

FUNCTION AND MEDIUM IN THE FORMS OF LINGUISTIC EXPRESSION FOUND IN A SIGN LANGUAGE

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Abstract According to the metafunctional hypothesis, there is a non-arbitrary relationship between three major kinds of linguistic structure—‘wave’ (sequence and periodicity), ‘field’ (intonation) and ‘particle’ (constituents)—and the core meanings they typically express (textual, interpersonal and ideational, respectively). Furthermore, every act of meaning using a linguistic semiotic system is said to simultaneously encode and express all three types of meaning. This paper looks at Auslan (Australian sign language) in the light of this hypothesis and tries to show that the substantive difference between language in the two media (signed and spoken) is not the simultaneity of codings in the former (as frequently maintained in the sign linguistics literature); rather, it is the availability of space in a visual-gestural language which gives it an extra dimension in which to configure sequence and order. Examples are given in which sign strings instantiate a highly complex spatio-temporal matrix (rather than simply a ‘sequence’ or ‘order’) which involves not only constituent signs but also groups of signs and/or ‘fields’ delineated by expression. **Space is a resource unique to sign languages and has rich potential for encoding various types of meanings when combined with the general resources of wave, field and particle.** However, the very availability of space as a substance or vehicle of linguistic expression is also a function of the fact the sign languages are quintessentially face-to-face languages: a fact that may influence, and even constrain, the linguistic system in other ways.

Introduction

Investigations of sign languages of the deaf have established that languages in the visual-gestural medium do indeed exist (Deuchar, 1984; Markowicz, 1980; Klima, Bellugi *et al.*, 1979, etc). The research on sign languages, particularly American Sign Language, has concentrated on showing the similarity between linguistic patterning in sign and spoken languages. Sign languages satisfy general structural and functional criteria thought to be defining of human language — displaying arbitrariness, duality and discreteness in structure and fulfilling communicative, expressive, and phatic functions — even though some of these criteria (e.g. arbitrariness) seem less absolute and clear-cut as defining characteristics of spoken languages than was once believed (cf. Hockett, 1960; Lyons, 1981). Research has established the existence of sign phonology and morphosyntax (the latter particularly rooted in movement, direction and spatial location) and has described their manifestation in language processing and

brain trauma. In terms of the processing of language, visual-gestural language, when used as the primary medium of linguistic expression, has been shown to be differentially processed by left and right hemispheres in the human brain in ways predicted by and parallel to the processing of auditory-oral language and not as other visual, but non-linguistic, input (Poizner *et al.*, 1987). Moreover, the pattern of language acquisition in sign has been shown to be similar to that in speech (e.g. Hoffmeister & Wilbur, 1980; Bonvillian *et al.*, 1983). However, although linguistic research into the sign languages of established deaf communities has unequivocally shown them to be natural languages with patterns of language use and cultural identity similar to that of speaking communities, there still remains much that is unknown about the appropriate characterization of these languages and in particular their relationships with their host spoken languages.

Models of Signed and Spoken Languages

The model of spoken language that has informed the research into sign languages is language as a monofunctional and uniform system made up of the linear (temporal) concatenation of discrete units, which themselves form a hierarchy of similar segments and constituents. Attention has been focused on a single language function — ‘communication’, which is itself equated with the representation of experience — and, consequently, on the way propositions are encoded in sign languages. Therefore, sign linguists have naturally looked for patternings believed to define the essence of (spoken) language: constituency, sequence and order. Although it was quickly realised in the investigation of sign languages that language in the visual-gestural medium displayed complex simultaneous codings and meanings, this observation did not stem from the application to sign languages of long standing general linguistic principles in which the plurifunctionality and the attendant simultaneous encodings of meanings in language were recognized. Rather, it stemmed from problems encountered in describing the simultaneity of the interplay of facial expression with signs, the possible co-articulation of two signs (one on each hand), the incorporation of several sign modifications into a single stem, and the articulation of signs in, and with reference to, space as well as time (linear sequence). The work of Klima, Bellugi *et al.* (1979) on the structured use of space and movement in ASL is a seminal study of these phenomena in the sign linguistics literature. By way of example, in Auslan the verb sign may contain the ‘subject’ and/or the ‘object’ by a change in the direction of the sign; contain the adverb of manner by a modification of the movement and with an appropriate facial expression; contain the adverb of frequency and duration by a particular way of repeating the sign; contain the ‘subject’ of a verb of displacement by a classifier handshape (‘proform’) incorporated into the verb; and contain the ‘object’ of a verb of grasping by incorporation of a classifier handshape (‘manipulator’).¹ That is to say, a large amount of information can be simultaneously encoded into a single sign.

Indeed, much has been made of the simultaneity of internal sign modifications and it has been maintained that this degree of simultaneity in distinguishing lexical items

and establishing grammatical function is not found in spoken languages (Klima, 1975; Friedman, 1977). The implication has been that such simultaneity (apart from the simultaneous articulation of distinctive features in individual phonemes) is quite unique to sign languages.

However, from two quite separate perspectives it is clear that this is not, strictly speaking, true. The first involves the use of tonality in the lexis and grammar of tonal languages and the use of prosody in all spoken languages. Tone and prosody are problematic even within the restricted monofunctional view of language. Not only are both simultaneous codings that map onto and across discrete segments but, at the very least, tonal contours which operate to distinguish lexical items in a tonal language are entirely comparable to the simultaneous articulation of distinctive aspects in the production of a single sign. If there is indeed a difference in this area between signed and spoken languages it may well be of degree rather than of kind. Spoken languages favour the exploitation of essentially sequential strategies, such as the linear addition, insertion or substitution of morphemes (or the arrangement of word order), above the simultaneous or superimposed codings of tone and intonation. Perhaps what is noteworthy in sign languages is not the fact of simultaneity but, rather, the number of, and clear preference for, simultaneous elements.

The second perspective concerns the plurifunctional nature of language and makes observations that are quite outside the purview of the one dimensional representational model of communication. The general linguistic principle is that any piece of text (phonic or graphic) simultaneously realises a number of linguistic functions. The only real acknowledgment in the sign linguistics literature of the plurifunctionality of language and its attendant simultaneous encodings of meanings was made by Ingram (1978) who suggested that a functional sentence perspective, such as developed by Weil and later by Mathesisus and the Prague School, shows how discourse constraints are realized in the sentence in terms of the point of departure and goal of the discourse. Woodward (1972) and Friedman (1976) also suggested that sign languages are extremely discourse sensitive and are best characterized — in terms of sign order — as topic prominent languages, like Chinese, rather than subject prominent languages, like English (Li & Thompson, 1976). More recently, Washabaugh (1981), following Vygotsky, made the suggestion that two possible macro-functions of language (meaning-exchange and presence-manipulation) can find different characteristic blends in different cultures and languages and that deaf signers were more concerned with presence-manipulation than meaning-exchange (I shall return to this observation at the conclusion to this paper).

Lack of recognition of the plurifunctionality of linguistic expressions leads to an unproductive and inadequate analysis of sign order as if sequence equalled order and order was uniquely a function of representational content. When this is combined with a fixation on constituent structure to the exclusion of other coding mechanisms the situation may indeed become confused allowing for such contradictory claims regarding sign order in a sign language as “previous SOV [...] and present predominant SVO sign order in ASL” (Fischer, 1975) versus “free sign order in ASL” (Friedman, 1975), versus “preferred SVO with variant sign orders depending on facial adverbs” (Liddell, 1978). Though the co-presence in individual signs of five formational as-

pects which operate lexically and grammatically is indeed noteworthy, as the research literature shows,² this paper aims to show that it is not so much that spoken languages tend to exploit sequential coding strategies whereas sign languages tend to exploit simultaneous coding strategies. The essential difference between language in the two media is instead the availability and exploitation of the additional substantive dimension of space in the latter. Comparisons should not be made with respect to only one particular dimension of linguistic organization — the syntagmatic-cum-temporal. All too often, syntax has been equated with grammar, and syntax itself has only been understood temporally.

The Linguistic Expression of Metafunctional Content

The contemporary articulation of the plurifunctional perspective is best found in the theory of systemic functional linguistics. The fundamental hypothesis of systemic functional linguistics is that language is more than just a means for the communication of propositions, it is a general meaning-making system (see Halliday, 1967b, 1978, 1985 for seminal statements of the position). These meanings fall into three major classes of signification dealing with representations of the world, negotiations with the interlocutor and management of the message output itself. This has been summarised by Matthiessen (1991) thus:

Semantics and grammar are diversified into three modes of meaning and modes of expression — ideational, interpersonal and textual. These are simultaneous in the system and in any unit generated by the system; a text is simultaneously an ideational, an interpersonal and a textual construct in the semantics and the same is true of a clause in the grammar. The ideational metafunction is a resource for interpreting and representing our experience of the world and the interpersonal metafunction is a resource for enacting relationships between people and the concomitant intersubjectivity. Ideational and interpersonal meanings are presented as text in context by means of the textual metafunction.

In addition, this perspective clearly acknowledges a relationship between the level of content and the level of expression in language with the realization of the metafunctions being ‘channelled’ by the medium offered in the form of expression, originally thought to be only either graphic or phonic in ‘everyday languages’ (cf. Hjelmslev, 1970). Figure 1 is a diagrammatic representation of semiosis. A simple semiotic system (e.g. the protolanguage of a child) is a two tier system which relates content to expression (on the left in Figure 1). In linguistic semiotic systems, semantics and lexicogrammar emerge as a bifurcation of the level of content into Hjelmslev’s ‘content purport’ and ‘content form’ (on the right in Figure 1). The groundwork of early sign linguistics was to firmly establish that sign languages of the deaf had previously been incorrectly classified along with “other (i.e. ‘non-linguistic’) semiotic systems” by virtually all linguists and philosophers of language. A level of expression in which the substance of phonology was a gesturing rather than a sound-

ing was discovered and sign languages were seen to be constituted comparably to spoken languages.

