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Fixed and Free: Order of the Verbal Predicate and Its Core Arguments in Declarative Transitive Clauses in Finnish Sign Language

Abstract

The study presented in this article deals with the order of the verbal predicate (V) and its nominal core arguments (A- and P-argument) in declarative transitive clauses in Finnish Sign Language (FinSL). A central finding of the study was that at the macro level of FinSL transitive clauses are not ordered in one unambiguous way, but at least three structural combinations of the verbal and its core arguments are possible: AVP, APV, and PAV. The type of clause was found to affect sign order in that isolated clauses only occurred with the orders AVP and APV, whereas textual clauses also manifested the order PAV, or even involved omission of the core arguments. At the micro level, however, sign order in FinSL showed regular patterns similar to those found in other sign languages: (i) A-argument was always expressed before V, and there was also a strong tendency to express A-argument before P-argument; (ii) verbal initial structures were not used; and (iii) verbals including a classifier morpheme – i.e. verbals on the basis of which FinSL could be identified as a head-marking language – were placed at the end of the sentence. The article also discusses the extent to which the clause is an appropriate unit to be used in the future description of FinSL.

1. Introduction[1]

This article deals with the sign order (cf. word order) of transitive clauses in Finnish Sign Language (FinSL). The main research question to be answered is whether the two-placed verbal predicate (V) and the nominal elements[2] referring to its semantic arguments – the core arguments (A- and

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[1] I wish to thank Päivi Rainò and Matti Leiwo for reading and commenting on the various proofs of the manuscript. I also wish to thank the two anonymous referees of the journal for their valuable comments.

[2] This article is based on previous research that has shown that FinSL signs group into two broad lexico-grammatical categories, *nominals* and *verbals* (Rissanen 1985: 29–35, 1998). It should be noted that not all researchers have used these terms in their writings. For example, Takkinen (2000), Itkonen (2001), and Veitonen (2004) speak of *verbs*

P-argument) – are ordered in some specific manner in FinSL declarative transitive clauses; and if so, how? Sign order in FinSL transitive clauses has not been investigated systematically before, yet internationally the order of signs in transitive clauses has been a prominent topic of research ever since the 1970's (see Section 1.1). Consequently, the present paper aims both to fill an obvious gap in the linguistic study of FinSL and to relate FinSL to more general discussion concerning the sign order of different sign languages. Implicitly, the findings of the study provide material for more general typological research as well.

The theoretical framework of the present study is functionally and typologically motivated Basic Linguistic Theory (Dryer 2001, 2006). As noted by Dryer (2001), Basic Linguistic Theory is an informal (as opposed to formal) descriptive framework widely used by linguists both to describe and compare grammars of independent languages. Since the emphasis of Basic Linguistic Theory is on description, I consider it to be a fitting framework for the study of undocumented linguistic phenomena, such as the order of signs in FinSL. In its descriptivity, Basic Linguistic Theory also accords well with the overall FinSL research tradition (see Jantunen 2008b), which has been primarily descriptive in its nature.

The arguments concerning the order of signs in FinSL are based on different types of data, presented and classified in more detail in Section 2. The main reason for the use of different data sets (e.g. different types of isolated clauses as well as textual clauses) is to address the effect the nature of the data is known to have on findings as to sign order, that is, the fact that sign order appears more variant in more textual settings (for a recent discussion, see Johnston et al. 2007), something which has not usually been explicitly stated in sign order studies (cf. Section 1.1). A more ontological reason for using more than one type of data is the conviction that the use of multiple data enables one to get a more extensive overall picture of the phenomenon investigated than the use of only one type of data.

Despite the fact that the main focus here is on the syntactic description of FinSL, this paper also addresses more general methodological and theoretical issues. These include, for example, the above-mentioned effect the nature of the data has on research into sign order, as well as the

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instead of verbals. Personally, I consider this practice somewhat misleading since (e.g.) the category of verbs is narrower than that of verbals. The latter includes, for example, also the stative type of characterising signs (e.g. ANGRY; for transcription conventions used in this paper, see Appendix 1), as well as semantically more phrasal-like signs (i.e. Type 3 verbals; see Sections 1.3 and 4).

question whether the clause is an appropriate unit for – or an existing unit in – the description of FinSL syntax. These issues stem directly from the empirical and inductive basis of the present study.

1.1 Review of differing perspectives on the sign order of transitive structures

Although sign order in FinSL transitive clauses has not been researched systematically before, a few observations on the subject have been presented. In the first linguistic study on FinSL, Rissanen (1985: 126–127) implied that the order patient – agent – verbal was most typical. Takkinen (2000: 57–58), on the other hand, stated that the unmarked order of FinSL transitive structures is subject – verb – object.[3] Itkonen (2001: 372) followed Rissanen and suggested the order patient – agent – verb as the basic sign order in FinSL. The most recent view comes from Veitonen (2004), who claimed that existing orders in textual transitive FinSL structures containing a speech act verb are agent – verb – patient (id., 48) and patient – agent – verb (id., 52), though other orders occur as well (id., 56–58). Overall, I take the suggested orders to display an interesting categorical variation that itself calls for further investigation.

It is worth mentioning that the claim, first made by Rissanen (1985), that FinSL transitive structures are ordered according to the scheme patient – agent – verbal, has had a special status in FinSL-related discussion in that the claimed order has been unofficially accepted as "the basic order of elements" in FinSL. However, it must be noted that the scientific basis supporting this claim is almost nonexistent. For example, with the partial exception of Veitonen, none of the researchers suggesting the order patient – agent – verbal have explicated the data or method they have used in identifying the order (cf. Section 1). The same goes for the order subject – verb – object suggested first by Takkinen (2000). Moreover, the syntactic domain in which the order is supposed to hold has not been specified by any of the researchers. That is, one cannot know if the order holds in the domain of the clause, which is the primary domain in word order studies in general (e.g. Dryer 2005: 330), or in some more complex domain, such as

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[3] The grammatical functions *subject* and *object* have not been defined in FinSL so far, nor has the need to use these functions in FinSL been given serious thought. Takkinen (2000) does not specify what she means by the terms subject and object, but it is probable that she understands the concepts notionally.

the topic-comment structure that in FinSL consists of a clause-external left-detached topic phrase and a subsequent clausal comment (Jantunen 2007, manuscript; see also Section 1.2). In this study, the syntactic domain in which the sign order is identified is given special attention, and the issue is returned to in Section 1.2.

Internationally, views on the sign orders of transitive structures in sign languages have varied considerably. To put it simply, however, it could be said that generative grammar-oriented research into mainly American Sign Language, that is, ASL (e.g. Fischer 1975; Liddell 1980; Neidle et al. 2000; Friedman 1976) has considered the strict SVO-type order (i.e. Subject – Verb – Object) the norm, while other orders – for example, OSV – have been regarded as possible but always somehow marked (e.g. through topicalization). In contrast, functionally-oriented more textual studies have seen sign orders as less strict. For example, Coerts (1994) suggests that Dutch Sign Language does not have one unambiguous sign order, although she points out that the SOV type A1 A2 V order is frequent. Similarly, Engberg-Pedersen (2002) states that in Danish Sign Language both the SOV type APV order and the SVO type AVP order are typical, yet the textual context affects the order strongly. Interestingly, international sign order studies suggest that not only the type of data but also the scientific tradition has a role in determining the sign order found; for example, the claim that ASL has a strict SVO order follows perhaps naturally from the axiomatic word order assumptions of generative grammar, widely used as a theoretical basis in the study of ASL. The role the scientific tradition has in sign order research is returned to briefly in Section 5.2.

On the micro-level, the reversibility status of an expression[4] and the type of the verb(al) (see Section 1.3) have been claimed to affect sign order, although differences can be found both between languages and researchers' opinions (for an overview, see Sze 2003: 164–166). For example, it has been suggested for ASL that the sign order in non-reversible expressions (e.g. 'A girl is watching TV') is, due to semantic unambiguity, freer than that of reversible expressions (e.g. 'A girl loves a boy'), and that the sign order thus functions to distinguish participant roles (e.g. Fischer 1975; Liddell 1980). On the other hand, it has also been

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[4] By *reversible expressions* I am referring to expressions containing a two-placed verbal predicate as well as two nominal core arguments which both share the same characteristics of animacy (e.g. 'A girl loves a boy'). Structurally similar expressions where the degree of animacy of the core arguments is not uniform are *non-reversible* (e.g. 'A girl is watching TV').

claimed that, for example, verb(al)s containing a classifier morpheme would be positioned at the end of the expression (e.g. Liddell 1980; Sze 2003), and that certain verb(al)s (that I am calling Type 2 verbals) would allow more variation in sign order (e.g. Kegl 2004ab). These views on the effect the reversibility status of an expression and the verbal type may have on sign order are compared with the present FinSL data throughout Sections 3 and 4. The extent to which the sign order of FinSL in general agrees with cross-linguistic sign order findings is discussed in Section 5.

