I]t is the geometric point (not any actual point with x, y, z coordinates) which can be placed anywhere but always provides the same semantics, namely that an individual exists.” (Wilbur 2013, 223)

<sup>64</sup> Insofar, the verb “pointing” is somehow misleading because we can almost never afford to select a real “point” in space. Therefore, Liddell’s (2003, 66–78) critique against points in space as linguistic units is inadequate. By the way, the German equivalent to “pointing (gesture)” is “Zeigegeste”. Translated back to English, this would be “show(ing) gesture” which does not contain the element “point”.

<sup>65</sup> As Wilbur puts it: “[T]he referents that I establish are conversation dependent, and the choices of locations in space for use in referring to them are also conversation dependent, but what is not conversation dependent is that the addressee must be able to clearly see which location I intend to reference. This means that if I establish only one referent on my right and another on my left, any point on the right and any point on the left will serve the function of keeping these referents distinct. [...] If I introduce a third referent, I must pick a clearly distinguishable point.” (Wilbur 2013, 227)

<sup>66</sup> The location is not dependent on any linguistic features or any linguistic category. Instead it comes directly from the signer’s view of the surrounding environment (i.e. Real Space). (Liddell 1995, 26)

<sup>67</sup> Moreover, Liddell (2000, 335) argues against the assumption of a unitary locus: With some agreement verbs the signer has to code different locus heights (e.g. when coding the communication between adults and children). He introduces the notions “token” (for verbs with unitary locus) and “surrogate” (for verbs with different loci).

The final location of the hand is not describable in terms of a fixed set of phonological or phonetic features. The final location of the hand in producing TELL<sup>>y</sup> or PUT-QUESTION<sup>>y</sup> will depend on the location of the entities these verbs are directed toward and the signer's judgement about making a path that leads from the starting point of the sign toward the entity to map onto its landmark. (Liddell 2003, 137)

The argument is correct insofar as the respective codings should not be described under "location" but under "direction (of movement)".<sup>68</sup> By doing so, the iconic representation of the basic conceptual metaphor "from SOURCE to GOAL" is much better represented. But Liddell confuses the elements of space with the linguistic coding related to them which also uses spatial parameters but not the points of space themselves. And he is wrong in assuming that such a coding can be done without establishing any relation to or within the perceived space.

It has to be emphasised that the perceived space is a cognitive model of three-dimensional space and therefore does not differ from any cognitive event model. Instead, many cognitive event models contain spatial (as well as temporal) information. The categorical quality difference exists between three-dimensional space with the events contained in it as the "physical reality" and the cognitive processing of the physical reality, not between spatial and non-spatial cognitions. Therefore, separating spatial from non-spatial cognition or spatial from non-spatial coding of language cannot serve to differentiate language and gesture.

To reach more clarity, I propose to differentiate between the gradience of phenomena existing effectively and a gradience which is produced by inadequate analytic methods:

### 3.2.1.2 Gradience as a Feature of Language Production

Principally, every action of an organism is gradient to some extent. This means that no complex organism can repeat a certain action exactly in the same manner as a past one. This is due to the fact that the steering of actions by the brain is not a technical process, working with exact parameters. Instead, the steering works along patterns and their approximative realisations, related to some sort of "fuzzy programme" to reach an intended or an unconsciously pursued goal. Language production is no exception: e. g. the formant values of speech vowels filled into a chart show considerable variation within the realisations of one sound and even overlappings between adjacent sounds (cf. Hillenbrand et al. 1995, 3103f). As a consequence, no single realisation of a speech sound or sign is identical with any other realisation of the same element. Moreover, not

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<sup>68</sup> Would the signers really use a single point with metrical coordinates in three-dimensional space for their coding, they would have to sort it out. This could only happen approximately by identifying the "point" at the end of their digit as the chosen one. But no signer would be able to reach the same "point" in anaphoric reference action. Instead, signers use a "sufficiently exact direction" for referencing.

all realisations of adjacent phonemes like /e/ and /i/ can be differentiated categorically. As a consequence, non-prototypical realisations (e.g. in non-accented sentence position) can only be differentiated by using the context. The same is valid for parameter values and signs of SL, where production conditions including coarticulation are the same as in SpL. How can we explain, then, that people usually clearly identify sounds or parameters as well as SpL and SL signs?