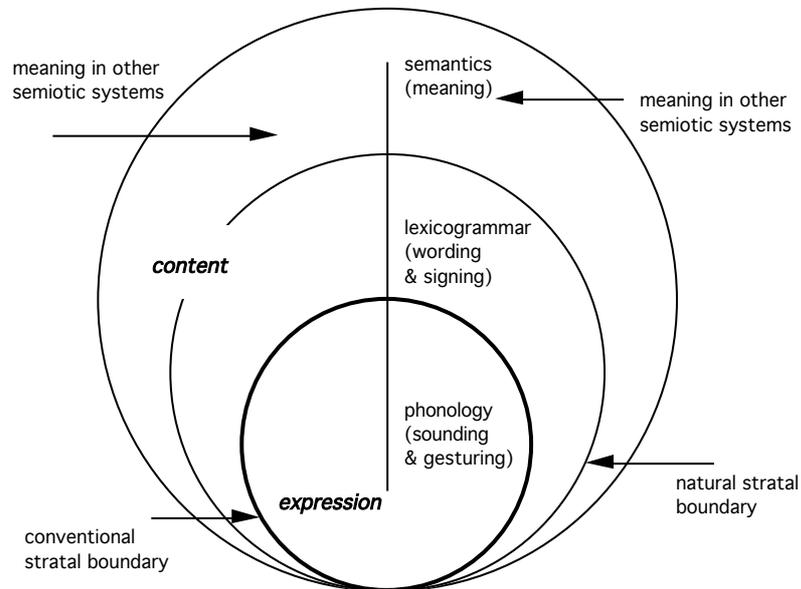


Figure 1 Meaning construed in language (After Matthiessen, 1991)

However, constituency is not the only mode of syntagmatic organization in spoken language and communication as representation (i.e. the ideational metafunction) not the only function. Moreover, it is a further and related hypothesis of systemic linguistics that “each of these semantic components typically generates a different kind of structural mechanism as its output, or realization” and that “different types of structure are non-arbitrarily related to the kinds of meaning they express.” (Halliday, 1979:61). This can be diagrammatically represented in Figure 2 (after Matthiessen, 1990) where the content of the functional semantic components is associated with various structural types on the expression level: ideational with particle (configuration) — itself further subdivided between experiential (constituency) and logical (interdependency); interpersonal with field (prosody); and textual with wave (sequence and periodicity). The terminology of field, particle and wave has been adapted and developed from Pike (1982) by Halliday (1979) and the notion has recently been further developed by Matthiessen (1990).

The four basic resources of spoken languages — the constituent lexical items which identify and name only certain types of participants, processes and circumstances; their modification through affixing and infixing and/or their placement in some particular order; their sequence in some particular string; and their utterance on some particular intonation contour — are unequally distributed in their expression of metafunctional content. The experiential favours constituency with which it configures phenomena (i.e. names certain processes and participants and not others) and

with which it establishes orders of constituents and segments with certain meanings. The interpersonal favours intonation contours, each broadly associated with core and general meanings, with which it establishes domains to which these meanings apply. The textual favours linear sequence and periodic beat with which it the establishes the boundaries (i.e. starting point and end point) of micro and macro text. “Broadly speaking, ideational meanings reflect the field of social action, interpersonal meanings reflect the tenor of social relationships, and textual meanings reflect the mode of operation of the language within situation.” (Halliday, 1979).

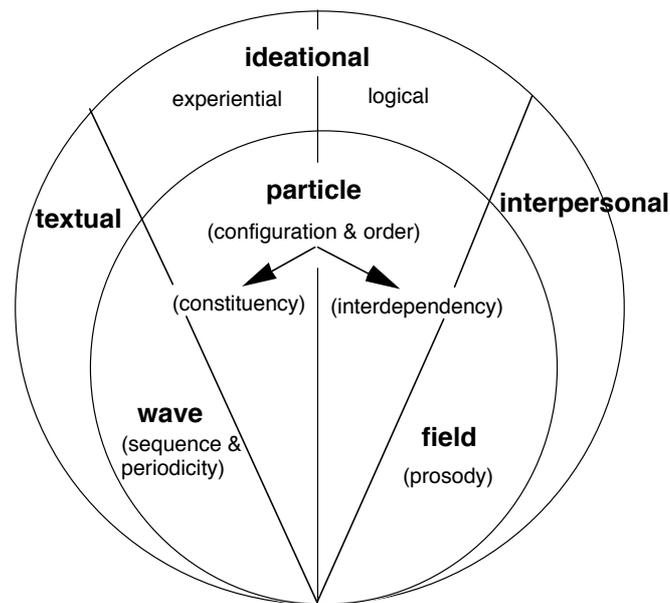


Figure 2 Different modes of meaning realized by different modes of (syntagmatic) organization (After Matthiessen, 1990)

The iconic relationship between the metafunctions and their realization in the semiotic systems of spoken languages leads one to the hypothesis that patterning in sign languages should be similar to spoken languages (since sign languages are semiotic systems enlisted to fulfil the same macrofunctions as spoken languages), yet sign languages should also be additionally and differentially influenced in their patterning by the novel resources the visual-gestural medium makes available. In other words, when the substance of the level of expression is visual-gestural rather than auditory the question arises as to the way in which Figure 1 maps on to Figure 2. Furthermore, a subsequent question also arises as to whether cultural values and cultural practices in conspiracy with language medium could result in different on-going relative weightings to the three language metafunctions in a given linguistic community, even if all three must by definition always be present for meaning creation. The relative sizes of the metafunctional slices of the semiotic cake could potentially vary, with attendant consequences as to the typical or unmarked modes of realization found in a given (linguistic) semiotic system.

It is the purpose of this paper to explore these propositions as exemplified in Auslan (the Australian deaf community sign language). In so doing it will first be necessary to briefly describe the immediate lived-in linguistic environment of the signer — the ‘semiotic Umwelt’³ — because the signing medium not only has consequences with regard to potential encodings: it in turn shapes the Umwelt itself. After all, if language is a semiotic system which has evolved fulfilling certain functions — as it certainly is — then the semiotic Umwelt will reflect and influence the kind of tasks that a language has been and is called upon to perform.

The Semiotic Umwelt of Signers

Signers live in a world which is quite peculiar and distinct from that of users of spoken languages. For want of a better word, signing communities are essentially ‘oral’ communities having an ‘oral’ culture and tradition. Not only is there is no written form of any sign language, but also sign languages are face-to-face languages rooted to the immediate physical situation of the context of utterance to an extent seldom appreciated by non-signers. When signing one must always be in view of one’s interlocutor and one must always stop most non-linguistic behaviour in order to partake in a linguistic act as such. (Of course, acting itself is culturally constructed and therefore already an act of semiosis.) While only physical distance (being out of ear-shot) or eating and drinking can similarly disrupt spoken language exchanges (though in the latter case one can still listen), virtually any activity — since most activity usually requires the use of one’s hands and the direction of one’s gaze on the project at hand — will disrupt two signers. Doing something usually stops one signing or being able to pay attention to the signing of another: signing while moving (running, walking, riding) are comparable to speaking while swimming and are difficult if not dangerous or impossible to perform; signing back to back, around a corner, room to room, from behind an obstacle or at night (without light or physical contact) is impossible; giving or receiving a running commentary on the performance of some activity is out of the question (one is forced to alternate activities); exchanging linguistic messages in situations of physical closeness and intimacy, both sexual and non-sexual, are similarly rendered problematic since the body is literally otherwise occupied. (The running commentary or ‘parallel discourse’ of love-talk, dirty talk or whispering sweet nothings is mostly blocked.⁴)

Another consequence of the sign medium is that the signifier — the visual-gestural complex — is experientially quite different when perceived by the sender or the receiver. Even though we hear ourselves with the addition of the feeling and sound of the resonance of our own body, the experience is still like hearing another person and quite unlike seeing a sign ‘back-to-front’ (or more correctly from the outside and from the inside). There is no equivalent of the experience of a word spoken in the dark and thus perhaps of a ‘disembodied’ signifier, as it were.

Given that primary sign languages⁵ only arise in situations of deafness and that deafness has never touched the majority of the members of any human population, a signing community is therefore invariably ‘embedded’ within another — quite differ-

ent — linguistic community. This other community is always a hearing community that uses an auditory-oral language and is usually also literate.⁶ On a daily, on-going and life-long basis signers must negotiate and communicate with people who usually have not the slightest knowledge of any of the conventionalized aspects of a sign language. What is more, insofar as signers may become literate, literacy is always in some other, spoken language. That is to say, signers are constantly required to abandon linguistic gesturing (where the expression is naturally but conventionally linked to a semantic content) for either alingualism (pseudo-linguistic gesturing) or bilingualism (gesturing which represents the graphic expression of a sounding or even a sounding directly).⁷ Imperfect bilingualism and interference from the host language results in a relatively unstable linguistic community.

Being without an indigenous literacy, sign languages have thus also avoided the development of a folk linguistics growing out of the science of writing which is essentially a linguistics that focusses on constituency (particle) and sequence (wave) at the expense, if not total disregard, of intonation (field). Moreover, where literacy is present, sign languages are not recruited to fulfil the linguistic functions of literacy, which inevitably remain the domain of the written form of the host spoken language. Consequently, neither the functional varieties of language associated with literacy nor the grammatical strategies associated with the need to make explicit that which is otherwise given in the context of utterance of an 'oral' language are likely to have developed. Indeed, gesturing may well be to sounding as orality is to literacy. That is to say, maintaining textual coherence and clarity of reference without gestural support (e.g. recounting an event while doing some unrelated task or while one's interlocutor is otherwise engaged yet within ear-shot; talking at night or speaking to someone who has their eyes closed) may likewise demand the development of disambiguating or explicating devices for a text to be viable.

