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## *Word Order in Finnish: whose side is the focus on?\**

### 0 Introduction

In this paper we discuss certain facts concerning the organisation of basic elements of Finnish sentences. Like Hungarian, Finnish demonstrates relatively free word order of the major grammatical functions (S, V and O), though, also like Hungarian, most of these alternate patterns come with semantic consequences. At that point the similarity between Hungarian and Finnish stops. We will show that the semantic effects achieved by the various word orders in Finnish are based on rather different notions to Hungarian and also that the principles that determine the ordering of elements tend to be of a different type. This is of interest not only because of the comparison between the two genetically related languages, but also because what it has to tell us about possible organising principles within linguistic systems and how these may vary from one language to another.

The paper is organised into three parts. In the first we discuss some general aspects of grammatical systems and propose a restrictive typology of constraints, detailing their properties and the kind of linguistic phenomena they are responsible for. In the second part we present the facts about Finnish word order, and in the third we propose an analysis of the data using constraints of the proposed kinds.

### 1 Constraint types

If we take a linguistic system to be a ranking of the kind of alignment constraints argued for in Newson (2000, 2002, 2003, 2004), Gáspár (2005) and Newson and Gáspár (2001), we expect word order to result from the competition of elements to achieve their optimal position with respect to other elements. Essentially there are two kinds of alignment: *elemental constraints*, in which an element, the **target**, is aligned with respect to another, the **host**, either to its left or its right (1a); or *domain based constraints* in which the target

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\* We would like to express our thanks to the audience of the Budapest Phonology Circle and Linguistics Discussion Group, where we first presented a version of this paper. In the present version, we have tried to respond to comments made there and hope that in doing so we have clarified a number of issues which we previously either did not express well or, more likely, had not thought through enough. Any improvements in this paper therefore owes much to the searching questions of that audience. Any remaining inadequacies are entirely our own fault.

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is aligned with respect to a set of elements, the **domain**, either in first or last position (1b):

- (1) a target host or host target  
b target  $x^1 \dots x^n$  or  $x^1 \dots x^n$  target (where target,  $x^1 - x^n \in D$ )

Let us adopt the following conventions for naming these constraints. In constraint names, lower case letters refer to elements; targets or hosts, and upper case letters identify domains. The symbols *P*, *F*, *I* and *Q* are reserved for indicating the relationships ‘precedes’, ‘follows’, ‘is first in’ and ‘is last in’ respectively. Thus we have the following types of constraints:

- (2) *tPh* target precedes host  
*tFh* target follows host  
*tID* target is first in domain  
*tQD* target is last in domain

In the competition, some elements will get to win and they will stand in the position determined for them by some highly ranked constraint. Inevitably there will be losers too. It is interesting to ask what happens to the losers: if an element cannot occupy its preferred position, what position does it occupy? There are two possibilities. In one, the element will accept the second (or lower) best position, but one that is still determined by the constraint that it fails to satisfy completely. For example, we know that objects in English like to be immediately behind the verb and will not accept second position to an adjunct:

- (3) a I spent the money yesterday  
b \*I spent yesterday the money

Thus, in a competition for the post verbal position, the object wins. However, when there is an indirect object, things do not go the direct object’s way and it has to give up its preferred post verbal position to the indirect object:

- (4) a I gave Smith the money yesterday  
b \*I gave the money Smith yesterday

Interestingly enough, however, the direct object still wants to be as near to the right side of the verb as possible, and although it has to give up first place and accept second, it will not give up entirely and accept third place to the adjunct:

(5) \* I gave Smith yesterday the money

This is expected if the constraint determining the object's position is violable by degree. Thus, although being next to the verb is optimal, being two steps away is worse than being one step away:

(6)

|             | obFv <sup>1</sup> |
|-------------|-------------------|
| V Obj x y z |                   |
| V x Obj y z | *                 |
| V x y Obj z | **                |
| V x y z Obj | ***               |

The other possible strategy for a loser to adopt is to completely give up the competition for the position in question and to go and compete for another position determined by a lower ranking constraint. An example of this strategy might be the behaviour of the second wh-element in an English multiple wh-question. Wh-elements, as is well known, want to be first in the clause. Thus a wh-object will appear at the front of an expression despite the fact that as an object it wants to be after the verb. This shows that the wh-requirement is stronger than the object requirement:

(7)

|                     | whIS <sup>2</sup> | obFv |
|---------------------|-------------------|------|
| ☞ you saw who       | *!                |      |
| ☞ who (did) you see |                   | *    |

However, when there are more than one wh-element, they cannot all be first and thus, whatever the order, the wh-constraint will be violated. In this case it seems that the object wh-element gives up and behaves like an object instead:

<sup>1</sup> This is meant as a demonstration only and in reality there probably is no such constraint which targets objects as objects are simply arguments which are not subjects. As such they conform to general conditions to do with the placement of arguments, but no condition to do specifically with objects. The ordering of objects amongst themselves is probably based on a thematic hierarchy.