The answer is that the perception of complex organisms is adapted to extract functionally categorical interpretations from physically gradient events (cf. Wilbur 2013, 228).<sup>69</sup> Concerning language production and reception, we may say that our cognition is adapted to the production of gradient signs which are categorically processed as realisations of characteristic, different patterns, partially with respect to the context. Liddell seems to ignore this basic relationship between gradient production and categorical cognition; cf. his discussion of intonation in SpL (Liddell 2003, x). Naturally, this sort of gradience exists also for deictic or locational elements in SL in the sense that e.g. no repeated INDEX to a certain object or locus hits the identical direction as its precursors. But, within this gradience, if produced adequately, they can be interpreted as the identification of the single object which is meant in discourse.

### 3.2.1.3 Gradience as the Outcome of an Inadequate Method

Which strategy has to be applied in order to reach Liddell's result that e.g. INDEX as a class or other location elements (e.g. those constituting agreement) are gradient from a categorical perspective? Without any consideration of their respective function in their special context, we collect a great number of realisations of INDEX and analyse their parameters: It turns out that the handshape remains the same, but direction and/or orientation can show any value in three-dimensional space, i.e. are "undetermined". Now we resort to our SpL bias and apply the "categorical law" that deictic or locational elements (like "this" or "here") have only one form, fulfilling the axiom "one meaning – one form". From the assumption that in SL direction and/or orientation deviate from this principle, we deduce that the respective sign parts are non-linguistic.

In analysing SL, we have the following alternative choice for describing directions: We can take the physical, three-dimensional coordinates of every realised direction,<sup>70</sup> or we can take directions relative to the position and orientation of a signer in space and his/her communicative intent. This choice must not be changed for different classes of signs because that would violate descriptiveness. Using the INDEX, the signer's

<sup>69</sup> This can be described by Catastrophe Theory (cf. Wildgen 1995). The construct of the phoneme by linguists is also a proof for the strong variation in sound production.

<sup>70</sup> The metrical description of e.g. the direction of an INDEX should have the form "Digit shows to point ( $x=350/y=-23/z=130\text{cm}$  in the respective coordinate system". Such a metrical description of space-oriented visually deictic elements is not adequate. Instead, we need a functional description of the direction parameter of an INDEX like: "Digit indicates object meant". The same is valid for signs coding cardinal directions.

intention is “to show the direction towards the object referred to”, or, e.g. a cardinal direction. It turns out quickly that choosing the first alternative leaves us with the impossibility of describing any signing action linguistically: As signers can orient their body to any point of the compass, every sign would appear to have gradient direction and orientation parameters in the sense that these parameters cannot be fixed for the description of the respective sign.<sup>71</sup> That is, the signer’s body/face being oriented to the North, the orientation of the hands in ASL HOUSE had to be described as “westward” and “eastward”, while signing HOUSE to the West would create an orientation to North and South, respectively. Every SL linguist will reject such a strategy of description for e.g. SL nouns and explain that we have to describe “direction” and “orientation” in relation to the signer’s position/orientation in space. But some SL linguists would take out several classes of SL signs, like INDEX and agreement verbs, of this relative treatment, using the first alternative of description for them. This is an error in reasoning which violates the principle of a uniform description strategy. Additionally, it ignores the signer’s cognition of the communicative situation or of a cognitive map concerning a narrated or invented scene. In these cognitive maps, every participant or object has its place and the signer’s text production respects the relative positions in his/her map by choosing the directional parameters relative to these positions. Therefore, choosing the adequate strategy of description, i.e. the one which uniformly assumes relative directions, no single INDEX or agreement morpheme can be evaluated as underdetermined or gradient as Liddell and others claim.