Another fundamental characteristic of the signer's Umwelt is that the dividing line between language and non-language behaviour seems less definite in sign languages than it does in spoken languages. For example, signed exchanges, unlike most spoken and virtually all written exchanges, are regularly and even unpredictably punctuated by stretches of pseudo- or extra-linguistic behaviour in the same medium (i.e. miming and role playing), which are integral to and a continuation of the communicative exchange.⁸ One reason for the fuzziness of the divide between linguistic and non-linguistic behaviour in sign may be that the world is primarily temporal, visual and spatial rather than auditory. In other words, though all events and relationships must happen or exist in space and time, they need not have any associated 'sound'. There is no 'sound' associated, for example, with one person walking behind another, tomorrow being after today, or injury happening before pain; yet these events or relationships have clear temporal, visual and spatial dimensions. Despite an oral-aural language being suited to iconically encode sounds, the fact that our experience as a whole is visual, temporal and spatial means that a language which has itself visual and spatial resources for representation has greater means than an auditory one to map onto itself those very visual and spatial qualities of the world it wishes to represent.

Gesturing as a Substance at the Level of Expression

One important consequence of the signer's semiotic Umwelt on realization strategies and linguistic practices is that languages in the visual-gestural medium are able to create visual expressions which, while using familiar coding strategies analogous in both form and motivation to those of spoken expressions, also use the resource of the spatial dimension. The linguistic use of space in sign languages is constantly supported and reinforced by the simple fact that sign languages have no other secondary medium of expression such as writing or 'disembodied articulation' and, therefore, a space created by the signer and the addressee is *always* available to make, change or support meanings.

Assuming that "each mode of meaning has its own prototypic and iconic mode of expression" (Matthiessen, 1990), what I am concerned with here is whether the linguistic use of space is identified with one form of linguistic expression — particle, wave or field — and thus, consequently, associated with a particular metafunction; or whether it is ubiquitous, adding a dimension to all three forms of expression in much the same way as all three exist in time. General investigations of grammatical organization in sign languages and the discussion presented in this paper suggest that spatial codings are ubiquitous and thus should be associated with all three forms of metafunctional expression as a necessary substance of realization. However, they also show that there is a particularly strong association between the spatial dimension and the textual metafunction.

Within this context let us look at the syntagmatic realization of the linguistic metafunctions in a signed language. Though clearly analogous or even equivalent to the syntagmatic realization of field, particle and wave in spoken languages, it will be seen below that each realization mode has a spatial expression in sign languages which complements or even challenges temporal order as the basis of all syntagms.

The expression of the ideational metafunction in gesture⁹

Syntagm — order — is most clearly seen in constituent (or particulate) structure. Particle relates to constituency (lexis and segmental morphology) and concerns identifying participants, processes and circumstances and establishing relationships between them both as elements of an event-configuration and as a consequence of being so identified. The sign language equivalent of individual spoken lexemes is, without a doubt, the separate and unique signs that individually signify participants, processes and circumstances in the representation of some ideational content. In sign languages the equivalent of morphological modification of spoken lexemes is the modification of the five constituent aspects of each individual sign (location, movement, orientation, handshape and facial expression) which can operate both lexically (cf. lexical tone) and grammatically (cf. grammatical tone). Though grammatical tone, suppletion, ablaut and alternation are a feature of spoken languages, many morphological grammatical modifications of spoken stems are sequential (affixing and segmental) and ordered. In contradistinction affixing is extremely rare in sign languages¹⁰ and or-

der may exist in an ‘atemporal’ instantiation (i.e. only exist in a spatial dimension and essentially being neither simultaneous nor sequential, see below).

Typically, the expression of constituents in sign languages involves both space and time. This is a fact easily obscured in the study of sign languages by glossing practices, born of the writing of spoken languages, which not only imply that the linear sequence of constituents is the only dimension in which order may be construed (ignoring prosody) but which also leave little or no possibility for the representation of the spatial construal of an event-configuration. To represent the kind of configuration-cum-construal of participants, processes and circumstances exploited in signed languages one could imagine, as a crude analogy, a third axis being added to that of system and structure in language (Figure 3).

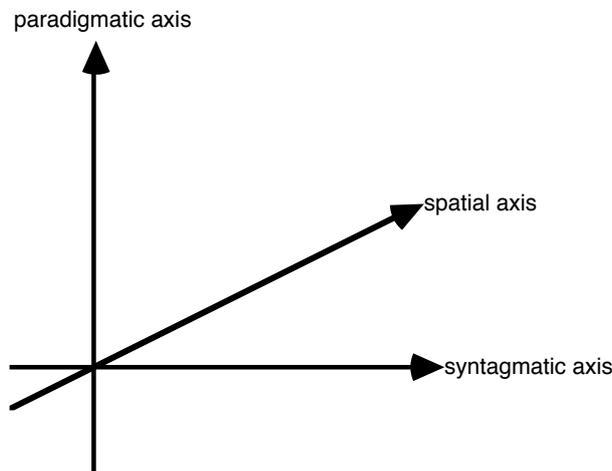


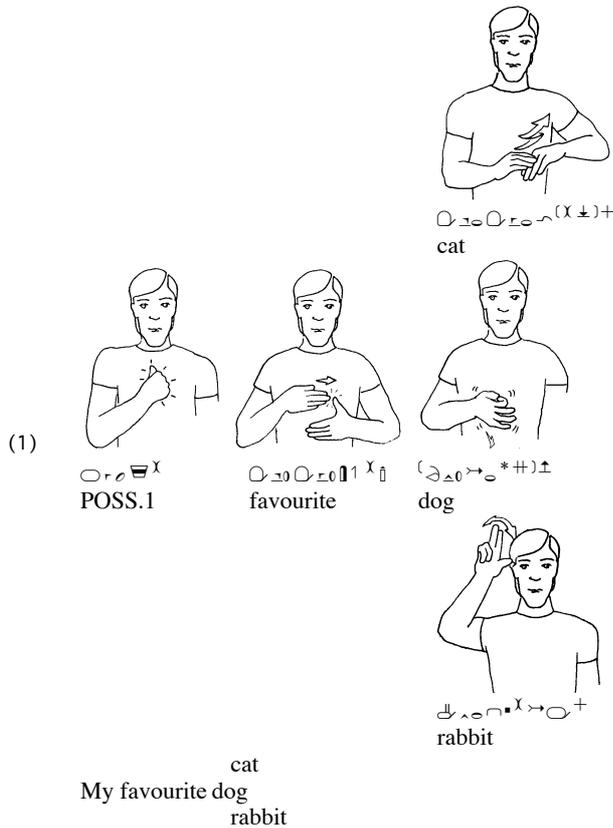
Figure 3 Paradigmatic, syntagmatic and spatial axes

More precisely (and this is almost impossible to represent diagrammatically), both axes have a spatial dimension in a visual-gestural language. Let's take the paradigmatic first. The paradigmatic choice at each point in structure is both one in a system of meanings and one in a system of locations and directions (i.e. each form has a number of spatial realizations). For example, the signs CAT, DOG, and RABBIT are potential meaning choices of, say, ‘animal’ or ‘pet’ in example (1).¹¹

Yet, the sign CAT in Auslan may have itself several spatial realizations — it may also be performed on the right side of the signing space, CAT-LOC.3a, or on the left side of the signing space CAT-LOC.3b (example (2)).

The constituents that are selected and named in a sign language are in part a function of the Umwelt and the expression medium itself. For example, there is a dearth of signs in some semantic fields (e.g. body parts, person deixis, locative deixis, prepositions of direction) because the referents are always literally ‘at hand’ and able to be indicated through pointing or relative movement; and there is even an eschewing of naming participants with separate constituent signs after having introduced them. Instead there is a preference for foregrounding the event or process itself by replacing

participants with pronominal deixis or incorporating them with proform classifiers or locational clitics with a verbal complex (cf. Kegl, 1986).



Most signs in Auslan are able to be construed — with or without internal sign modification — as identifying a participant or a process depending on the utterance. It is interesting that, unlike other spoken languages whose lexemes are similarly multi-valent, Auslan does not systematically or exclusively exploit the intrinsic linearity of utterances to invest given temporal sequences of signs with particular ideational meanings (i.e. treat them as patterns, orders or configurations of constituents). For example, in some spoken languages a given *nominal verbal nominal* string will, provided that it acquires no morphological markings to indicate otherwise, be construed as subject verb object, with subject associated with actor or agent of the nominated process.¹² Though, like spoken languages, sign languages *may* similarly assign an order to constituents, it is as yet unclear whether the expression of order in sign languages as configuration in temporal sequence is spontaneous or the consequence of influence from host spoken languages. Figure 4 is an attempt to illustrate the possible ‘three’ dimensional construal of constituent order (it illustrates example (5)).