1.2   The notion of clause in this article

This article follows the general tradition of word order research in that the syntactic domain in which the sign order of FinSL is investigated is the clause (e.g. Dryer 2005). More specifically, the term *clause*, unless separately stated otherwise, is used in this article to refer to a syntactic unit that consists of a predicating element and its core argument(s), that is, nominal element(s) whose presence is required by the semantics of the predicate. Such a unit may also be termed, following Van Valin (2005), a core-only clause. Clauses may additionally contain also adverbial or prepositional phrases in adjunct function (i.e. peripheral elements in Van Valin's framework) but such clauses fall out of the scope of this study.

Since this article focuses on transitive clauses, the notion of clause may also be regarded as referring solely to structures which are built around the two-placed verbal predicate and which contain two core arguments. This is the definition of the transitive clause used in this article. The core arguments are called more specifically A- and P-arguments (e.g. Engberg-Pedersen 2002: 5; Dryer 2005: 330). The A-argument is a unit which refers to the more active participant (prototypically the agent) in the situation encoded by the two-placed predicate. The P-argument is a unit which refers to the more passive participant in the situation (prototypically the patient).

A prosodic well-formedness condition for declarative transitive clauses in FinSL is that there are no pauses between the different constituents of the clause (i.e. the verbal and the arguments A and P) (cf. Liddell 1980 for ASL; Johnston & Schembri 2006, 2007 for Australian Sign Language). If the first structural constituent is followed by a pause, the structure as a whole is not a clause but a more complex topic-comment structure in which the first constituent is a clause-external left-detached topic element (cf. Van Valin 2005: 6; Johnston & Schembri 2006, 2007:

209). In my previous work (Jantunen 2007, manuscript), I have argued that topic is a core notion in the description of FinSL syntax. More specifically, I have defined FinSL topic in the sense of Chafe (1976: 50) as a structural unit that sets a spatial, temporal or individual framework for the following main predication. This is the sense in which the notion of topic is used in this paper also.

It is not always clear how minimal transitive clauses can be distinguished from topic-comment structures that encode a transitive event and contain a complement-like topic (Jantunen, manuscript),[5] that is, a prosodically detached agent- or patient-like NP that sets an individual framework for the following structurally incomplete comment clause (see Figure 1, and Example 2 in Section 3.1). This ambiguity is partly due to the fact that the concept of pause, crucial in identifying topic-comment structures, is largely relative in the study of signed languages. In this study, I have interpreted as pauses such periods of time where the articulator remains immobile for at least eight hundredths of a second, or more, and I have also considered the nod of the head as an indicator of a pause. The ambiguity in distinguishing transitive clauses from complement-like topic structures is further reinforced by the fact that FinSL seems to be, like Australian Sign Language (Johnston & Schembri 2006), at a stage of development where (by definition) clause-external topics are being grammaticalized into clause-internal subjects (for more, see Jantunen manusript).

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[5] In addition to complement-like topics, Jantunen (manuscript) has identified other topic types in FinSL. The most typical of these is the adjunct-like topic that sets a spatial or temporal framework for the following full comment clause. An example of a topic-comment structure containing an adjunct-like topic is

(i)   TOP[TODAY EVENING] / COM[INDEX-1 GO PUB]
           'I'll go to pub this evening' (*Suvi* 42/1; translated from *Suvi*)
See also example 9a in Section 4. For transcription conventions, see Appendix 1.

**Transitive event
with two participants**

A woman is videotaping a man

Agent referent   Patient referent

Transitive clause

CA1	V	CA2
Arg1	Pred	Arg2
Agent		Patient

'A woman is videotaping a man.'

Topic-comment structure

TOP	CA1/2	V
	Arg1/2	Pred
	Agent/Patient	

(i) 'As for a woman, she is videotaping a man.'
(ii) 'As for a man, woman is videotaping him.'
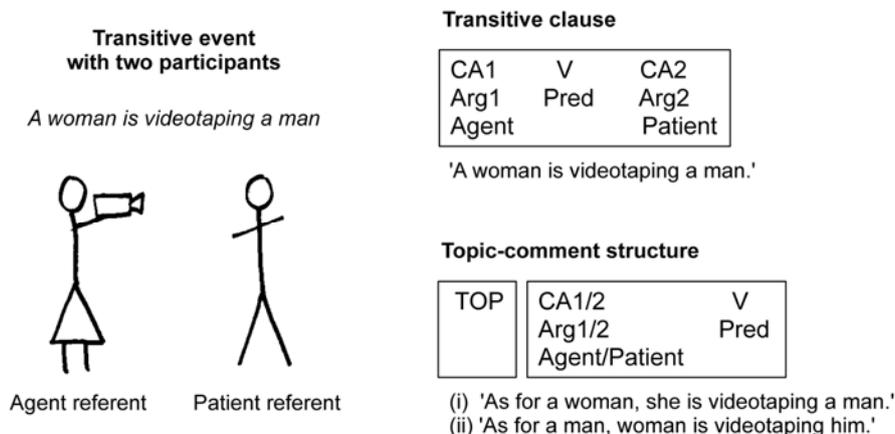
Figure 1. Two ways of encoding a minimal transitive event in FinSL (for abbreviations, see Appendix 1).

Figure 1 shows schematically how a transitive situation can be encoded in FinSL by both a transitive clause and a topic-comment structure.[6] The comment part in the topic-comment structure is interpreted as a structurally incomplete clause. Similar incomplete clausal structures occur also in texts as a result of core argument omission. This phenomenon is discussed further in Sections 3.2 and 5.3.

It should be noted that in Figure 1 the order of elements is only illustrative and does not represent any fixed pattern of the structures in question. For example, the verbal final order should not be taken to define or imply a topic-comment structure.

1.3   On verbal types in FinSL

When dealing with FinSL transitive clauses it is essential to know what types of verbals exist in FinSL since it has been suggested that the type of

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[6] In practice, a (minimal) situation with two participants can also be encoded in FinSL in other structural ways. One is the *split sentence* structure (Johnston & Schembri 2006), where a semantically transitive situation is encoded by two juxtaposed clauses. Another alternative is to divide the encoding responsibility between two lexical verbals. In the literature this phenomenon has been referred to by such terms as *verb sandwich* (Fischer & Janis 1990) and *verb doubling* (Johnston & Schembri 2006). The data collected for this study contains examples of both structures. However, because the focus of this study is only on prototypical single clauses the analysis of these structures is left for future research.

verbal affects sign order (see Section 1.1). In this article I am basing my view of FinSL verbals on a classification which I have proposed and justified in another work (Jantunen 2008a). In principle, my view of FinSL verbal types is based on Liddell (2003), and my central argument is that the verbals in FinSL are divided into three main categories on the basis of their morphemic-gestural structure (i.e. the pointing and descriptive potential of verbals, and their possible omission). The categories are: *Type 1 verbals*, containing only a morphemic component; gesturally pointing *Type 2 verbals*; and gesturally describing *Type 3 verbals* containing a classifier morpheme (i.e. handshape). Table 1 shows a summary of my conception of the verbal types in FinSL (for transcription conventions used in this paper, see Appendix 1).

Table 1. FinSL verbal types (Jantunen 2008a).

	Type 1	**Type 2**	**Type 3_1**	**Type 3_2**
Basic composition	morphemic	morphemic-gestural	morphemic-gestural; consist at the morphemic level of a classifier morpheme (handshape) and an existential movement root (short straight movement)	morphemic-gestural; consist at the morphemic level of at least a classifier morpheme (handshape)
Function of gestural component		indicates by pointing the participants in the situation encoded by the verbal	expresses the existence of an entity in a place by means of locative-topographic depiction	expresses causative or autonomous movement/motion of an entity by means of locative-topographic depiction
Examples	LOVE, KNOW, and LIKE	LOOK-AT, TEACH, and ASK	CL-G-EXIST-"location" 'upright person is at some place'	CL-F-"move in carefull manner" 'to move a pea-like tiny object in a carefull manner', and CL-Y-"fly in a whirling manner" 'an airplane flies in a whirling manner'

It should be noted that although I am basing my view of FinSL verbal types on Liddell (2003), our views are not commensurable. The central difference between our views is related to the subcategorization of Type 3 verbals. In my classification I divide them into two rather than three categories: that is, while Liddell treats all signs drawing the size and shape of objects as descriptive verbs, I regard them as nominals, like Rissanen

(1998), or to be precise, as Size and Shape Specifiers or SASS'es (cf. Liddell 2003: 262; Rissanen 1998: 110–117). My decision is based on the fact that these signs are used as grammatical nominalizers in FinSL (Rissanen 1998: 110–111) and that they would also seem to lexicalize into nominals (id., 110).

2. The data and its processing

All the arguments and conclusions concerning FinSL sign order presented in this article are based on material that has been acquired both by elicitation tests and by examining existing linguistic material. The tests included an argument puzzle and a picture production and selection test, the former being a new type of test specially devised for the present study, the latter a variant of the more commonly used picture elicitation test (see Sze 2003). The already existing data for analysis were collected from *Suvi* (The Online Dictionary of FinSL) and from course material produced at the University of Jyväskylä.