#### 3.2.1.4 Gradience as the Outcome of Misunderstanding the Constitution of Meaning in Indexical and Iconic Signs

In SL, referents can be identified by coding the direction to their location (be they present or absent). This is valid for categories like INDEX or possessive pronouns (in Austrian Sign Language the palm is oriented towards the respective direction). The same coding of direction is also used for all relations which can be interpreted by SOURCE-GOAL. For SpL, semantic (functional) maps (cf. Haspelmath 2003) are used to show the multiuse of certain language units or features for different functions/meanings. Cross-linguistically, such maps show e.g. the different extents of the use of certain grammatical categories for diverse functions. Adopting the idea of semantic mapping for SL-internal purposes, we can say that in SL, the parameter of direction is used for pronouns,<sup>72</sup>

<sup>71</sup> “[I]t makes no sense to say that there could be an unlimited number of lexical units and that the signer simply selects one of these preexisting units as the most appropriate, given the current location of a particular referent. A grammar is not capable of storing or manipulating an unlimited number of already established lexical units. In addition, there is no way to describe the form of these purported morphemes, and no way to list them as part of the grammar because their number is, in fact, indeterminate.” (Liddell 1995, 25)

<sup>72</sup> Sloan (2013) argues that direction in nominal constructions demonstrating may sometimes be better described as fulfilling a determiner function than a pronoun. This would add a third “map area”, namely “determiner”, for being coded by direction.

as well as for agreement verbs, respectively. The example shows that typologically, we should not look what makes SpL and SL pronouns “different” – Liddell uses the difference, better, the deviation of SL pronouns from SpL ones as an argument that SL pronouns are “gestural” – but instead, which coding elements fulfil which functions and how commonalities and differences can be best described by using a cross-classifying method with a representation by semantic maps.

The Gesture School sees an important difference between the pronouns in SL and SpL in that the latter do not contain any element which identifies their referents directly in terms of direction. This is a clear example for a SpL bias which takes the SpL “standards” as the “real and only” version, and any deviation from that as non-linguistic. Additionally, the superficial similarity of the SL INDEX with the showing gesture of SpL is taken as the proof for the gestural status of INDEX.

Visual deictic elements which take functions like pronouns, articles, demonstratives, or local adverbs are – following the method described above – interpreted as “gradient”. This strategy pretends that the parameters of direction/orientation do not decisively contribute to the meaning of deictic or locational signs in discourse. This can be proven even by looking at SpL practice: Either signs such as “this” or “here” show an anaphoric relation within the discourse (case 1) or – as in using them related to a spatial information in an actual situation – they can be concretised either by a detailed SpL-description (“left of the tree in front of the house”; case 2a) or by a visual sign like pointing (case 2b) – in most cases the expectable economic way; both add necessary information. We see three different coding strategies in SpL: the first and second work within the spoken context only, the third one uses a visual sign, referring to three-dimensional space or to a cognitive model of it. As being non-acoustic, this visual sign is traditionally labelled as “non-linguistic”, or “gestural” in SpL linguistics.<sup>73</sup> This questionable labelling (cf. 3.2.3) is then transposed to SL, solely based on the superficial “similarity” between the “pointing gesture” used in SpL and the INDEX in SL, ignoring the different functional context: Compared to SpL, SL show a unique strategy: All three described cases are coded by visual signs. The crucial point here is that indexical signs like INDEX are used for case 1 and 2b as well. Together with coarticulatory variation of handshape in the sign INDEX, this proves that the “pointing gesture” of SpL has a grammaticalised counterpart in SL which is also used for discourse-internal anaphora, without any relation to the physical environment.<sup>74</sup>

For both SpL and SL, observation adequacy is violated when one tries to deduce the meaning of deictic or iconic signs from their lowest common denominator, i.e. those

<sup>73</sup> McNeill (2000, 6f) describes “pointing” in SpL-contexts as “integral part of linguistic performance” which are “outside the normal resources of language”, however. He states that pointing underlies less restrictions than emblems like “ok”. This is only correct if we ignore the function of the direction parameter.

<sup>74</sup> This does not mean that I refuse an evolutionary process of ‘showing gesture > deictic particles > articles/demonstratives/pronouns’ for SpL (cf. Diessel 2012, 37). A comparable development, starting with the showing gesture and leading to grammaticalised use of indexical elements in different functions is also probable.

properties which all of a set of realisations of a sign share. By this method, non-common parts of the sign's meaning are excluded from functional analysis. As deictic or iconic signs mentioned in 3.2.3 are directly related to physical directions or visual qualities of objects, the respective coding parameters are produced with respect to these "real" relations/qualities and therefore vary along these dimensions. E. g. the "type" INDEX includes "tokens" which differ in this respect.