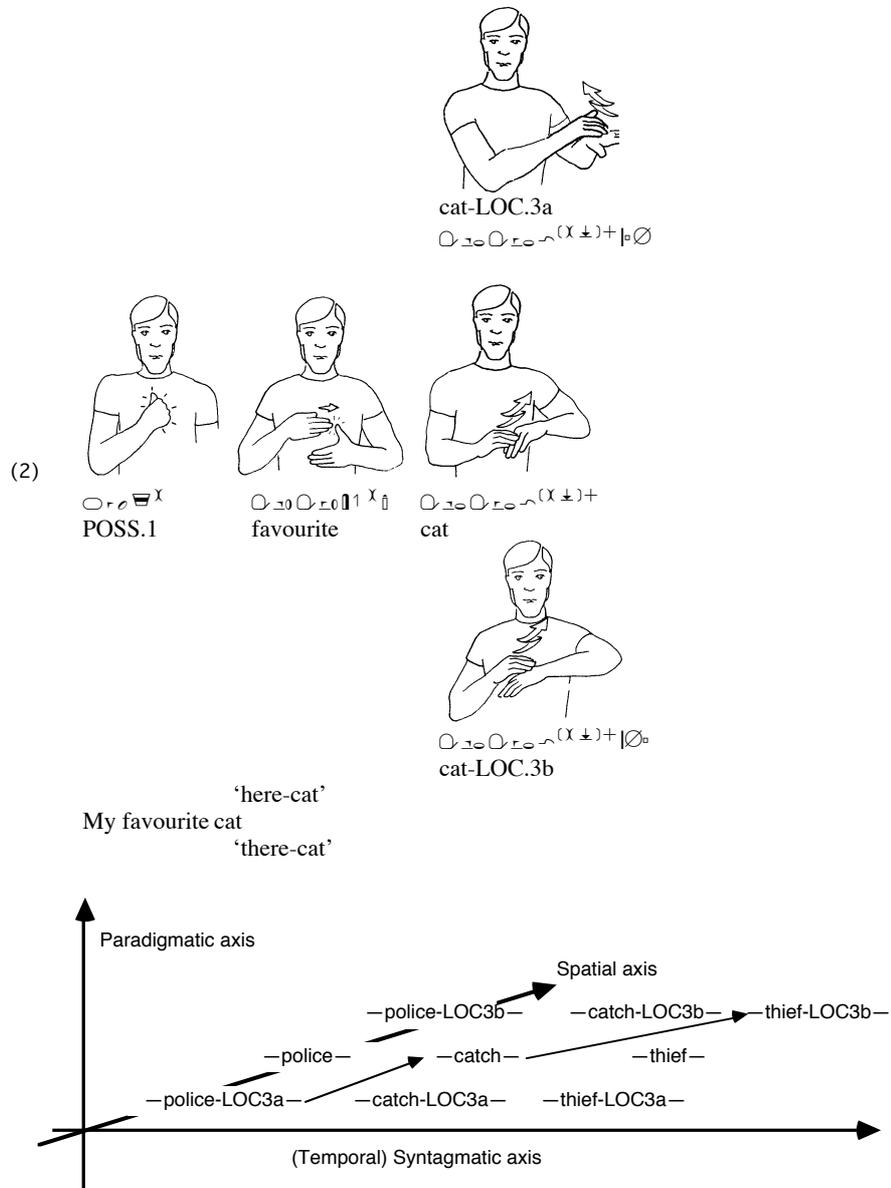
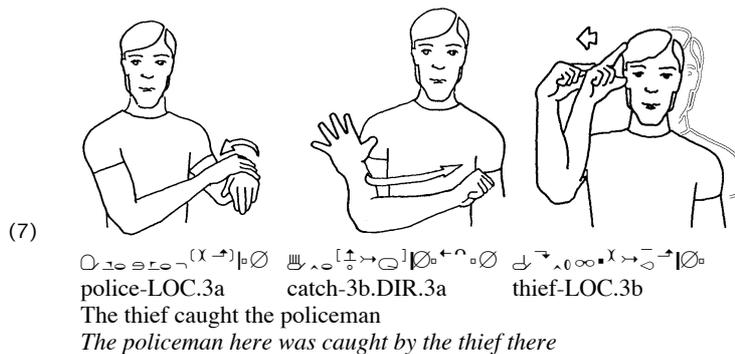
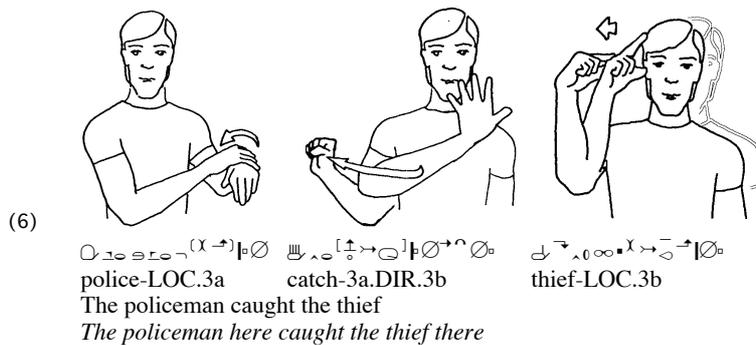


Figure 4 Order as temporal sequence configured in space

Instantiations of possible spatial orders from Figure 4 include a variety of unique strings of optionally and variously located signs each of which still has the ‘same’ core ideational content. These various spatial orders of a possible nominal-verbal-nominal string (examples 3, 4 and 5 below) assume as given or contribute as new to the discourse in ways suggested in the italicized captions.

(The location of the police and thief are relevant whereas the location of the act of catching itself is not, nor is there any possible doubt about the respective roles of policeman and thief in the act of catching)

As for the syntagmatic axis, each paradigmatic pattern created by each paradigmatic choice is linear both along the axis of time and along the axis of space (i.e. each ordered sequence creates a pattern in space as well as time). In other words, it is not only the relative location of a sign which may vary, but also its direction. Any implied spatial displacement of a referent in the movement parameter of a sign may itself be altered to move from or to one participant or between both participants. Verbal signs which have such a displacement can still also be located (i.e. located at 'x' and moved between locations 'a' and 'b'); some are fully directional while others are partially directional being only able to move either to or from a participant (i.e. either the end point or beginning point of the sign's articulation is fixed), or 'anchored' (i.e. having fixed beginning and end points). Figure 5 illustrates examples (6) and (7) using the sign CATCH which is a fully directional and locatable sign. (In the latter example the change in direction affects the ideational content.)



(The location of the police and thief are relevant and the source and goal of the act of catching is made explicit and linked to these locations.)

Thus possible orders not only include a variety of unique strings of optionally and variously located signs with or without directional modification (depending on the

semantics and phonology of the constituent sign) of a given temporal syntactic order of nominal-verbal-nominal (examples 3, 4, 5, 6 and 7) but, because the morphological markings of location and direction iconically establish lines of transitivity, possible orders also include a variety of other potential temporal syntactic orders (once again depending on the semantics and phonology of the verbal sign) each of which still has the 'same' core ideational content. Examples (8), (9) and (10) illustrate the point. Of course, this kind of sequential manipulation is essentially textual and I will return to this later.

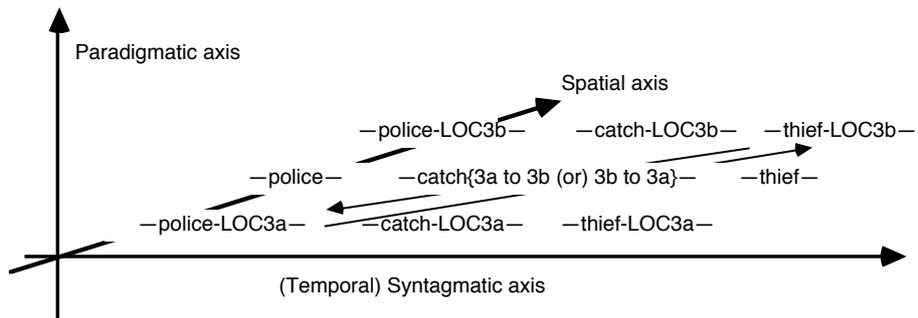


Figure 5 A directional sign in the spatio-temporal frame

(8)

$\emptyset \rightarrow \emptyset \rightarrow \emptyset \rightarrow (X \rightarrow) \mid \emptyset$ $\downarrow \rightarrow \downarrow \rightarrow \emptyset \rightarrow \emptyset \mid \emptyset$ $\emptyset \rightarrow \emptyset \rightarrow \emptyset \rightarrow \emptyset \mid \emptyset \rightarrow \emptyset$
 police-LOC.3a thief-LOC.3b catch-3a.DIR.3b
 The police/A policeman caught the thief

(The location of the police and thief are relevant and the source and goal of the act of catching is made explicit and linked to these locations. Moreover, at least one participant, if not both, is new to the discourse and needs to be located to 'set the scene' for the directional verb to exploit.)

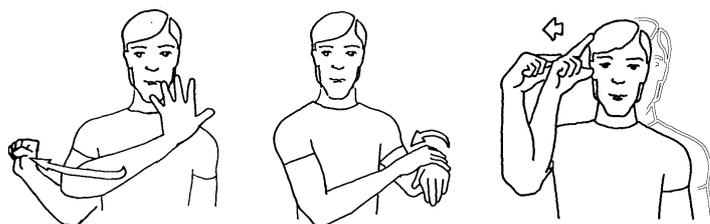
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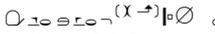
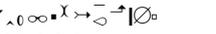
$\downarrow \rightarrow \downarrow \rightarrow \emptyset \rightarrow \emptyset \mid \emptyset$ $\emptyset \rightarrow \emptyset \rightarrow \emptyset \rightarrow (X \rightarrow) \mid \emptyset$ $\emptyset \rightarrow \emptyset \rightarrow \emptyset \rightarrow \emptyset \mid \emptyset \rightarrow \emptyset$

thief-LOC.3b police-LOC.3a catch-3a.DIR.3b
 The police/A policeman caught the thief

(The location of the police and thief are relevant and the source and goal of the act of catching is made explicit and linked to these locations. Moreover, at least one participant, if not both, is new to the discourse and needs to be located to ‘set the scene’ for the directional verb to exploit. Furthermore, the agent is signed after the patient to allow for the immediate ‘launching’ of the directional sign catch-3a.DIR.3b from the location of police-LOC.3a)

(10)



catch-3a.DIR.3b police-LOC.3a thief-LOC.3b
 Catch him is what the policeman did to the thief (and not hug him) /
 He caught him, that’s what the policeman did to the thief

(The location of the police and thief are relevant and the source and goal of the act of catching is made explicit and linked to these locations. The act of catching is topical or thematic.)

Space will mean that whether the verb sign is fully directional, orientating, partially directional (i.e. end directional or beginning directional) or anchored, and whether it is reduplicating or reducible will influence possible and potential sign sequences and orders.¹³ Clearly there is interaction between morphology and syntax — meaningful codings (or even the lack of them) in the one can reinforce, complement, render redundant or even obviate the need for coding in the other, and vice versa. The iconicity of space — qua space and as exploited in the iconicity of certain signs — also means that many other potential sign sequences (e.g. catch-3a.DIR.3b thief-LOC.3b police-LOC.3a) retain a ideational intelligibility despite lacking spatio-temporal congruence. The examples such as the one just given are ill-formed, so to speak, through being cumbersome and awkward rather than incoherent or incomprehensible. It may be quite misleading to star them as ‘ungrammatical’.