As noted by Johnston et al. (2007: 164), the majority of sign order studies have relied on elicited data. In order to make possible a broader comparison between FinSL and other sign languages, elicitation test data has been given an important role in the present study also. However, in addition to the elicited data, the present study also investigates sign order on the basis of different types of monologues (cf. the *Suvi* data and the course material, which together form most of the textual clause data discussed in Section 2.1.3). The purpose of using multidimensional data is both to take into account the effect the type of data has on sign order (cf. the fact that the order varies more in textual settings) and by doing so to get a more comprehensive picture of the sign order issue in FinSL in general (see Section 1).[7]

The different data and the methods used to compile and classify them are presented in more detail in the following.

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[7] A data type missing from the total material is the so-called natural dialogue (e.g. Johnston et al. 2007: 164). It is obvious that in future studies on FinSL sign order this type of data also has to be dealt with. However, for the success of the present study I do not consider the lack of natural dialogue to be a key issue: the main research question does not demand the use of natural dialogue, and the data used in the study is already more comprehensive than that used in sign order studies in general (ibid.).

2.1 Types of data

2.1.1 Data collected by means of the argument puzzle

The term argument puzzle here refers to a test for analysing the order of the two-placed Type 2 verbal predicate and its core arguments in transitive FinSL clauses that are (a) assumed to be neutral and unvaried in their prosody, (b) lack deictic elements and (c) are minimal in their structure. Consequently, considering criteria (a)–(c), the data obtained through the argument puzzle test forms the most laboratory-like set of data in this study. The purpose of the test was to collect data not influenced by textual factors and in which the ambiguity in differentiating transitive clauses and topic-comment structures is minimised (see Section 1.2). The test was carried out at the University of Jyväskylä in spring 2007, and four native FinSL signers took part in it.

The basis of the argument puzzle was formed by ten two-placed Type 2 verbal predicates and two nominal signs which represented the core arguments of the predicates. The verbal predicates were extracted from a printout obtained from *Suvi*, the internet version of the *Suomalaisen viittomakielen perussanakirja* (1998; The Basic Dictionary of Finnish Sign Language), by using the command 'search for multidirectional signs' (see Table 2). The nominals were the *Suvi* signs WOMAN (*Suvi* entry 289) and MAN (*Suvi* entry 1025). All twelve signs were printed out on paper which was then cut up into small cards.

Table 2. 'Multidirectional' verbals from *Suvi* used in the argument puzzle.

The number of lexical entry/entries in *Suvi*	English gloss of the verbal
213	COMFORT
292	NOTIFY
363/1045	BARK
694	PICK-ON
789	LOOK-AT
864	VIDEOTAPE
1049	FETCH
1080	NURTURE
1094	ARREST
1174/1175	TEACH

Ten schematic pictures of situations where 'woman' and 'man' participated were drawn up on the basis of the meanings of the verbals (see Table 3 for situations and Appendix 2 for examples of the pictures). In five of the situations, the more active participant was the 'woman', and in the other five situations it was the 'man'. Cards were also prepared using the pictures of these situations.

In the test situation, each participant was given four cards in front of them on the table: cards with the signs WOMAN and MAN, a card with a verbal sign, and a card containing an illustration based on the situation the verbal denoted. The participants were first instructed to think about how they would sign the situation pictured on the card as quickly and briefly as possible by using just the three signs shown on the sign cards. After this, they were asked to place the sign cards in the order they thought would be the one by which the situation illustrated could be expressed in the most unambiguous way. The order of the sign cards was recorded in a table on a separate sheet of paper, after which all the cards were collected from each testee. The test was repeated with each participant ten times until each situation was dealt with. The pictures of 'woman' and 'man' were retained unchanged throughout the test, only the picture of the verbal sign and the card illustrating the corresponding situation being changed.

Table 3. The results of the argument puzzle.

No.	Situation	AVP	APV
1.	'A man is watching a woman.'	4	-
2.	'A man nurtures a woman.'	4	-
3.	'A woman is picking on a man.'	4	-
4.	'A man comforts a woman.'	4	-
5.	'A woman is videotaping a man.'	3	1
6.	'A woman arrests a man.'	2	2
7.	'A man notifies a woman.'	4	-
8.	'A woman teaches a man.'	4	-
9.	'A woman barks to a man.'	4	-
10.	'A man picks up a woman.'	4	-
	Instances out of total 40:	*37*	*3*

The results of the argument puzzle are displayed in Table 3. In practice, the order AVP emerged clearly from the test as the preferred order (37 cases out of 40). In three cases the order was APV; this order occurred twice with the construction *a woman arrests a man* and once with the construction *a woman is videotaping a man*. In these cases, however, the testees pointed out that there was a danger of ambiguity of expression: for example, with the situation *a woman is videotaping a man* the interpretation 'both the woman and the man are videotaping something' cannot be fully excluded.

2.1.2 Data collected through picture elicitation

The videotaped material acquired by elicitation was collected by means of a picture production and selection test carried out in pairs at the University of Jyväskylä at the beginning of 2006. The test was followed by an interview based on the pictures used in the test. Test and interview material was collected from three pairs, but the material actually used only consisted of the test material produced by two of the pairs (Pairs 1 and 3) and the interview material of one pair (Pair 2). The reason for limiting the material in this way was, first of all, the desire to eliminate all cases in which the test picture was clearly described and explained (e.g. the cases where the signer did not sign his/her version of the desired situation but described the characters on the paper, for example, *in the right-hand corner of the paper there is a man who...*). Thus the entire test material produced by Pair 2 was excluded from the study. Secondly, the aim in limiting the data was to prefer the actual test material. This is why the subsequent interview material of Pairs 1 and 3 was excluded and, in contrast, only material from the interview of Pair 2 was included in the research, the actual test material from Pair 2 having already been left out (see above). The expressions in the research material (37 cases) that could clearly be semantically connected back to the situations in the test pictures, as well as the immediate contexts of these expressions, were first glossed roughly by a native FinSL research assistant, using a method introduced by Paunu (1983). After this, the sequences in question were further annotated by the ELAN programme,[8] which made it possible to consider, among other things, the prosody of the expressions in a very detailed manner.

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[8] For more detailed information about ELAN (EUDICO Linguistic Annotator), see http://www.lat-mpi.eu/tools/elan/.

The elicitation test was originally created on the basis of a test used by Sze (2003) for Hong Kong Sign Language. Initially, it was planned that the material collected by means of the test should be used to analyze the basic sign order in FinSL, as well as the impact of the reversibility status of the expression and the type of verbal on sign order (Jantunen et al. 2006). Accordingly, eighteen FinSL verbals that could be perceived as transitive and that were distributed evenly between verbal types 1–3 were chosen for the test (see Table 4). For each verbal a 'desired situation' was created together with its reverse or proximate situation (see Table 5), all of which were then drawn in picture form (see Appendix 3 for examples). Altogether eighteen test pictures were produced, along with another set of eighteen pictures of reverse or proximate situations. The pictures representing reverse or proximate situations were used in the test as control pictures to measure the comprehension of the recipient.

Table 4. FinSL verbals chosen as the basis for the elicitation test.

Type 1 verbals	Type 2 verbals	Type 3 verbals
READ	TAKE	bh:CL-(V...)-"jump upwards"-1-2u 'A four legged animal is jumping upwards on a flat surface.'
BUY	LOOK-AT	h1:CL-B-"come to a stop"-3-2 'A rectangular-shaped moving object stops'
EAT	MOVE	h1:CL-Y-"land on a surface"-3u-h2 h2:CL-B-2 'A flying object lands on a flat surface'
LOVE	TEACH	bh:CL-B-"push forward"-1-2 'A living creature pushes a vertical surface'
SING	KISS	h1:CL-F-"pick up"-2d-1 'A living creature picks up a tiny object'
VOTE	HIT	h1:CL-Ô-"put down"-1-2d 'A living creature hands/puts down a flat object'

Each test was taken by two native FinSL signers, A and B (i.e. a pair). In addition, there was a non-native researcher present (the author of this article), responsible for videotaping and giving instructions. Participants A and B each had a set of eighteen sheets of paper stacked in front of them on the table. In the set given to A, each sheet had one picture illustrating the desired situation and each sheet had a different picture/situation. Each of B's sheets of paper contained two pictures attached with Blu-tack©, one of which represented the same situation as the picture on A's corresponding

sheet. The other picture represented its reverse or proximate situation. Each sheet had different pictures/situations. The sheets of paper were placed on the table with the picture side facing down. Person A was instructed to look at the picture on the topmost sheet and to memorize the situation it represented. After this, A was asked to sign the situation to person B. B, in turn, was instructed to take off and lay aside the picture on his topmost sheet that he/she thought represented the situation expressed by A. This task was repeated until all of the eighteen sheets had been dealt with.

Table 5. Desired situations and their reverse/proximate situations created for the elicitation test.