Reversely, it makes no sense to try to understand the complete meaning of a single token excluded from its actual context; it is inherent to this class of signs that their understanding needs reference to the actual situation:<sup>75</sup> The contribution of the respective directional or quality parameter is crucial for understanding and can only be detected within its context. These signs are not symbolic as Liddell presupposes,<sup>76</sup> but indexical/iconic. These types of signs are constituted by setting a relationship to reality (cf. Croft 2013 on the discussion with Haspelmath concerning "indexation"). Therefore, visual deictic/iconic signs represent a special set: they consist of fixed and situation-dependent parts. Hence, the strategy of abstracting one form out of a set of forms which we perform for symbols is not adequate here.

I assume that all researchers would agree that e.g. the direction of movement in elements which are commonly said to be lexical signs of SL is only invariant if we evaluate it in relation to the spatial position of the signer. If we were to take a fixed, mathematically determined coordinate system, e.g. by the use of cardinal directions, even the directions of these signs would be gradient in the sense Liddell understands the term. To take the relative position of the signer in space as the only criterion for the evaluation of a stable direction of movement is a too strong reduction of criteria for the production of sign language elements, however. Its result is that only the first-person index is found to have a stable direction (relative to the chest of the signer; cf. e.g. Lillo-Martin and Meier 2011). The misunderstanding proceeds to the result that we can differentiate only between the index for first and non-first person. If we abandon the restriction to the spatial position of the signer as the only criterion and add the spatial position of other persons and objects as a criterion of equal importance, we arrive at a solution which is much more adequate for the users' productions of indexes: The direction of every index is then determined by an obligatory relation to the person or object referred to. Even the use for non-present persons and abstract referents can be described by this model. This is an argument in favour of a unique grammatical rule.

Would these signs be "gradient", as Liddell proposes, it would be impossible to interpret any single token correctly. Signs with an undetermined directional or quality parameter could not be used in communication in the function they fulfil, because set-

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<sup>75</sup> SpL pronouns only coding gender and/or number of their referents can also only be understood (i.e. the addressee can identify the correct referent) in the actual context.

<sup>76</sup> Liddell contrasts "symbolic" with "non-symbolic", implying that only symbolic codings could be elements of language.

ting the directional or quality parameter(s) arbitrarily would not allow the intended identification of an object or quality. With regard to the special function of these signs, relating us directly to “reality”, their reality-dependent parameters are constitutive for these signs and cannot be ignored in linguistic theory. Liddell (1995, 25) misinterprets the indexical sign parts as a “single morpheme whose form was indeterminate”, arguing as follows:

The concept of a lexically fixed, meaningful element with indeterminate form is inconsistent with our conception of what morphemes are. Although it is true that reduplicative morphemes have no identifiable phonological form by themselves, they nevertheless behave in fixed ways that makes words formed by them identifiable. (Liddell 1995, 25)

Thus, he accepts the indeterminacy of reduplicated morphemes if one can formulate rules for their actual formation. This condition is also fulfilled for the visual deictic signs in SL. The rule for their formation is this: ‘The position of an object in space is coded by the production of values of the parameter(s) ‘direction’ and/or ‘orientation’ which are sufficiently discriminating it from others.’<sup>77</sup> For iconic signs the rule is the following: ‘The relation to an object is coded by the production of iconic parameters which allow the identification of the object in the actual context.’

Similar to the discussion about INDEX, Liddell (2003) claims that agreement verbs could not be analysed regarding their morphemic components; the evaluation “agreement” could not be proven.<sup>78</sup> Instead, he calls these verbs “indicating verbs” because they are directed toward referents (physically present or conceptualised as present), thereby identifying them. This view can be disproved by the same argumentation as the one on INDEX above.

In summary, the linguistic examination shows that the parameters of direction and orientation in question are neither in- or underdetermined nor gradient, related to the intention of the signers.<sup>79</sup> Instead, they are rule-governed, and their gradience emerges only from general conditions of production. Signers who do not keep to these obligatory rules risk to be misunderstood. Moreover, texts which do not fulfil these rules are evaluated as ungrammatical by native signers; this proves that the rules belong to SL grammar.

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<sup>77</sup> Liddell (2000, 344) denies the possibility of such rules of language: “[D]irecting signs toward things in Real Space is not dependent on any linguistic features.”

<sup>78</sup> Concerning the different solutions for agreement verbs cf. Mathur and Rathmann (2012), who themselves propose some compromise, using features.