Other factors which also contribute to constituent order being expressed spatially rather than temporally in Auslan include the types of sign used to express or qualify participants and processes such as classifier signs, deictic (i.e. indexic) signs, lexical signs (be they nominal or verbal — including adjectival, adverbial and prepositional signs), unstable improvised compound signs, sign-mime sequences, role-playing or combinations of these; and the temporal and spatial relationships the participants and processes may have to one another in reality or metaphorically and whether this is salient and exploited in the text (e.g., before, after; on, under; cause, effect; and so

on). Indeed ‘zero syntax’ (in terms of spoken languages, that is) results when a clause is made up of two signs simultaneously articulated (Figure 6 & example 11).

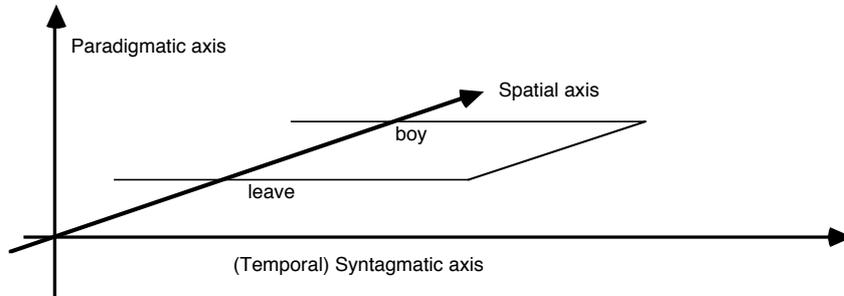


Figure 6 Zero temporal syntax

(11)

$\text{O} \langle \text{O} [\uparrow \rightarrow \Delta \infty] \rangle$
 leave
 $\text{e} \rightarrow \text{re} \cup (\text{X} \leftrightarrow)$
 boy
 The boy's leaving

Thus, even though configuration in spoken languages does not necessarily have to be linear since it may be simultaneous (tone, suppletion, ablaut, alternation) rather than successive (affixing, order) it must nonetheless be temporal (i.e. the realization is either simultaneous or sequential). It most certainly cannot be spatial or, more correctly, spatio-temporal, as it can in signed languages.

However, an important qualification is in order. This ‘space-time’ word order is not rigid because miming or role playing that enters the text may have a profound effect on the syntax of the surrounding clauses. For example, a signer may knowingly produce a clause which is ‘ungrammatical’ or ambiguous (i.e. not spatio-temporally congruent) because the signer either knows full well that they are about to launch into a role play, mime or sign-mime that fully disambiguates the clause or is fully prepared to do so if feed-back from the interlocutor signals incomprehension. Similarly, a mime or role play (be it by the signer or the addressee) may sufficiently vividly establish a scene of action or logical context that it may be immediately followed by clauses which do not display syntactic features normally considered essential for disambiguation or even grammaticality. They certainly could not stand alone. The syntax of clauses is thus dependant upon the existence of the pseudo-linguistic behaviour of

sign-mime, which is a feature of the modality of sign language, and the spatial frame which always constitutes the situation of utterance. In other words, the constituents of a sign language are ordered in a structure which is primarily spatial for the representation of ideational meanings.

These observations notwithstanding, it should not be forgotten that where Deaf communities have access to education, sign languages are usually under constant pressure from their host spoken languages to adopt parallel word order patterns. In this case Auslan has English — a subject prominent SVO language — as its host spoken language and is under pressure to designify the ideational content of space in the medium of expression.

The articulation of particular sign sequences and their possible construal as particular orders seems to rely not only on lexical and spatial factors peculiar to sign languages which are as yet not fully understood or described (see example 9 above), but also on discourse factors shared with spoken languages which are not as yet fully codified (see example 10 above). Naturally, as is also evident in non-systemic approaches to ‘pragmatics’ (e.g. Givón, 1979; Hopper, 1979), discourse factors include the communicative demands on the language which go beyond the purely representational to the textual and interpersonal context. The next section will discuss a linguistic message not as an order of elements representing an event-configuration, but as an interpersonal investment of the speaker expressed through prosody.

The expression of the interpersonal metafunction in gesture

Field relates to prosody and domains. Domains are established by features of the utterance that spread across more than one segment or constituent and relate to entire strings or messages. In spoken languages the central feature of prosody — ‘key’ — has been described by Halliday (1979:66) as “the particular tone of assertion, query, hesitation, doubt, reservation, forcefulness, wonderment, or whatever it is, with which the speaker tags the proposition. [...] there is no possibility of associating it with any segments — it is simply a melodic line mapped on to the clause as a whole, running through from beginning to end. [...] Mood and modality, tone and key, intensity and other attitudinal meanings are typically realized through this kind of structural pattern.”

The motivation for the realization of interpersonal meanings prosodically in spoken languages is self-evident: though disputed, the iconicity of intonation contours, especially the universality of core or generalized meanings associated with certain pitch movements, is seriously maintained by a number of linguists (e.g. falls and lower tones with closed meanings and rises and higher tone with open meanings). When one looks for the visual-gestural equivalent of vocal prosody one finds that the resources of pitch, pitch direction, length, loudness, tempo, rhythm and voice quality have visual-gestural analogs (if not actual indexes) that can ‘colour’ and delimit information units (cf. Wilbur, 1990). Indeed, the parallels reinforce both the iconic and universal interpretations of prosody.

The meanings that changes in pitch, pitch movement and accent can realize in spoken utterances is found on two levels in a visual-gestural language: on the face and on the hands. On the face the eyes and forehead (and even the head as a whole) seem to be implicated in the coding of the visual-gestural equivalent of pitch and pitch movement. This association is established both through the internal examination of the role of such facial expressions in establishing discourse function and the physiological evidence of the strong association of such facial expressions and head-movements with spoken prosody. The same physiological complex of factors, such as muscle tension, that induce a certain pitch or direction in pitch movement also produce facial analogs, particularly in the area of the eyes and eyebrows and forehead (Bolinger, 1989; Cruttenden, 1986; Ekman, 1979). On the hands (or more correctly the articulators, meaning the hands, arms, shoulders and even torso), the quality of the movement and the muscle tension enables the stressed production of particular signs, often accompanied by a facial expression based on the mouth. The mouth region itself is involved both in reinforcing upper face equivalents of 'pitch' and 'pitch movement' (e.g. frowning for doubt) and the stressed production of individual signs or sign sequences based on the hands (e.g. puffing the cheeks for intensification). In a sense visual prosody separates out the melodic (pitch and pitch direction) from the tonic (beat or intensity) — intonation on the upper face, and accent on the articulators and the mouth region.

The visual equivalents of intonation are thus facial expressions. These involve the head (nod, shake, tilt), the eyes (widening, squinting), the eyebrows (raise, lower) and the forehead (frown, knit) which tend to co-occur in sympathetic cooperation. The visual-motor equivalent of accent is manifested in a variety of ways depending on the type of movement found in the citation form of a sign. It may involve lengthening the sign by slowing it, repeating it, or adding movements. It may involve intensifying the sign by using facial expression (e.g. on the mouth or cheeks), sharpening boundary markers, or increasing muscle tension in the articulators (which often also results in the sign being produced higher in the signing space) (cf. Wilbur, 1990).¹⁴

Partly because what is of interest here is not so much those patterns of visual prosody that are essentially analogs of vocal prosody (rather I am interested in the role of space, if any, in visual prosody), and partly because only superficial work has yet been done in the area of visual prosody, I will only briefly outline the essentials of the prosodic realization of the generalized mood choices of Auslan.

Statements are made without any marked departure from a 'rest' position, though there is a tendency for the face to 'relax' or drop towards the end of the information unit (cf. falling tones in spoken languages). Assertive phrases are made with a repeated nodding of the head which can also be accompanied by forward head tilt, and widened eyes. Clause level negation is achieved by shaking the head while signing. (Lexical negation is used to localize negation (negate a particular constituent) and/or to emphasise prosodic negation.) The imperative is indicated by an insistent gaze on, eye contact with, and a firm movement of the head forward and downward towards the addressee with manual stress on the verb (i.e. increased muscle tension, rapid movement with abrupt offset). Interrogation is marked by movement of the eyebrows from their neutral position or by the introduction of specific manual signs with or

without the movement of the eyebrows. Raised eyebrows are regularly associated with polar questions and lowered eyebrows with information questions (eyebrow movement is the only marker of polar questions).

Question tags in Auslan is made with a small set of signs (e.g. RIGHT, TRUE) which carry an appropriate visual prosody that codes the interrogation. Indeed, in Auslan it is also possible to have only an intonation contour in the tag (i.e. a facial expression is tagged without any accompanying constituent manual sign). Non-lexical tags (e.g. question particles such as *eh?* in some varieties of English) are as close as spoken languages can come to this second phenomenon because vocal prosody demands a phonological constituent (or constituents) to carry its expression.

Naturally prosody appears not to have a potential spatial expression in the same way that constituent signs can be assigned a location and/direction relative to points in the signing space. (Even those signs whose very form prevents them from being located or directed in the signing space — because their articulation is anchored on the body — can nonetheless be assigned a nominal location in the signing space through various strategies, such as shifting the body right or left.) Prosody is an expression of the signer's attitude and is usually associated with, and spreads across, the utterance as an information unit, rather than individual signs. (The domain of a visual prosody can nonetheless be telescoped so that it spreads over only a single sign — especially in a one sign utterance). However, even if the prosody should only spread over a single sign it still cannot somehow be separated from the individual sign (or the utterance) and assigned its own location in the signing space. In short, prosody is not a property of the sign, as such; rather, it is a manifestation of the attitudinal relationship of the signer to that which is signed.

Interestingly, though this needs to be explored further, there appears to be some kind of spatial expression to prosody in the phenomenon of 'body-shift'. It has been observed in Auslan and other sign languages that signers often (though admittedly this is not obligatory) move their torsos to the right or the left, by shifting body weight from leg to leg and turning the torso, in order to take on different personae. This is particularly telling for verbal processes since one tends to imitate or at least assign an appropriate prosody to a projected utterance whilst at the same time 'disowning it' as an expression of one's own attitude. That is, since in Auslan there appears to be no form of indirect speech, *He said that you were stupid* is rendered as *He said "You're stupid"* with body shift often occurring between the verb of saying and the projection.