Desired situations followed by their reverse or proximate situations encoded by:

Type 1 verbals	Type 2 verbals	Type 3 verbals
Non-reversibles:	*Non-reversibles:*	*Autonomous movement/motion:*
A girl is reading a book – A boy is reading a book	A girl takes a key – A boy takes a key	A bunny is jumping up the hill – A bunny sits and watches a flower
A boy buys an apple – A boy buys a banana	A woman is watching TV – A woman is watching a ball	A car stops near the house – A car stops near a group of people
A woman is eating pizza – A woman is eating apple	A woman moves to Turku – A woman moves to Italy	A helicopter lands on a roof top – An UFO lands on a roof top
Reversibles:	*Reversibles:*	*Causative movement/motion:*
A man loves a woman – A woman loves a man	A woman is teaching a boy – A boy is teaching a woman	A man pushes a car – A man pushes a refrigenerator
A boy sings to a girl – A girl sings to a boy	A boy kisses a girl – A girl kisses a boy	A girl picks up a berry – A boy picks up a berry
A man votes a donkey – A donkey votes a man	A burglar hits a man – A man hits a burglar	A boy puts down a book – A boy puts down a shoe

In the interview after the test, the non-native researcher showed B the pictures on the basis of which A had produced his expressions. B was then told to sign his own view of the situation represented by each picture. The aim was, in addition to eliciting material from the more passive party in the original test, to test how the presence of a Finnish-speaking interviewer might influence the sign order.

2.1.3 Text material

Besides the above-mentioned test material, the arguments and conclusions in this article on the sign order of FinSL transitive clauses are also based on

inherently more textual data collected from two further sources.[9] The more extensive of these two sets of data is a sample of 32 verbal-centered expressions compiled from the mini texts of *Suvi* (the Online Dictionary of FinSL). The other, smaller set of text material is a twenty-second excerpt of signed everyday-style narrative. Qualitatively, both data sets represent a type of monologue, the data from *Suvi* being more rehearsed than the everyday-style narrative.

The mini texts from *Suvi* were collected by going through the example sentences[10] in articles 1–65 of the Suomalaisen viittomakielen perussanakirja (1998) and by picking the cases that clearly included one- or two-placed verbals. All the collected expressions were glossed manually from a video using the method introduced by Paunu (1983).

The excerpt of signed text used as the second set of material was a twenty-second extract from an everyday-style travel narrative monologue. The material was originally produced by a native signer to serve as practice material on Finnish Sign Language courses SVKS111 and SVKS112 at the University of Jyväskylä. For the purposes of this research, the material was annotated using ELAN.

2.2 Classification of the data

The data used in this article is distributed along the continuum *isolated clauses – textual clauses.* The term isolated clauses refers to clauses that are independent (in the sense that they 'have not been extracted from a larger linguistic mass') and in the extreme cases even laboratory-like (cf. Givón 2001: 16). Isolated clauses are not merely abstractions created by a linguist but belong to the repertoire of any native signer, for example, in educational domains. The term textual clauses is used to refer to clauses which are extracted from larger texts, that is, from linguistic domains larger

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[9] The terms *text* and *textual* are used in this paper in their abstract sense to refer to (transliterated material extracted from) discourse contexts larger than a single clause. The use of the term text in this sense follows the more general FinSL research tradition initiated by Rissanen (1985: 3).

[10] *Suomalaisen viittomakielen perussanakirja* (1998; The Basic Dictionary of Finnish Sign Language) and its internet version *Suvi* (The Online Dictionary of FinSL) are made up of a total of 1 219 dictionary entries which altogether include c. 5 000 signed mini texts. These mini texts are perhaps somewhat misleadingly also called *example sentences*.

than a single clause. Figure 2 illustrates roughly the positioning of all the sets of data used here on this continuum.

argument puzzle   elicitation test   interview
                                        Suvi's mini texts   travel monologue

ISOLATED CLAUSES   TEXTUAL CLAUSES
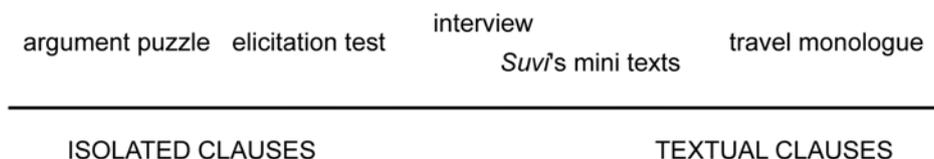
Figure 2. Sets of data used in this study positioned roughly on the continuum isolated clauses – textual clauses.

In practice, the category of isolated clauses consists of clauses collected through tests (the argument puzzle and picture elicitation test), although the material collected through picture elicitation also includes textual clauses. Because of the context created by the interview situation, the material elicited in the interview falls largely into the category of textual clauses, yet it also includes cases that can be clearly analyzed as isolated clauses. The material from *Suvi* contains mostly textual clauses but, like the interview material, also includes expressions that can be classified as isolated clauses. The travel narrative monologue includes only textual clauses.

The principal distribution of the material into isolated and textual clauses provides the basis for further analysis of the transitive clauses containing Type 1 and 2 verbals in this study (see Section 3). Expressions built around Type 3 verbals also have their place on the continuum of isolated and textual instances but these expressions are addressed as a category of their own (in Section 4). One of the reasons why expressions built around Type 3 verbals are not treated together with Type 1 and 2 verbals is that it is not yet fully known exactly how many placed predicates these verbals are and how many core arguments we should thus expect the clauses around them to have (see, for example, Benedicto et al. 2007). The syntactic behavior of Type 3 verbals, presented in Section 4, further motivates this decision.[11]

It should be noted that although the material used in the study has been collected from several sources, and although it is so far the most

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[11] A further reason to treat Type 3 verbal-centered expressions separately is that they seem to inherently imply topic-comment structures. Hence, for example, the preference for the use of the term *expression* instead of clause.

comprehensive set of data that has been used to study FinSL sign order, it still remains too narrow for making statistical generalizations. Thus, in the following sections FinSL sign order is not analyzed numerically.

3. FinSL transitive clauses including Type 1 and Type 2 verbals

The following presents the most important findings on how a two-placed verbal predicate of Type 1 or Type 2 and its core arguments were organized in the isolated clauses (3.1) and textual clauses (3.2) of the data.

3.1 Isolated clauses

According to the data, the A-argument is expressed before the V and P-argument without exception in FinSL declarative transitive clauses that are isolated and include a verbal of Type 1 or 2. The verbal in these clauses is positioned either between the arguments or at the end of the clause. Thus, in practice, the order of isolated transitive clauses in FinSL is either AVP or APV (cf. Engberg-Pedersen's 2002 analysis of Danish Sign Language). For example (for coding and transcription conventions, see Appendix 1):[12]

(1)   a. [$_A$[MAN] $_V$[LOOK-AT] $_P$[WOMAN]]
        'A man is watching a woman.' (argument puzzle, 1)

        b. [$_A$[WOMAN] $_V$[VIDEOTAPE] $_P$[MAN]]
        'A woman is videotaping a man.' (argument puzzle, 5)

        c. [$_A$[WOMAN] $_P$[MAN] $_V$[ARREST]]
        'A woman arrests a man.' (argument puzzle, 6)

        d. [$_A$[BOY] $_P$[APPLE] $_V$[BUY]]
        'A boy buys an apple.' (elicitation test, 5)

        e. [$_A$[GIRL] $_P$[TV] $_V$[LOOK-AT]]
        'A girl is watching TV.' (elicitation test, 9)

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[12] In (1), Type 2 verbals occur in their lexical form, that is, they are not gesturally directed towards a specific location.

f. [_A[BOY] _V[KISS] _P[GIRL]]
    'A boy kisses a girl.' (elicitation test/interview, 16)

Clauses (1a)–(1c) represent prosodically neutral laboratory clauses corresponding to situations 1, 5 and 6 in the argument puzzle. Clauses (1d)–(1f), in turn, have been obtained by elicitation and exhibit variation in prosody. The prosodic characteristics of clause (1d) are a very fast signing tempo as well as a prominent position of the eyes and eyebrows associated with the first sign (i.e. eyes widened and eyebrows raised) and a subsequent quick blink of the eyes, marking the constituent boundary (Jantunen 2007; for ASL, see Wilbur 2000: 228). Similarly, clause (1e) is characterized by fast tempo. However, in contrast to clause (1d), the first element of clause (1e) is not associated with a prominent position of the eyes and the eyebrows but, during the sign GIRL, the head is bent slightly towards the non-dominant hand; the position of the head is neutralized between the signs GIRL and TV. The clearest prosodic characteristic of clause (1f), obtained in the interview following the elicitation test, is that the signer stresses the verbal sign in the middle.