<sup>79</sup> Especially parameters like “direction of movement”, “direction of gaze”, “orientation of the body” and “relative position in space” are used to code relevant information within indexical and iconic signs; they are equally “linguistic” as other parameters used for lexical elements of SL.

### 3.2.2 The Listability Criterion

As Liddell puts it:

Since treating depicting verbs as listable lexical items was not considered possible, ways were sought to provide a productive means of accounting for all possible signs of this type. (Liddell 2003, 269)

The source for this misunderstanding is again the above-mentioned tacit assumption that the coding phenomena of acoustically and mainly linear-sequentially ordered SpL have to be identical with those in visually and three-dimensional sequential-simultaneously ordered SL: SpL do not provide an immediate orientation in space. SpL users have to resort to acoustic indexical (“there”) or symbolic lexical/morphological (“middle”) and even visual (“gestural”) means. The simultaneous coding of different meanings is only possible via morphological fusion or intonation. In contrast, SL use spatial parameters directly for coding; therefore, the users can immediately integrate orientation in space into their texts. A grammar of a spatially coded language ignoring the actual or reported spatial configuration of an event is contra-intuitive. Additionally, three-dimensional coding allows for a much more simultaneous ordering of signs.

There is a second source of the inadequate application of the listability criterion: Language elements are either listable or their use is describable by a rule. No linguist would state that all language elements which are used in accordance to a phonological, morphological, or syntactic rule have to be listed in order to be evaluated as linguistic. In contrast, it is characteristic for many morphemes – namely those still productive in a language – that the lexemes to which they can be added are not listable. The reasons are that new lexemes can be added to an existing class, that lexemes can change their class or can show different class membership dependent on contextual conditions. This is also valid for SL; the difference is only that SL users prefer visual morphological categories.

The description of “non-listable” is therefore an indicator of a productive rule or process within a language. E.g. there is no list of SpL lexemes to which a certain SpL classifier can be applied and no list for the metaphorical use of a certain concept (nobody can forecast for which objects the notion of “head” will be used as a metaphorical sign).

It is also characteristic for numerals that they are non-listable because the natural numbers are already countably infinite, while real numbers are non-denumerable. Therefore, numerals can only be described by rules.

### 3.2.3 The Criterion “One Form – One Meaning”

Contini-Morava (1995, 8) describes the principle “one form – one meaning” as a “reasonable initial working hypothesis” which allows us to start the analysis of languages (cf. also Cappellaro 2012, De Cuyper 2008, 95–102, Hirtle 1989). The principle somehow reflects stages in ontogenesis where its application by children allows them an easy and economic learning of words and forms (cf. Aguirre 2003, 20). However, the phenomena

of homonymy and polysemy are there in every language, even in the lexicon. Additionally, many lexemes show a variability of meaning, depending on context (cf. Wilbur 2013, 225–228 on colours or adjectives like “expensive” related to different contextual standards of comparison and adverbs like “very”). Looking for translation equivalents shows us that also lexemes of a certain language have a wide spectrum of meaning which can only be described from their usage.<sup>80</sup>

This situation is best described by the assumptions of a prototypical organisation of the lexicon and of specification of meaning within the actual context. Concerning morphology, the situation is much more complicated, and the principle does not hold everywhere: As morphemes are limited in size and structure, we find multi-used forms as morphemes with different meanings, especially in languages with a more reduced but still productive morphology: Take e.g. the morphemes “-e” and “-en” in German which serve for coding plural or cases like dative and accusative of nouns as well as for special personal forms of verbs. The same is valid for English “-s”.

Typologically, we have to cross-classify morphological forms as well as categories identified and their respective functions for every language: We have to ask how many different forms in a certain language can signal accusative meaning and which of these forms also have other functions, e.g. signalling plural nominative. Then we also get a list of functions of one single morpheme. Additionally, we have to ask which functions the accusative forms of a certain language have, compared to the functions of an accusative in another language.

In typology, we are looking for the identity of functions or coding strategies, not for the identity of coding forms. We know that cross-linguistically there are overlappings or splits of functions as well as coding strategies. Therefore, we cannot assume any uniformity concerning a certain function or coding strategy. This situation is nicely illustrated by the use of direction in SL: Not only does it serve for the locating and re-referencing of persons, but also for expressing agreement.