It is not unexpected that interpersonal meanings become iconically, if not indexically, expressed through prosodic structures (indeed, it would be remarkable if this was not the case). However, the spatio-temporal Umwelt of the signer means that the visual prosodies associated with interpersonal meanings are always shown, and able to be seen, on the face; whereas, because they need not be literally face-to-face in spoken languages, some other strategy (lexis, order and/or morphology) can also be recruited to code these meanings. Even in the general domain of the interpersonal meanings (mood and affect) there is a strong preference to eschew the realisation of mood and affect in constituency (e.g. circumlocutions and registers of politeness and to a lesser extent, at least in Auslan, modals) and wave-like structures (e.g. interpersonal themes).

Wave relates to temporal sequence and periodicity. It is not surprising that the textual metafunction is associated with wave-like encodings since the essence of text in spoken languages is the linear unfolding of sound through time. The temporal resource for making meaning is naturally also available for sign languages. However, given that “the textual component is language as relevance (the speaker as relating to the portion of reality that constitutes the speech situation, the context within which meanings are being exchanged)” (Halliday, 1979), the notion of textuality in systemic theory also clearly includes both the unfolding, profoundly ephemeral, linguistic artefact of speaking or signing (cf. Bühler’s *Symbolfeld*) and the context of utterance (cf. Bühler’s *Indexfeld*). That is to say, the textual metafunction is realized, on the one hand, through temporal sequence in the linear organization of the message (both by investing significance in positions at the boundaries of the message unit and by tonically flagging these peaks of prominence) and, on the other, through endophoric and exophoric deixis (anaphora and reference), for internal textual coherence and external referential congruence. The fact that the context of utterance in sign languages constitutes a distinct *Umwelt* which is perforce spatio-temporal (and not just an *Umfeld* which is culturally and linguistically specific) suggests a disproportionately important textual function to space.¹⁵ This is hardly surprising since the notions of field, tenor and mode within systemic theory have already alerted us to the fact the medium of expression of text (phonological or graphological and, now, gestural) is not without importance.

Let us first look at textuality in terms of *theme* and *information*. The serialization of signs inherent in an act of semiosis creates a text. Though all metafunctions are typically present and expressed in any linguistic act of semiosis (they are strictly unordered in systemic theory) analytically there is nonetheless a sense in which the textual metafunction has a second-order (‘enabling’) function insofar as it organizes the ideational and interpersonal content of the message. As Matthiessen (1990) explains: “The textual metafunction is concerned with giving prominence over non-prominence of experiential and interpersonal meanings in the evolving discourse in which the clause occurs.” Within this framework Butler (1985) specifies:

What the textual component does is to express the particular semantic status of elements in the discourse by assigning them to the boundaries; this gives special significance to ‘coming first’ and ‘coming last’, and so marks off units of the message as extending from one peak of prominence to the next.[...] Examples include the thematic status of the first element in clause structure, and the importance of the end of a tone group as the unmarked position for information focus.

Given that sign languages must also serialize their sign output and given that I have argued above that they have visual prosodies comparable to vocal prosodies, it will not be necessary or informative here to dwell on those textual syntagms that realize thematic and information structure in Auslan using these resources alone. Be it a universal feature of linguistic organization or more narrowly a case of semiotic osmosis from the host spoken language, English, to the embedded sign language,

Auslan, the semantic import of most patterns of textual prominence when using these textual resources alone is strikingly similar. Examples (8) to (10) above gave some indication of possibilities in this area, as do examples (14) to (16).

(14)

PRO.3 steal-VAR money
 He stole the money

(15)

money PRO.3 steal-VAR
 The money, he stole it
 (The money was stolen by him)

(16)

steal-VAR money PRO.3
 Steal the money he did

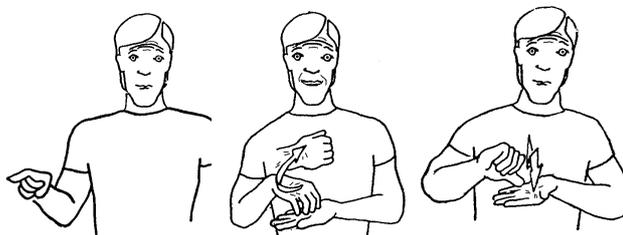
Examples (17), (18) and (19) illustrate the shifting location of the tonic (shown here as in bold in the transcription) within a question intonation contour (as argued above, in Auslan the visual prosody separates out the 'contour' and the 'tonic', the former on the upper face, the latter on the hands and both variously overlapping on the mouth):

(17)



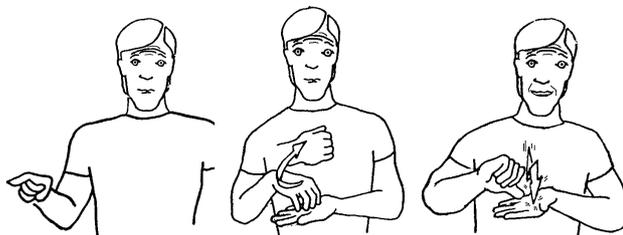
PRO.3 steal-VAR money
 He stole the money? / Did he steal the money?

(18)



PRO.3 steal-VAR money
 He stole the money? / Did he steal the money?

(19)

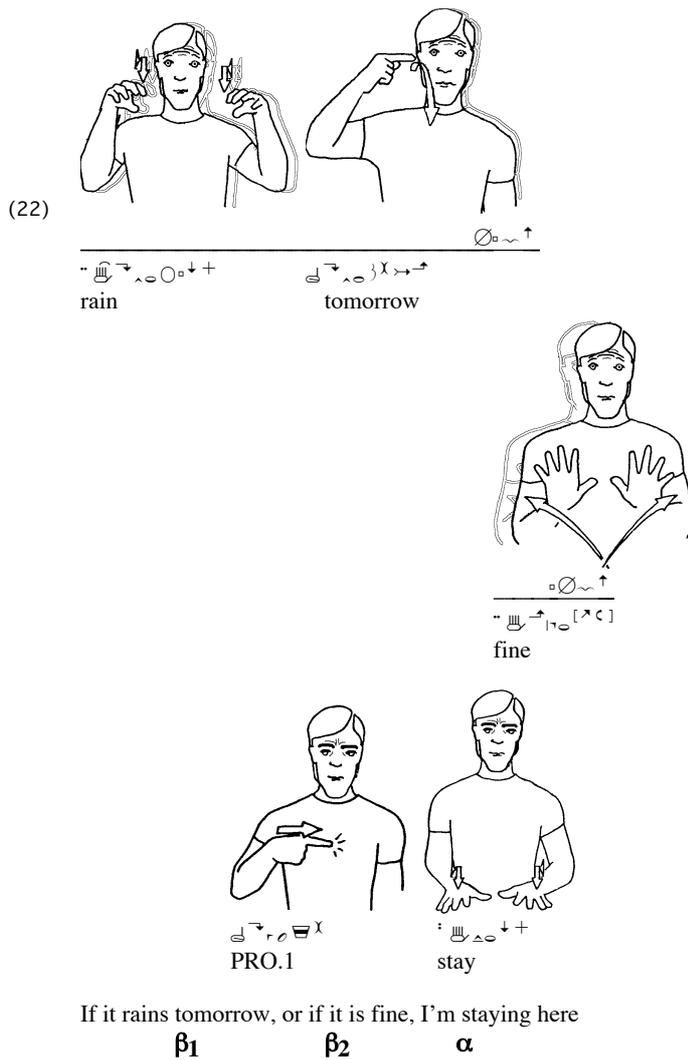


PRO.3 steal-VAR money
 He stole the money? / Did he steal the money?

Rather than cite cross-medium parallels, what I am interested in here is the potential role that spatial as well as temporal arrangement (including placement of the tonic) can make to textuality as theme and information.

Importantly, as has already been noted, one cannot felicitously use the direction of a verbal sign to show the relationship between participants if at least one of their relative locations has not already been established (see example (9) above). In short, a spatial frame of reference needs to be established in which predications can be made.

visual), i.e. without also marking or further specifying in the constituency the nature of the logical relation. They do this by reinforcing the prosodic syntagm spatially. For example, alternation between two clauses dependent on a third may be achieved by uttering one on the left side of the signing space (\emptyset^L) and one on the right side of the signing space (\emptyset^R), both on a similar rising facial intonation, with the third independent clause placed in the centre of the signing space on a falling or neutral facial intonation (22).



Indeed (though this is not shown in Figure 7 since the vertical axis represents the paradigmatic axis, not height) the two initial clauses may even be signed in a higher

(I certainly still want to live in that house and I don't care if we buy it or rent it.)

The first two signs, THAT HOUSE, are made with reference to a location just slightly in front of the signer. THAT points towards the location while HOUSE is made at the location (referred to here as '2' though, of course, it is *not* the location of the interlocutor). During the production of the phrase the head (if not the torso) is tilted forward (\circ^{\pm}) to reinforce the non-neutral location of the topic. The following two clauses, BUY and PAY RENT, are signed with a rising intonation which contrasts with the neutral intonation of NOT-CARE ME and marks a conditional relation between the two halves of the contour. BUY and PAY RENT are themselves located in the signing space through body shift and head tilting (to the left ($\circ^{\pm}\circ^*$) and to the right ($\circ^{\pm}\circ^*$) respectively) and are opposed in a relation of alternation. Moreover, BUY and PAY are made with directional reference to the location of THAT HOUSE: the vector of BUY originates at '2' and the vector of PAY terminates at '2'. Similarly, the signs of the final clauses, NOT-CARE ME and I STILL WANT LIVE IN, are all made in the centre of the signing space (i.e. neither right nor left), though NOT-CARE ME is made with head tilt or body shift to the back of the signing space (\circ^{\pm}). The final sign, IN, is directed and located towards '2'. In addition, there is affirmative head nodding throughout the final clause (represented as $\circ^{\pm+}$ and realized in English as 'certainly') which combines with the forward shift on IN to form a single nod ($\circ^{\pm\rightarrow}$).