Contrary to what might be expected on the basis of, for example, Rissanen's (1985) and Itkonen's (2001) statements on FinSL sign order (cf. the order patient – agent – verbal discussed in Section 1.1), there were no clauses beginning with the P-argument in the data of the isolated clauses. The data did seem to include clauses beginning with the P-argument but, on the basis of their prosody, i.e. primarily on the basis of the pause following the initial constituent, they were interpreted as topic-comment structures (see Section 1.2). The topic in these structures was a complement-like unit setting an individual framework and sharing patient-like characteristics (for more details, see Jantunen manuscript). An example of such an expression is given in (2):

(2) [_{TOP}[KEY INDEX-4d] / _A[WOMAN] _V[TAKE-4d-1]]
     'A woman picks up a key.' (elicitation test, 32)

In general, the data used in this article does not support the view that the type of verbal (1 or 2) or the reversibility status of the expression itself motivates the order of the transitive clauses in FinSL (cf. Fischer 1975; Liddell 1980; Sze 2003; cf. also Rissanen 1985: 126–127, who presumes that 'multidirectional verbals', corresponding to verbals of Type 2 (and 3), would be positioned at the end of the transitive structure). Instead, pointing

elements realized as free units (in contrast to the pointing Type 2 verbals) seem to have a role as definers of the sign order: isolated clauses without pointing elements, where both arguments are animate (i.e. in reversible expressions), strongly favor the order AVP (see the results of the argument puzzle in Table 3). The preference for the order AVP probably has to do with the functions of pointing in FinSL, as well as with the iconic relationship that is claimed to prevail between the order AVP and real-world situations. Pointing is used grammatically in FinSL, for example, to indicate the participants in a situation (cf. below; see also Rissanen 1998: 105–110, 117–121). Thus, if the use of pointing is restricted artificially, distinguishing between the participant roles remains largely to be done through sign order. For this purpose, the order AVP can be considered ideal, since it has been claimed to correspond best to the temporal-logical structure of a situation in the real world (i.e. actor > act > patient; see Itkonen 2001: 14; cf. also Givón 2001: 35).[13]

On the basis of the material it would seem that even the order APV can – probably case and signer specifically – distinguish between the participant roles in reversible isolated transitive clauses which lack pointing elements (cf. the three APV orders in the argument puzzle, one of which is presented in 1c). However, in such cases it is probable that the initial constituent of a clause (the A-argument) is marked prosodically by the prominent position of the eyes and the eyebrows (eyes widened and eyebrows raised; cf. example 1d). In FinSL, this feature also marks the topic, but since prosodic marking in these cases is not associated with the unit detached to the left from the clause by a pause, it is interpreted as a grammatical (prosodic) marker of the subject (Jantunen manuscript).

In practice, however, the order APV is rare in reversible isolated transitive clauses lacking a pointing element (cf. the argument puzzle). The reason for this is ultimately its ambiguity in distinguishing the participant roles: as regards the order APV, the interpretation 'both x and y are doing something' cannot be completely excluded. In contrast, in reversible clauses which include a pointing element the APV order is more typical, for example:

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[13] Furthermore, the order AVP would seem to belong to a register close to the Finnish language (cf. Engberg-Pedersen 2002: 16, 33). This interpretation is supported by the fact that this order was slightly preferred in the interview, carried out by a Finnish-speaking researcher, after the elicitation test.

(3)   [A[TEACHER] P[BOY+B-INDEX-2] V[EXPLAIN]]
       'A teacher explains to a boy.' (elicitation test, 25)

In (3), the semi-bound pointing index with the palm (B-INDEX) associated with the P-argument indicates the patient referent, i.e. the object of the action.[14] In the light of the present data, it is interesting that if a transitive clause includes any pointing elements, they seem to be connected precisely with the P-argument (indicating the patient); the pointing elements linked to the seemingly A-argument-like topic function as topic markers in FinSL (see Jantunen 2007, manuscript; Rissanen 1985, 1998; cf. example 2).

In general, the clause in (3) is prosodically somewhat halting, because of the signer's hesitation. The initial constituent of the clause involves a prominent position of the eyes and eyebrows.

3.2   Textual clauses

On the basis of the text material, we can conclude that the orders AVP and APV identified in isolated transitive clauses are generally also found in more textual transitive clauses. Example (4) illustrates a transitive clause with the order AVP right at the beginning of a text:

(4)   [A[INDEX-1] V[ENROL] P[KNOW+CONTEST]]   INDEX-1 COME-IN /
       ANSWER / INDEX-1 LOOK-ONE-BY-ONE-2u-d   ...
       'I took part in a quiz and when I was later looking at my answers…' (*Suvi* 51/2;
       translated from *Suvi*)

In (5), the transitive clause with the order APV is inside the text:

(5)   EARLIER INDEX-1 YOUNG / [A[INDEX-1] P[MOTORCYCLE] V[RIDE-
       MOTORCYCLE-fast]]   ...
       'When I was young I was riding my motorcycle…' (*Suvi* 25/2; translated from
       Suvi)

In practice, the text material confirms the results obtained from the investigation of isolated clauses concerning the central role of the orders

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[14] In practice, the referent representing the patient does not have to be physically present but it can also be located in conceptual space (for more details, see Liddell 2003).

AVP and APV in FinSL, both occurring relatively frequently in the textual data. In addition, the investigation of text clauses also contributes unquestionable added value to research into FinSL sign order, enabling us to further identify a third structure of transitive clauses, PAV, not found in isolated clauses. This structure corresponds, in my view, to the patient – agent – verbal structure proposed by Rissanen (1985), Itkonen (2001) and Veitonen (2004). However, on the basis of the present data, the order can only be assigned a marginal role in FinSL, since in contrast to the orders AVP and APV, clauses with the order PAV were rare in the textual data. The sequence at the beginning of the following text is an example of a clause with the order PAV:[15]

(6)   [P[BOOK] A[INDEX-1] V[SEARCH]]   FIND / SIGH-ON-RELIEF   YES LAST
          PIECE   GOOD FORTUNE
       'I was desperately searching for a book, and fortunately I found it eventually.'
          (*Suvi* 46/1; translated from *Suvi*)

As regards the order of the verbal predicate and its core arguments, textual clauses allow more variation than isolated clauses. One significant reason for this can be considered to be the fact that in text both the linguistic and non-linguistic contexts offer more clues for, for example, making a distinction between the different participant roles. Moreover, the analysis of the textual clauses suggests that in the everyday use of FinSL sign order is not perhaps the most important factor affecting the functioning of language and language understanding. This conclusion is supported by the finding that one or even both of the core arguments can be omitted in textual clauses (cf. Engberg-Pedersen 2006; Johnston & Schembri 2007: 208). The following example from the travel narrative monologue illustrates this phenomenon (the symbol ">" indicates that the hand moves sideways retaining the configuration of the previous letter; the letter S in square brackets is an unrealized handalphabet):

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[15] The clause demonstrated in (6) is actually a slightly marked one since the non-dominant hand perservates in the utterance as a *fragment buoy* (Liddell 2003: 248) after the P-argument.

(7)   ... / SUCH-AND-SUCH   INDEX-1 FLY-PLANE-"arc shape"-3-4   STAY-IN-4
         INDEX-4 / MEET-4   INDEX-4   DALLAS D-A-L>-A[-S] AIRPLANE
         AREA INDEX-4   MEET INDEX-4   INTERNATIONAL
         RESPONSIBILITY ISSUES /...
       'Such things. Then I flew there and met there at the Dallas airport the person
         responsible for international affairs.'

The text excerpt in (7) includes three verbals that can be classified as (at least) two-placed predicates: FLY-PLANE, STAY-IN, and MEET; out of these, the verbal MEET is found in two different forms. Interestingly, in the text the argument structure of none of the verbals is manifested as syntactically maximal: of the arguments of verbal FLY-PLANE, only the A-argument (INDEX-1) is realized; with the verbals STAY-IN and MEET, the A-argument is in turn omitted.[16]

4.   Structures containing a Type 3 verbal

In FinSL, information on the semantic arguments of the predicate is automatically encoded in Type 3 verbals (cf. Rissanen 1998: 139; cf. also Benedicto et al. 2007). In practice, the arguments are marked by classifier morphemes that in signed languages are realised by handshapes (for more details on the classifier handshapes in FinSL, see Rissanen 1985: 96–99, 1998: 117–121, 176–203; Takkinen 2002: 121, 2008: 24–26). The classifier handshapes in FinSL are divided into two subcategories, termed the whole-entity classifier (e.g. the handshape representing the cabin and wings of an airplane in the verbal CL-Y-"fly in a whirling manner" 'an airplane flies in a whirling manner') and the handling classifier (e.g. the handshape in the verbal CL-F-"move in careful manner" 'to move a pea-like tiny object in a careful manner', which reflects the way a tiny object is usually grasped by humans). Of these, the whole-entity classifiers always refer to the first argument of the predicate (cf. the A-argument), whereas the handling classifiers refer to the second argument (cf. the P-argument).

On the basis of the ability of Type 3 verbals to mark the arguments, FinSL can be considered a head-marking language, typologically resembling, for example, Navajo and Trotzil (Nichols 1986; Van Valin

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[16] Due to the small number of bound morphemes, as well as the tendency to omit core arguments, excellently illustrated by the travel monologue, FinSL can be classified in my opinion as a *compositionally associative language*, as described by Gil (2008).

2005: 16–19).[17] Compare the following examples (8) and (9) from Trotzil and FinSL, respectively (the Trotzil example is from Van Valin 2005: 16):

(8) a. *?i-Ø-s-pet   lokel ?antz   ti   tul-e.*
        ASP-3ABS-3ERG-carry   away woman DEF rabbit-DEF
        'The rabbit carried away the woman.'

    b. *?i-Ø-s-pet.*
       ASP-3ABS-3ERG-carry
       'He/she carried him/her/it.'