Liddell (2003, 262–268) states that it is impossible to assign a certain meaning to certain handshapes, directions of movements, or orientations of the hand. Therefore, these parameters should be evaluated as gradient. If we assume that certain values of these parameters are only formational components of lexemes lacking iconic properties, this statement is nonsense: Were these components unidentifiable because of their gradience, the lexemes would be instable and useless for communication. If we assume that single fixed values of parameters are morphemes, we find the same situation in SL as in SpL: There are forms which are multi-used for different morphemes in different contexts. The only difference is that there are much more possibilities in SL, due to their visual modality. Any typological morphological analysis, therefore, has to use a cross-classification of forms and meanings.

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<sup>80</sup> It seems that the listing of lexemes together with their meanings in dictionaries produces the impression of “one form – one meaning” or at least of “clearly definable meanings” of a lexeme.

The functional explanation of classifier constructions in SL is the following: For full nominal lexemes, all main parameters are used to code a single item. For anaphoric use, the full representation of lexemes has to be reduced, as is the case in all languages and for different classes, like proforms or agreement morphemes. The differences are that e.g. in verb phrases of SpL the reduced item is sequentially added to the verb lexeme while SL users apply a more or less simultaneous combination. And SpL mostly use grammatical properties of the referent (e.g. gender, number) while SL use visual properties (e.g. roundness, which are also used in spoken classifier languages).

No SpL linguist asks for a list of possible referents for a certain proform, agreement morpheme, or classifier because the actual referent is identifiable from the context, in case that the grammatical rule was appropriately applied. SL classifiers as reduced visual forms are in complete accord with this description. As mentioned above, they show gradience only with respect to human production processes; otherwise their referents could not be identified by addressees.

The main problem of evaluating classifiers as “gestural” is that their linguistic analysis is abandoned: “[T]he question as to how these signs can be segmented is in my opinion more a matter of how iconic resemblances in language can be described than a matter of morpheme character.” (Erlenkamp 2009, § 14)<sup>81</sup>

In contrast, the “French method” (cf. Cuxac and Sallandre 2007), first to describe visually detailed codings informally as “Highly Iconic Structures” and to try a detailed morphosyntactic analysis, creates the possibility of a later typological decision about the status of the single identified elements and is therefore more adequate.

### 3.2.4 The Similarity Criterion

Superficial similarity between SpL gesture and the SL INDEX lead to the assumption that the latter is a combination of linguistic and non-linguistic elements. This ignores that “gesture” is only defined within a SpL context. Though not explicitly introduced by Liddell, the similarity e.g. between the showing gesture and the Index in SL seems always to have been one source for the evaluation of the latter as “gestural”. Following Wilbur (2013, 237), the application of this criterion violates the principle that we have to differentiate “between encoding (what you see) and entailment (what you must conclude)”.<sup>82</sup> This principle of differentiation is valid within any language alone, for the comparison of languages, as well as for the comparison of SL and gesture.

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<sup>81</sup> It seems that Erlenkamp – like Liddell – constructs a contrast between “iconic” and “morpheme status” or, alternatively, that segmentable and identifiable iconic elements are less probable to have morpheme status than symbolic ones.

<sup>82</sup> “I suggest that if we take the status of pointing in deictic use in English co-speech gesture as relevant to the treatment of pointing in sign language, we fall victim to the “same form entails same meaning” fallacy.” (Wilbur 2013, 238)

In favour of the difference between the two areas, Wilbur (2013, 238–241) refers to the arguments from SL ontogeny (grammatical pointing in SL takes more time to learn) as well as from grammatically determined cases of reference omission in coordinated sentences.

## 4 Conclusions

As mentioned above, typology has to cover both SpL and SL phenomena. This is much easier if we take a perspective on language as an “activity of the whole body”. As we can see already from Langacker (2008), this is at least an implicit assumption in Cognitive Linguistics. Liddell has done a lot for such a view, especially in the last chapter of his book (Liddell 2003). Unfortunately, his SL model does not show this view.

The Gesture School’s assumption of an enormous number of gestural components in SL texts, intricately combined with language elements – concerning essential areas of SL grammar – can be disproved by adequately transferring methodology and findings from SpL to SL in the framework of a comprehensive typology.

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