In Figure (8) the numbers represent each of the twelve signs in example (23) in the relative locations in which they are signed (the view is from above the signer). The arrows represent sign directionality relative to these locations.

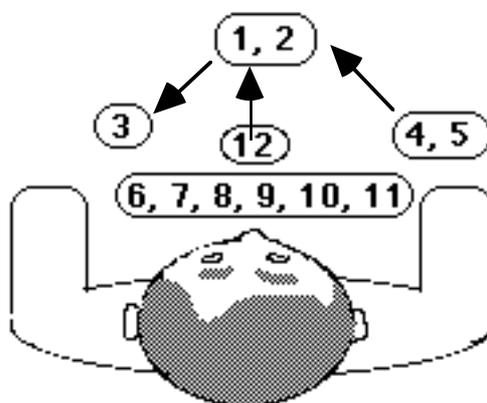


Figure 8 The spatial arrangement and directionality of signs in example (23)

It is not my purpose here to identify all the types of paratactic and hypotactic relationships recognized in the grammar of a sign language such as Auslan. Indeed, overall very little work at all has been done on this level of the grammar in any sign language within any theoretical framework, let alone systemic-functional. Superficially at least, it does indeed seem that Auslan and other sign languages have a small core

vocabulary for specifying logical relations in clause complexes, relying on non-structural ‘cohesive’ devices for further specificity. This appears to be a product of the intelligibility of three, four or even more clauses ‘posited’ as a complex linked in intricate ways by prosody, sequence, semantics and placement. The interpretability, and hence sustainability or viability, of such fragile complexes may rest in the richness and immediacy of the context of situation and utterance which is a feature of the signed Umwelt.

The fact that the textual use of space is essentially cohesive rather than structural is particularly evident if we look at *anaphora* and *reference*. Recalling that sign languages are by their very nature immediate face-to-face languages which invest the ever present and shared spatio-temporal dimension of any context of utterance with linguistic signification leads to the observation that in a very fundamental sense the Umwelt is ‘part of’ the text and not just intimately related to it as in spoken conversation (Halliday, 1977): “Conversation, while it is no less highly structured [than a literary text or other genres], is structured in such a way as to make explicit its relationship to its setting, though it is no less complex in its layers of meaning, the various semiotic strategies and motifs that make it up are [...] derivable from features of the social environment.”¹⁶

As many of the examples in this paper have shown, one can direct a signer to a location (‘occupied by an entity’) in order to refer to a participant, property or process (rather than to the location itself, as such). One can do this by using eye gaze, body-shift, a pointing sign (a deictic or indexical sign) or a lexical sign placed at or moved to, from or between a locus or loci. Now, in terms of the face-to-face nature of signed exchanges, directing a signer to an entity at a location is to refer to it exophorically, yet to do so with a pointing sign or a lexical sign that implicates the referent locationally (rather than a lexical sign that simply ‘names’ the referent) is thus also anaphoric and cohesive since it recalls and reactivates the established, textual significations of the signing space-cum-text. Similarly, pointing to the location of a referent may be seen as simultaneously referential (the entity at the location or the location itself) or substitutive (the location as ‘bearer’ of the entity). A pointing sign that could only be translated in English as ‘that one’ is a classic example of this.

Metafunctional Weightings Due to Medium and Culture

In conclusion, though it is true that in a signed exchange we do also witness the concatenation in some ordered way of lexical signs into acceptable and meaningful strings, taking this at its face value obviously leads to a very misleading impression of the mode of syntagmatic organization of a sign language such as Auslan, even more than it does of a spoken language (i.e. assuming meaning to be only representational, conveyed in constituency alone, primarily in the form of morphosyntax). This tentative application of a general systemic-functional model to sign languages reveals that the spatio-temporal resources of such languages impacts on linguistic structure in a number of ways.

First of all, the degree of and opportunities for simultaneous encoding in sign languages (visual-gestural languages in the spatio-temporal medium) are many when compared to spoken languages.

Secondly, and consequently, the additional and peculiar kinds of configurations or orders ('matrices') that the spatial dimension makes possible impacts on the kind of realization that is typically associated with each metafunction. For example, temporal syntagms of constituents ('orders') seem less productive in the ideational metafunction in signed languages than in spoken languages, whilst syntagms of prosodies and information units appear more viable and productive. In short, sign order, both within and between clauses, can have a spatial expression.

Thirdly, the face-to-face immediacy that the medium of sign language imposes on language use means that a range of functional varieties and genres of Auslan have not yet had the opportunity to develop, especially those associated with literacy. This is further amplified by shallow historical and cultural depth and limited social diversification in the Auslan signing community. Thus in addition to different patternings in linguistic structure as already discussed, one may also discern a difference in the relative weight given by the linguistic community to each of the linguistic metafunctions as expressed in linguistic behaviour.

As I remarked in passing earlier, Washabaugh (1981) distinguished between meaning-exchange and presence-manipulation as two macro-functions of language. Essentially the suggestion is that a language — any language — is not made up of equal parts of meaning-exchange and presence-manipulation. Though a language cannot exclusively be of one or other type, it may well favour one type of function. Relating Washabaugh's definitions of both 'macro-functions' to the outlines of the metafunctions in systemic-functional linguistics, it is apparent that meaning-exchange relates to the ideational meanings, and presence-manipulation relates to interpersonal meanings (with the textual meanings being erroneously ignored or down played). According to Washabaugh in certain linguistic communities the importance or weight attributed to linguistic artefacts as representations of the world (in terms of ambiguity, consistency and even accuracy) may be much less than that attributed to linguistic artefacts used to establish and maintain interpersonal bonds and 'co-presence' in the world. Important factors in this process appear to include literacy, societal complexity, and deafness.

In this respect the Auslan community is not unlike language communities that are pre- or non-literate, in that users are not fixated on 'language as representation' as some users of some spoken languages with literacy appear to be.

A possible instance of this phenomenon in Auslan is a relatively high degree of representational ambiguity apparently tolerated at the clausal level. Though the propositional content of a clause or a piece of text is by no means irrelevant, there is little cultural expectation on Auslan signers to be explicit and unambiguous at all times. Signers seem not to expect to be able to understand unambiguously all clauses or sentences, especially if considered more or less in isolation. (This may partly explain the regularly encountered problem of sign linguists with eliciting grammaticality judgements from signers.)



There are grounds for believing, though detailed textual analysis is needed to confirm this, that an Auslan text often unfolds in a spiral manner with a central event or proposition being stated and restated several times from different perspectives and in different ways with increasing embellishment and detail. In this way the event or proposition is gradually ‘brought into focus’ and clarified. The relationship between events or propositions, as enunciated in a sequence of clauses, may find expression in intonation and spatial placement, or it may be left unstated. In other words, an Auslan text may have shorter ‘simpler’ clause complexes overall than one finds in a spoken language like English. Though non-structural clause complexes in Auslan (i.e. non-structural in constituency terms) may be longer than similarly non-structural clause complexes in English, many meanings expressed by long sequences of variously linked clauses in English appear more likely to be expressed by shorter clusters of clauses complexes, textual themes,¹⁷ and independent clauses whose relationship to the rest is predicted by context.¹⁸



Each information unit taken by itself or in isolation may well be ambiguous or structurally indeterminate, but the overall communication is certainly not. Of course, the structural resources of interpolating co-ordinating or subordinating connectives is also available in sign languages.

Many signing communities may indeed use language in such a way as to imply that ‘language as representation’ is less important than in some spoken language communities (cf. related issues of focus in written and oral discourse — Tannen, 1985). Social and historical factors such as minority status, linguistic oppression, deafness, and individual and group alienation, can contribute with other factors such as language modality and ‘orality’ to produce a linguistic community which is ostensibly not only far more concerned with presence-manipulation (interpersonal meanings) than meaning-exchange (ideational meanings) but also able to express far more through the manipulation of textual and interpersonal meanings because of medium, in the first instance, and the immediacy of the exchange, in the second (Figure 9).

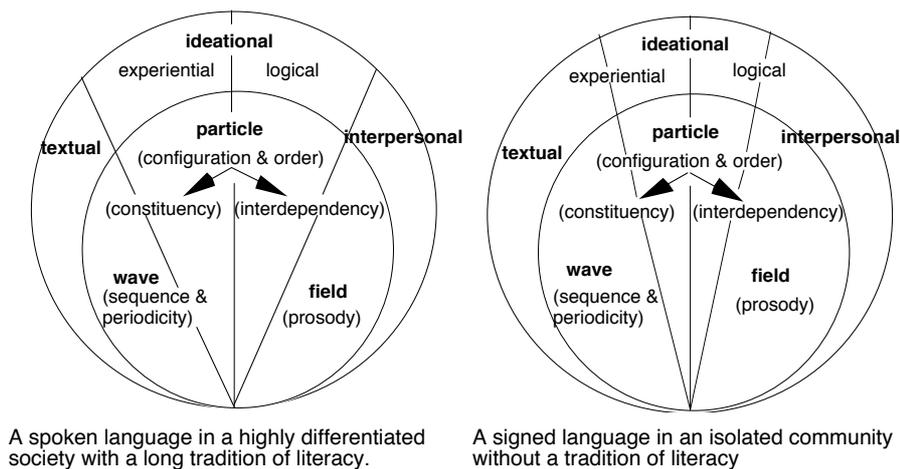


Figure 9 Variable metafunctional weightings

So much of what is traditionally thought of as language and made explicit in grammars is language as representation realized through particulateness. The divisions between syntax, semantics and pragmatics in linguistic theory tends to marginalize, in our understanding of grammar, coding strategies (what one could call ‘realization potentials’ in systemic theory) that are non-discrete. In this paper I have tried to show that the application of a systemic-functional model to the analysis and understanding of sign languages entails seeing the ideational content as but one among three areas of meaning, linked to three distinct modes of realization in the linguistic system. The model may also help us understand how and why the degree of differentiation or elaboration through particulate structures of the experiential and logical meaning potential of a given linguistic semiotic system may vary as a function of culture and language medium.