(9) a. STONE+SASS-(B^)-"upward flat surface"-1-2u / BUNNY bh:CL-(V...)-"jump
        upward a flat surface"-1-2u
       'A bunny is jumping up the hill.' (elicitation test, 6)

    b. bh:CL-(V...)-"jump upward a flat surface"-1-2u
       'A four legged animal is jumping upwards on a flat surface.'

An essential characteristic of strong head-marking languages, such as Trotzill, is that free morphemes, which in terms of traditional grammar function as verb complements, can be omitted from the clause (see 8b, where the words for 'woman' and 'bunny' are omitted at the lexical level).[18] The well-formedness of a clause does not suffer from this, since the verb as such contains references to the referents of these omitted words (Van Valin 2005: 16–19). Example (9) illustrates how the same applies to FinSL: the core argument referring to the 'bunny' need not be expressed lexically to achieve well-formedness, since the whole-entity classifier contained in the verbal expresses this argument automatically. However, for the sake of semantic unambiguity, expressing the core argument

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[17] In practice, languages form a continuum in terms of whether they mark the arguments in the dependent member (*dependent-marking languages*) or in the head (*head-marking languages*) (Nichols 1986: 68–69). For example, Navajo and Trotzil are strongly *head-marking* languages, whereas Russian is a strongly *dependent-marking* language. Nichols (1986) regards Finnish as a *split-marking* language, and Quechua, for example, as a *double-marking* language.

[18] Van Valin (2005: 16–19) claims that pronominal bound morphemes linked to the head, i.e. the verb are complements/core arguments of the verb *per se*, whereas free nominal units occurring with the verb are solely optional elements specifying the meaning of the arguments.

lexically may be necessary, which also applies to Trotzil (cf. example 8). The expression 'mountain' in front of clause (9a) is an adjunct-like topic setting a spatial-locative framework (Jantunen manuscript).

In general, I analyze Type 3 verbals in FinSL as head-marking verbals. Syntactically, these verbals would seem to have a special status in FinSL. The material collected by the elicitation test gives reason to claim – along the lines of international research (e.g. Liddell 1980; Sze 2003) – that structures containing a Type 3 verbal, i.e. a verbal including a classifier handshape, are without exception verbal final. On the basis of the material, a corresponding strict organizational principle cannot be identified in FinSL structures that contain a verbal of Type 1 or 2.

A more specific, yet still very preliminary, finding related to the sign order of expressions containing a Type 3 verbal in FinSL would seem to be a tendency to place the nominal constituent referring to the first semantic argument of the predicate immediately before the verbal including a whole-entity classifier. Examples:

(10) a. HOUSE-2   CAR CL-B-"comes to a stop"-3-2
          'Car stops near the house.' (elicitation test, 2)

      b. MAN CL-G-EXIST-2 ⬜ WOMAN+B-INDEX-2 ⬜ SING
         'A man sings to a woman.' (elicitation test, 11)

In contrast, the sequence referring to the second argument would seem to show a tendency to be placed immediately before the verbal containing a handling classifier:

(11) a. BOY   BOOK+bh:SASS-(B^)-"half of a rectangular"-2 h1:CL-(B^)-"set
          down"-1-2d
          'A boy sets down a book.' (elicitation test, 7)

      b. GIRL   TINY+BERRY CL-(L...)-"pick up"-2d-1
          'A girl picks up a tiny berry.' (elicitation test, 14)

However, as already stated, the above-mentioned remarks concerning the relationship between the arguments and the types of classifiers (in Examples 10 and 11) must be regarded as preliminary observations only. A more detailed analysis of the issue would require much wider material.

5. General discussion

5.1 On the regularity of FinSL sign order

Are the two-placed verbal predicate and its core arguments organized in FinSL declarative transitive clauses in some specific manner? Judging by the material analyzed in the study, transitive clauses in FinSL do not have any certain unambiguous sign order: the verbal and its core arguments can, in general, be organized in at least three alternative ways: AVP, APV and PAV. Isolated clauses only occurred with the orders AVP and APV. These orders were frequent also in textual clauses, which also exhibited the order beginning with the P-argument, that is, the order PAV.[19] In textual clauses it was also typical to omit core arguments completely. This phenomenon was probably enabled by the more extensive linguistic and non-linguistic context.

The present study provides evidence against the belief common in the field of FinSL that the PAV-type of patient – agent – verbal order is the only possible order of elements in FinSL (see Rissanen 1985, Itkonen 2001 and Veitonen 2004 in Section 1.1). In fact, the present study suggests that the order PAV has only a marginal role in FinSL clauses because, by comparison with the relative frequency of the orders AVP and APV in texts, its occurrence was relatively infrequent. However, in order to address this question properly, a more comprehensive set of textual data is needed. Moreover, the fact that it is not typical in the domain of the clause does not mean that the patient – agent – verbal type of order does not have a role in more complex topic-comment structures – in fact this is to some extent even implied by the data (cf. the fact that orders seemingly beginning with the P-argument were identified in terms of a topic-comment structure where the topic is a complement-like topic containing features of a patient; for more details, see Jantunen manuscript).[20]

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[19] In comparison to Greenberg's (1966) original six-way word order typology (SOV, SVO, VSO, VOS, OVS, OSV), only transitive clauses organized according to the principles SOV (APV), SVO (AVP) and OSV (PAV) were found in FinSL in this study. There seem to be no orders in FinSL corresponding to Greenberg's types VSO (VAP) and VOS (VPA) (cf. comments on clauses beginning with a verbal in the later body text). However, there are implications that an OVS-style PVA order could occur in the textual clauses. To analyze the issue in more detail, wider data is needed.

[20] A more theoretical question relating to this issue is whether the patient-resembling complement-like topic should be called patient or simply a topic. In my previous work

Although the two-placed verbal predicate and its core arguments are not organized in a single uniform manner in FinSL, nonetheless FinSL sign order cannot be considered completely free. First of all, as the widest micro-level generalization concerning FinSL transitive structures, it can be concluded that the A-argument was always expressed before the verbal in the data. Second, as regards isolated transitive clauses containing a verbal of Type 1 or 2, it can be stated that the A-argument occurred always before the P-argument. There were no instances in the material of isolated clauses of an order with a clause beginning with the P-argument. Third, also as regards isolated transitive clauses built around Type 1 and 2 verbals, it can be concluded that the position of the verbal in FinSL clauses is not arbitrary. In the material, the verbal was always placed either between the arguments or at the end of the clause, never at the beginning of the clause. Fourth, the order AVP seems to be the only unambiguous order in prosodically neutral isolated declarative transitive clauses which are built around Type 2 verbals, are reversible, and lack pointing elements (cf. Rissanen 1985: 126). However, contrary to what Fischer (1975) and Liddell (1980) claim to be the case with ASL, reversibility as such would not seem to determine sign order in FinSL.

The position of the verbal in FinSL clause-like expressions including Type 3 head-marking verbals seems to be fixed. In the material analyzed such expressions ended in verbals without exception. Judging by the material, the other types of verbals (1 and 2) do not have as direct an effect on sign order in FinSL (cf. Kegl 2004ab, according to whom verbs in ASL identified as FinSL Type 2 verbals allow a freer order).[21]

5.2 FinSL in relation to other sign languages

In general – and especially as regards the main features in the organization of transitive clauses – FinSL would seem to resemble the other sign

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(Jantunen, manuscript) I have argued for the latter option. The basis of my argument goes back to Lambrecht (1994) who, in turn, argues that left-detached topics do not by necessity have any syntactic (e.g. subject or object) or semantic (e.g. agent or patient) relation to the predicate of the comment clause.

[21] An interesting additional finding concerning sign order in FinSL is that the orders yielded by the elicitation test for the different signers and situations were fairly stable. In practice this means that the signers preferred one structure in each test: among the pairs participating in the test and included in the test material, Pair 1 preferred the APV structure, whereas Pair 3 preferred the topic-comment structure.

languages studied so far – to a remarkably high degree. First: just like, for example, ASL (Fischer 1975; Liddell 1980; Neidle et al. 2000), Australian Sign Language (Johnston & Schembri 2007: 202–208), Dutch Sign Language (Coerts 1994) and Danish Sign Language (Engberg-Pedersen 2002), FinSL, too, places the unit identifiable as the A-argument before the V, and strongly tends to express this unit also before the unit identifiable as the P-argument. Second: just as the other sign languages studied so far, FinSL also avoids structures beginning with V (e.g. Liddell 1980; Engberg-Pedersen 2002: 10; Johnston & Schembri 2007: 202–208). Third: just as in ASL (e.g. Liddell 1980) and in Hong Kong Sign Language (Sze 2003), FinSL places Type 3 head marking verbals containing a classifier at the end of the corresponding expression.

It is evident that FinSL shares its core sign-order related structural features with other sign languages. In other words, we can generalize and say that the linearization principles of FinSL correspond to the linearization principles of other sign languages in their core parts. In spite of this, however, views on the sign orders of different sign languages (and on the sign order of one and the same sign language; see following section) seem to vary considerably. For example, while this article stresses that transitive clauses in FinSL do not have one certain unambiguous principle of sign organization, it is claimed that, for instance, ASL is organized primarily according to the AVP style SVO principle (see Fischer 1975; Liddell 1980; Neidle et al. 2000). Is FinSL then, after all, a different language from ASL in terms of sign order?

As a partial answer to this question, already implied in Section 1.1, I do not want to suggest here that the differences between my view on sign order in FinSL and other views on (e.g.) ASL actually imply fundamental differences in the structure of FinSL and ASL, but rather that they have to do with different scientific traditions (see also the next section which deals with how the data affects views on the strictness of sign order). Research into ASL has traditionally been closely linked with the formal generativistic tradition, whereas the view I have presented in this article is, based on the general assumptions of Basic Linguistic Theory, more functional and typological in nature. It is a well known fact that the assumptions regarding word and sign order held by these two different linguistic orientations are different (cf. Comrie 1989: 1–5; on the more general discussion, see also Penke & Rosenbach 2004). Let me clarify my argument with a brief mental experiment: if the results on the FinSL sign order presented in this article were placed within a generativistic

framework, it could be claimed that even FinSL is a language preferring the AVP order of the SVO style. This is due to the fact that the order AVP was clearly favoured in the argument puzzle and that the clauses investigated in the test (i.e. prosodically neutral minimal reversible transitive clauses consisting of full lexical NPs) have the status of prototypical clause structures within the generativistic framework (e.g. Fischer 1975: 5). On the other hand, the argument can also be justified by the fact that the sign order has been recognized to vary even in ASL, largely in the same manner as I have suggested regarding FinSL (e.g. Fischer 1975; Liddell 1980; Neidle et al. 2000). In spite of this, however, the generativistic tradition still presumes (irrespective of the orientation and its versions; cf. Chomsky's original view from 1965 and the later minimalistic views) that the variation goes back to one universal deep structure. In the end the question of the effect the scientific tradition has on research into sign order is an empirical one and calls for a specific study.

It should be noted that the structure of transitive clauses that has been characterized as fundamental above is often referred to as *basic sign order* (*basic word order* in spoken languages). However, in this article, the term basic sign order is not used. The reason for this is that, within the present functionally oriented framework, the status of an order as the basic order must be established by, for example, quantitative investigation and different criteria of markedness (e.g. Hawkins 1983: 12–16; Givón 2001: 37–41). The material used in this article is too limited to allow such an investigation.

5.3   Methodological and theoretical implications for the future study of FinSL

The present study provides further support for the argument that the type of data has a role in determining findings as to the order of elements in a clause (e.g. Johnston et al. 2007). In this study, clauses have been distributed along a continuum between isolated clauses and textual clauses. This classification of the data proved to be a significant methodological factor and it should thus be taken into account in future research into FinSL sign order. In absolutely isolated clauses, the order of the verbal predicate and its core arguments turned out to be largely regular (cf. the order AVP in the argument puzzle), whereas the number of alternative orders increased as the clauses became more textual (cf. the fact that the order PAV was only found in the material consisting of textual clauses and that the core

arguments are not necessarily even expressed in textual clauses). Classifying the material into isolated clauses and textual clauses also explains why studies have yielded diverging results on the sign order of even one and the same language. Fischer (1975) and Friedman (1976) provide a classic example of this: Fischer claims, primarily on the basis of an analysis of isolated clauses, that the basic sign order in ASL is SVO, whereas Friedman, basing her research on text material, claims that the sign order of ASL is free (cf. previous section and Section 1.1).

The omission of the core arguments in the text material is an important phenomenon in FinSL, just as, for example, in Danish Sign Language (Engberg-Pedersen 2006) and Australian Sign Language (Johnston & Schembri 2007: 208). As has been stated in Section 3.2, this phenomenon probably indicates that sign order is not, after all, a central factor in the functioning and understanding of FinSL. Furthermore, omitting the core argument or arguments may also have implications for a more fundamental issue regarding the clause and its role in FinSL: if the basic structure of the clause in FinSL is very unstable to begin with (as the text material indicates; cf. varying sign order and core argument omission), it may be that the clause (as the notion has been defined in this article, see Section 1.2) should not be given a central role in the description of FinSL syntax. If this line of reasoning is taken to its logical conclusion, it means that in the future analysis of FinSL syntax it might prove fruitful to abandon the traditional clause-centered line of thinking altogether and to consider FinSL from a whole different perspective.

What would such a perspective be? One relevant option that I would like to suggest is provided by Brazil (1995) who argues for the prosody-based linear surface-level analysis of spoken language syntax. His guiding assumption is that in speech elements are put together in piecemeal fashion in real time and accordingly the analysis of spoken language syntax must be based on conceptual machinery that reflects this (id., 21). The clause as a part of a sentence is in Brazil's framework ultimately a written language-based hierarchical unit that does not serve best the linear analysis of speech. Instead, units identifiable as syllables and intonation phrases can be considered as more fitting candidates for this purpose.

Brazil's founding idea is both innovative and easily adaptable to the study of FinSL, and even sign language syntax in general, for signing shares most of the prototypical characteristics of speech. It may even be that the piecemeal production of elements mentioned by Brazil is emphasized in signing, since it is not at all atypical to find signing that

resembles sequences of simple single signs without any cohesive prosodic features. A positive consequence of adopting Brazil's main idea in the study of (Fin)SL would be the fact that these important non-manual prosodic characteristics would inherently receive more attention. In the end, not even the requirement for the syllable-like unit would be an obstacle: syllables exist in signing, also in FinSL (e.g. Jantunen & Takkinen forthcoming).

Apart from the arguments concerning clause internal features such as varying sign order and the phenomenon of core argument omission, the suggested non-centrality of the clause in the description of FinSL syntax can be argued for even from a more external perspective. By this I refer to the pantomimic and gestural features that are an inherent part of many signed utterances. For example, in (12) it is not the clause, or any other linguistic unit (in the traditional sense) directly linked to it, which expresses the thematic information 'text or paragraphs on the computer screen'; in fact, the P-argument that could be supposed to express this meaning is omitted from the transitive clause [INDEX-1 LOOK-AT-2u-2d], resulting in an incomplete clausal structure AV. Instead, the meaning is constructed mentally on the basis of the text initial topic 'computer' – limiting the typing process to the domain of computers and not, for example, to the domain of typewriters – and the pantomimic act in which the signer imagines the computer screen in front of her.

(12)   [TOP[KNOWLEDGE+MACHINE] / COM[INDEX-1 WRITE-KEYBOARD]] /
          [A[INDEX-1] V[LOOK-AT-2u-2d]] / BETTER ...
       'As I read the text that I had written on the screen I noticed that [the two
          paragraphs were better in an opposite order...]' (*Suvi* 4/2; translated from
          Suvi)

Important pantomimic aspects of signing, crucial both in understanding the fine details of the intended message and also in creating textual cohesion, are currently not captured effectively by any of the mainstream syntactic theories, whether they rely on the unit clause or some other traditional syntactic unit (e.g. the sentence). However, more cognitively oriented frameworks, such as that of Liddell (2003), which builds on Cognitive Grammar (e.g. Langacker 1986) and Mental Space Theory (Fauconnier 1994), are capable of addressing these features. Consequently, in order to describe FinSL syntax from the most objective and data-oriented

perspective, combining Brazil's linear "syntax of speech" approach and, for example, Liddell's cognitive framework might be useful.

As a final note, it must be emphasised that to say the clause may not be a core notion in the description of FinSL syntax is not to say that the clause is not an existing unit in FinSL syntax. The clearest justification for this claim is the fact that there were clearly structurally perfect clauses in FinSL in both the test and text material. Moreover, it may well be that in the course of the diachronic development of FinSL the role of the clause is becoming reinforced. It has been suggested even in this article (see Section 1.2; for more, see Jantunen manuscript) that certain topical units (i.e. complement-like topics) are being grammaticalized into grammatical subjects in FinSL. On a broader scale, this means automatically that also independent topic-comment structures encoding the transitive situation are being grammaticalized into transitive clauses. A similar process seems to have been discovered in Australian Sign Language (Johnston and Schembri 2006)

6. Conclusion

This article has investigated sign order in FinSL declarative transitive clauses and shown that the two-placed verbal predicate and its core arguments (A- and P-argument) are not organized in a single specific way and the orders AVP, APV and PAV are all found. However, the order beginning with the P-argument was not found in isolated clauses and only occurred marginally in textual clauses in which a typical phenomenon was the omission of core arguments.

The present article constitutes the first systematic study of the sign order of FinSL transitive structures. As a methodological contribution to research into sign order, a distinction has been made between isolated clauses and textual clauses. On the basis of the results obtained, this distinction would seem to be central in FinSL. As a typological contribution, this article has shown that FinSL can be regarded at least partly as a head-marking language resembling, for example, Trotzil and Navajo and that the core organizational principles of FinSL transitive clauses correspond to the linearization principles documented in other sign languages. As a more theoretical point, the article has suggested that in the end traditional clause-centered description might not serve best in the study of FinSL syntax. Rather, a combination of prosodically motivated linear surface analysis and cognitive analysis is suggested.