Acknowledgments

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Notes

¹ I put the terms ‘subject’ and ‘object’ in single quotation marks because of doubts about the need for, or appropriateness of, these categories in describing Auslan. The meaning of ‘proform’ and ‘manipulator’ in the context of classifiers is discussed elsewhere in this volume. See *Spatial Syntax & Spatial Semantics* (Johnston, this volume) for further discussion of both points.

² A representative sample on ASL would include the early intuitions of West (1960), the first systematic analysis and statement of internal ASL sign structure by Stokoe (1960), the development and extension of Stokoe’s observations in Battison (1974), Friedman (1977), Klima, Bellugi et al (1979) and Wilbur (1979), the more recent developments in the notion of sign phonology in Supalla (1982), Liddell (1984) and Padden & Perlmutter (1987). Other primary sign languages have also been analyzed in terms of sublexical sign structure (e.g., Kyle & Woll (1983), Brennan et al (1984), Tervoort (1986) as, indeed, have secondary sign languages (e.g., Kendon 1988, Barakat 1988)).

³ I have chosen the expression ‘Umwelt’ because of its biological, evolutionary and ecological associations. The ‘Umwelt’ describes that particular and individual perceptual/behavioural complex which represents the organism as evolved in symbiosis with its environmental niche (cf. Bühler’s *Umfeld*).

⁴ It is however common, in such situations, to use one’s partner’s body as a place of articulation for one’s hands and arms (the

articulators), though with important limitations on what can be said above and beyond single sign utterances. The strategy of fingerspelling on to the hand of one's partner as one does with the deaf and blind can also be used but that is essentially a tactile code for the spoken language, not a sign language.

⁵ Primary sign languages are developed by people for whom speech is not a potential option. Kendon (1988) makes the distinction between *primary sign languages* and *alternate sign languages*. The sign languages of Aboriginal Australians, for example, are defined as alternate sign languages since unlike the primary sign languages of deaf communities such as Auslan "they are not fully autonomous systems and might be better thought of as systems that *represent* spoken language, rather than as languages in their own right" (p. 4).

⁶ There have been reports of one or two small signing communities in non- or pre-literate societies with an extraordinarily high incidence of hereditary deafness (e.g. the village of Adamorobe in Ghana and a Mayan village in rural Mexico). However, it has usually only been urbanization and industrialization, which are regularly accompanied by mass literacy, that have enabled sufficient numbers of deaf people to congregate (either spontaneously in urban centres or in the schools and institutions for the deaf set up in such societies) for sign language using communities to become established.

⁷ In this context bilingualism refers to the fact that deaf people usually learn the language of the surrounding speaking community (to varying degrees of proficiency) in addition to learning their own community sign language. It does not mean that when deaf people 'resort to bilingualism' that they are simultaneously producing two languages. However, it may mean that their bilingualism is expressed gesturally or graphically rather than phonetically.

⁸ This distinction is, of course, one of degree rather than kind since vocal miming and sound imitations are a feature of types of spoken discourse as well, especially that of children.

⁹ In this context 'gesture' is not being opposed to 'signing' (i.e. the former as non-linguistic bodily movement and the latter as linguistic bodily movement); rather, 'gesture' is being opposed to 'sounding' as the vehicle of linguistic expression.

¹⁰ In Auslan, for example, only one, or possibly two, sequential morphemes have been identified (a negative suffix and a reflexive suffix, respectively) (Johnston 1989). For ASL some analyses have claimed that there is a complete lack of affixing strategies in that language (Klima, Bellugi *et al* 1979:244, 274) while others have identified only one affix (Wilbur, 1980).

¹¹ The first line of all Auslan examples is written in "HamNoSys" — a sign language transcription system adapted from that used at the Centre

for German Sign Language, Hamburg University. For further details see *Transcription & Glossing of Signs* (Johnston, this volume). The use of HamNoSys symbols to transcribe facial expressions and head movements is an innovation. In example (13), for instance, \sim^{\uparrow} means the raised eyebrows of a rising facial ‘intonation’. Elsewhere, the meaning of the symbol combinations above the expression line is explained in the accompanying text. To assist readers who are completely unfamiliar with sign languages, illustrations have been provided for some key examples. The reader may notice that one way of locating a sign which must be articulated on a fixed location on the body of the signer, such as THIEF, is to shift the body to the right or left. This is shown by a trace outline of the signer at the neutral position and a normal line drawing at the new ‘shifted’ position, as in example (5). The HamNoSys and glossed transcription is written *from the signer’s point of view*, while the illustration is, necessarily, *from the addressee’s point of view*. The illustrations are adapted from the *Auslan Dictionary* (Johnston 1989), illustrated by Peter Wilkin.

¹² Though it is true that identified semantic roles are not affected by the reordering of constituents, grammatical relations which are identified through order and/or morphology are regularly associated with certain semantic roles. Cf. Matthiessen (1990) “The experiential metafunction creates constituency but it does not assign any value to the relative order of the constituents: for example, Actor + Process + Goal and Goal + Process + Actor are experientially the same. This expressive potential is not taken up by the experiential metafunction so the textual metafunction can draw on this constituency to give textual meaning to the relative ordering of the constituents.”

¹³ A discussion of this phenomenon in Auslan, together with examples and definitions of the various verb types can be found in Johnston (1989).

¹⁴ As with spoken languages, the periodic stressing of an individual sign or sign sequence is associated with structural realization as wave, and hence the textual metafunction, and will be discussed in the next section.

¹⁵ Indeed, the distinction between endophoric and exophoric deixis is often blurred. For example, there is no distinction whatsoever in signing in response to one's interlocutor's statement that “All men are mortal” — either “That’s right” (endophoric) or “You're right” (exophoric). The deictic sign can be understood as pointing to the ‘text’ (the trace left by the statement in space) or to the signer of the statement.

¹⁶ Halliday goes on to mention in this context the linguistic socialization of the child as described by Bernstein. Likewise there is a not accidental relationship between Bernstein’s (1971) notions of

elaborated and restricted codes — as two types of language that differ to the extent to which they rely on shared knowledge (contextual, cultural, interpersonal etc.) for successful understanding — and the idea that the signer’s Umwelt socializes the language user and shapes the linguistic system so that relative to users of spoken languages we have a similar kind of relationship as that between a restricted and an elaborated code.

¹⁷ Textual themes that enumerate a sequence vertically downwards (or horizontally in one direction) or simply use the up-down axis to refer to progression in the discourse (e.g. ‘next’ or ‘furthermore’ in an argument as metaphorically a downward movement) seem to have come from familiarity with literacy. There have been reports of the lack of similar strategies in a pre-literate society with a sign language such as the sign language of the village of Adamorobe in Ghana. “The syntactic mechanism known from ASL, where the nondominant hand serves as the reference index for ordering items in the discourse, is not familiar to AdaSL users, nor is it intelligible to them” (Frishberg in van Cleve (ed) 1986:79) — *The Gallaudet Encyclopedia of Deaf People and Deafness* Washington DC: Gallaudet University Press.

¹⁸ I have no quantitative text based data to support such speculations but the transcription segment given in the Appendix is meant to illustrate the point. The Auslan text has been taken from the film *Talking Hands, Noisy Lives* (1991) produced by Michael Carroll of Digital Arts Film & Television, Adelaide, South Australia. This particular Auslan text is typical of the rest of the film (and, I would maintain, everyday Auslan texts) in the way that the complex interplay of visual prosody (eye based movements, mouth based expressions, manual accent), body shifts, head tilts, shakes and nods, eye gaze, spatial placement and sign directionality all combine to produce frequent stretches of text in which there is no overt lexical sign constituent marking various forms of coordination and subordination. The written English version of the text is actually given in the film as the dubbed translation of the Auslan. Once again, HamNoSys symbols used above the expression line in the transcription are used in a way not intended by the designers of the system. They will not be explained here. The ‘literal’ translation of the Auslan text in the Appendix may go some way towards giving the reader some ‘feel’ for the original text.

Appendix

An Auslan text (next page) compared to two illustrative versions (1 & 2), a spoken English version (3) and a written English version (4).

1. A 'literal' version/translation of the Auslan text into which some of the visual prosody and spatial information of the original has tried to be included (bold refers to the words that most closely match the manual signs). This is only intended to give a 'feel' for the text since for most readers the transcription system used on the following page is not accessible.
 - a) Sure, **they** over there to my left [i.e. oral hearing impaired people as opposed to deaf signers] **still can talk**, uh-huh, but, on the other hand, regarding **contact** with **their family** and **friends**, well **they're limited** — so, **why** would that state of affairs ('back on the other hand') be?
 - b) Well, **they** to the left **only can read lips**, **write** notes to other people and **exchange** them again and again.
 - c) **Their** (those to my left) **problem?** Is it **only** the **hearing** problem of **theirs**? **No way!**
 - d) Uh-huh, regarding **them** to my left and **their 'spoken' communication**, it is **limiting** and **reducing**, limiting and reducing, limiting and reducing.

2. A most unlikely 'spoken' version trying to use intonation in a way which is comparable to the interplay of visual prosody and space in the signed version.
 - a) Sure they can still talk (fall/rise; doubt), contact with family and friends (high rise; question), they're limited (fall; statement), why? (high rise; question)
 - b) They can only read lips, write notes and exchange them (fall; statement)
 - c) Their problem (rise; topic), is it only their hearing? (high rise; question), no way! (fall; dismissive statement)
 - d) Those people (rise; topic), their spoken communication, it gets reduced and limited (fall; statement, termination)

3. One spoken rendering without intonation being used to compensate for the lack of visual prosody and space.
 - a) Sure they can still talk, but when they talk to family and friends they can't talk about a lot of things because
 - b) they can only read lips and write and swap notes.
 - c) Their problem is not really only their hearing.
 - d) For them, the give and take of free conversation is reduced.

4. One written version
 - a) While they are still able to talk, contact with family and friends is limited
 - b) to what they can manage to pick up from lip-reading and the exchange of written notes.
 - c) The problem is certainly much more than just lack of hearing
 - d) since they have lost the freedom to communicate in a direct and spontaneous way.

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