In view of the narrow range of the material used in this study, it was not possible to study sign order on the basis of numerical frequency. Evidently a core challenge in FinSL research is the creation of a wider corpus. This corpus could not only serve as the basis of further research into sign order but also provide a deeper foundation for linguistic research into FinSL in general. Internationally, the value of sign corpus work has already been recognized and there are a number of corpus projects already underway (e.g. Crasborn et al. 2007; Crasborn et al. 2008).

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Appendix 1.

Coding and transcription conventions used in this paper.

Manual behavior in signs

ANGRY   Signs are referred to, according to the standard
                   convention in sign language research, as glosses which
                   are to be understood as rough translations of signs core
                   meaning. Notation in capitals.

LOOK-AT   A hyphen is used when a single sign is glossed with
                   more than one (English) word.

KNOW+CONTEST
                   Consequtive signs in compounds are indicated by plus
                   signs.

HOUSE-2   A gloss followed by a hyphenated number identifies a
                   directional sign, i.e, that the sign is either directed to a
                   certain location or produced at a certain location. Spatial
                   locations are drawn from the Figure 3 below from
                   Rissanen (1985: 18). The numbers may be followed by
                   the letters *u* and *d*, indicating the upper ('up') and lower
                   ('down') level of articulation, respectively.
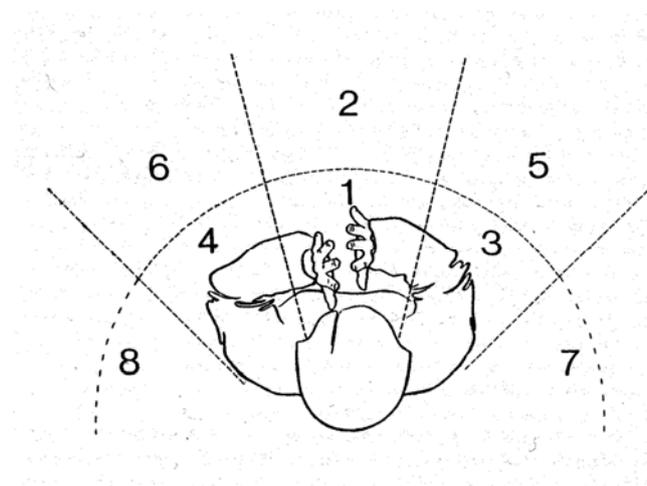
Figure 3. Locations in signing space (from Rissanen 1985: 18).

INDEX-1   A pointing made with index finger. If the number following the gloss is 1, the pointing is directed towards the signer and it indicates the first person. Any other number indicates that the pointing is directed towards the corresponding location in Figure 3.

B-INDEX-2   A pointing that is made with the flat palm up handshape. Handshape symbols, listed in Figure 4, are based on Rissanen (1985: 68–69).

CL-G-   A notation in the beginning of the gloss proper indicating that the corresponding sign contains a classifier handshape. Handshape symbols are listed in Figure 4.

SASS-(B^)-   A notation indicating that the corresponding sign is a size and shape specifying grammatical nominalizer. Handshape symbols are listed in Figure 4. The gloss is followed by a part describing sign's movement.

-"come to a stop"-3-2

       The end part of the gloss in Type 3 signs describing the signs' movement. The written sequence in between the quotation marks describes the overall manner of the movement. Numbers indicate the change in the location of the hand in the signing space (see Figure 3).

bh: Both hands; used if the sign is two-handed and has a symmetrical movement.

h1/h2:   Dominant hand or non-dominant hand, respectively. For right handed signers, the dominant hand is usually the right hand and the left hand is non-dominant. For left handed signer, the point of reference is the left hand.

Nonmanual/temporal behavior in signs

/   The symbol of pause.

'   Change in prosody, i.e., in nonmanual behavior.

Abreviations relating to the analysis

Pred   Predicate; usually a verb(al) but may also be a nominal element.

Arg   Semantic argument of the predicate.

CA   Core argument (i.e. complement).

V   Verb or verbal, depending on the theoretical orientation.

A   A unit referring to the more active participant (prototypically the agent) in the situation encoded by the two-placed predicate (cf. S).

P   A unit referring to the more passive participant in the situation encoded by the two-placed predicate (prototypically the patient; cf. O).

S   Grammatical or notional subject.

O   Grammatical or notional object.

TOP   Topic.

COM   Comment.
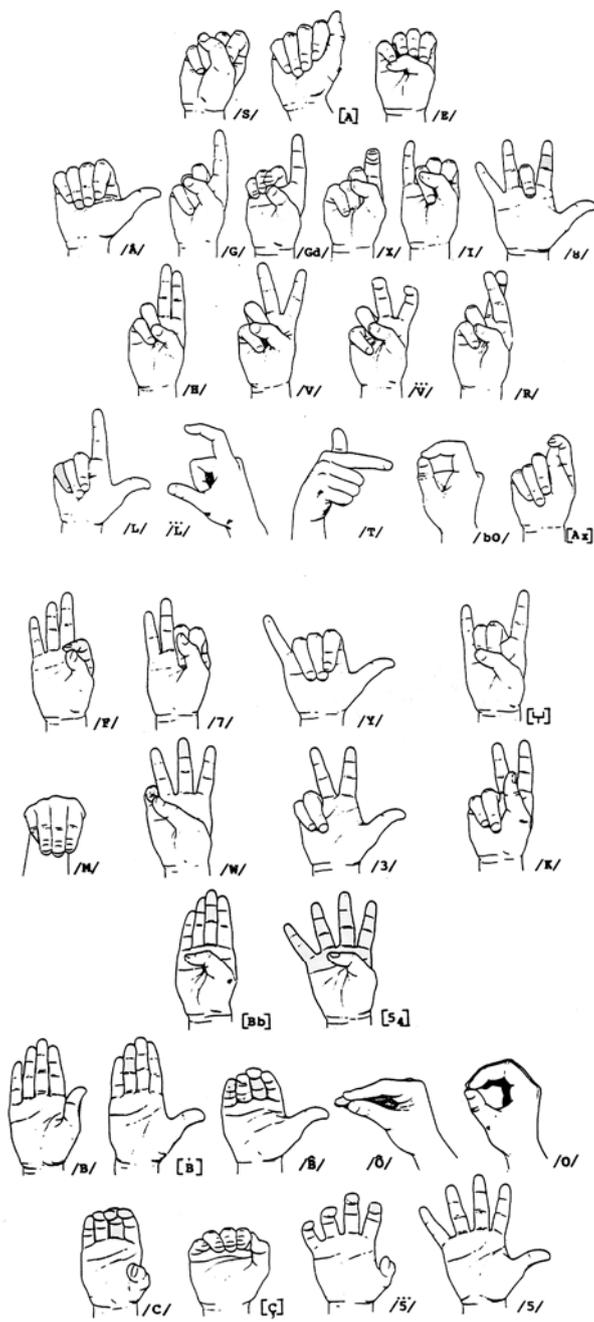
Figure 4. FinSL handshape symbols (from Rissanen 1985: 68–69).

Appendix 2.

Examples of situation describing paper card pictures used in the argument puzzle.
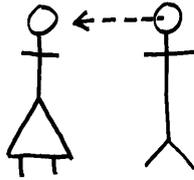
'A man is watching a woman.'
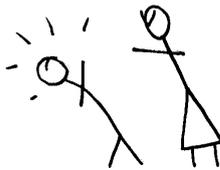
'A woman is picking on a man.'
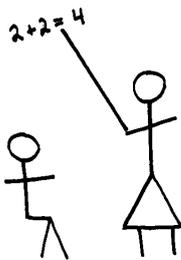
'A woman teaches a man.'
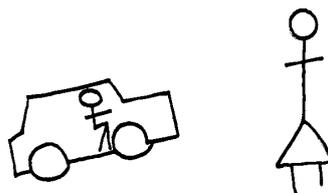
'A man picks up a woman.'

Appendix 3.

Examples of pictures used in the elicitation test/interview.

Desired situation and its reverse situation
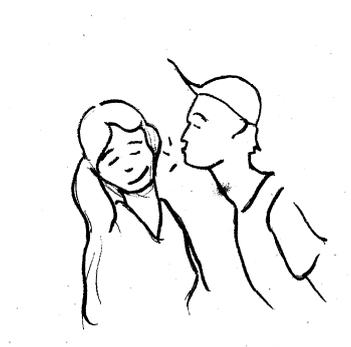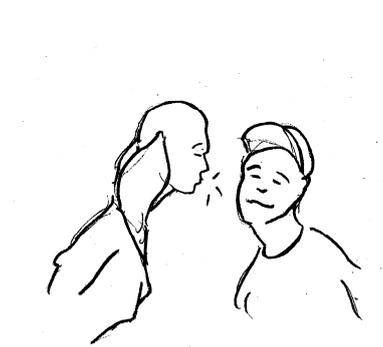
'A boy kisses a girl.'   'A girl kisses a boy.'

Desired situation and its proximate situation

' A man pushes a car.'   ' A man pushes a refrigenerator.'