<sup>2</sup> The domain of the wh-element is the set of elements which it has scope over. This can be defined as the head of the interrogation, a predicate, and all its dependants. Thus, in *who likes whistling*, the domain is {likes, who, whistling} as *likes* is the head of the question and the other elements are dependent on this. In *I asked who likes whistling* the domain is still {likes, who, whistling} as the interrogation relates to the subordinate predicate and its dependants.

- (8) a \*what who did say  
 b \*who what did say  
 c \*what did who say  
 d \*who did what say  
 e who said what

This indicates that the wh-constraint which positions wh-elements in English is not a gradient constraint but one which is either satisfied or violated:

(9)

|                | whIS | obFv |
|----------------|------|------|
| who what saw   | *    | *!   |
| what who saw   | *    | *!   |
| ☞ who saw what | *    |      |

If the wh-constraint were a gradient constraint, then it would be better to have all wh-elements near the front of the clause and the object constraint would have no role in determining the position of the object.

But what makes one constraint a gradient constraint and another not? We want to argue that this distinction is not random, but rather one which falls out from the nature of the constraints themselves. This is the point we will argue in the following section.

### 1.1 Precedence and adjacency

Let us consider the case of direct object placement in English again, but this time including the case where the object appears on the other side of the verb:

(10)

|                                  | obFv |
|----------------------------------|------|
| ☞ give Smith the money yesterday | *    |
| give Smith yesterday the money   | **!  |
| ☞ the money give Smith yesterday | *    |

By switching sides the object manages to get closer to its preferred position, to the immediate right of the verb, than it can by staying on the right but following the indirect object. Thus if all else were equal (which it of course is not) we might expect that the direct object would on occasions ‘switch sides’ in order to satisfy the relevant constraint.

A vague feeling that this simply is not how language works and the observation that, in these cases, side switching just never happens lead Newson (2000) to suggest that side switching violates a constraint to a greater degree than if the element is further removed from its preferred position but still on

the appropriate side. It was proposed that being further from the preferred position, but on the appropriate side, earned the standard violation marks – one violation for each element that appeared between the aligned element and its preferred position. However, being on the wrong side earned another kind of violation mark, the ‘big star’ ★, and this was evaluated as being worse than any number of ‘little star’ violations:

(11)

|                                  | obFv |
|----------------------------------|------|
| ☞ give Smith the money yesterday | *    |
| give Smith yesterday the money   | **!  |
| the money give Smith yesterday   | ★!   |

However, there is a general tendency in OT to dislike the idea of differential violation of constraints by different elements. That is, although, in a set of candidate expressions, any given element might violate certain constraints to a greater or lesser degree, or a constraint may be violated by more or fewer elements, the situation in which element *x* violates a constraint more than does element *y* under the same conditions is generally frowned upon. It is argued that this situation is better handled by having two different constraints, one relevant for element *x* and the other for element *y*, with the latter being ranked higher than the former. In this way, constraint violation calculations are made in a uniform way throughout the system, and the treatment of *x* and *y* is determined by constraint ranking. The big and little star system is somewhat like differentially violated constraints, and is therefore subject to similar criticisms.

The way around this problem is to rethink alignment constraints in a way that, instead of having one constraint violated differently under different conditions, we propose two different constraints that are specifically violated by the two different conditions. Thus, instead of having constraints violated with big stars when the element is on the wrong side, and by little stars when it is not, we now propose two different types of constraint: one which is violated by the element being on the wrong side, the *precedence* constraints, and one which is violated by the element being further away from its host, an *adjacency* constraint. For the purpose of naming adjacency constraints, we reserve the symbol *A* to indicate the relationship ‘is adjacent to’.

Here is an example of how the data presented in (11) could be handled with precedence and adjacency constraints:

(12)

|                                  | obFv | obAv |
|----------------------------------|------|------|
| ☞ give Smith the money yesterday |      | *    |
| give Smith yesterday the money   |      | **!  |
| ☞ the money give Smith yesterday | *!   |      |

The higher-ranking precedence constraint ensures that the object remains following the verb and the adjacency constraint forces it not to stray too far from the verb.

Note that the adjacency constraint is a gradient constraint in that the further removed the two elements are, the worse the violation incurred is. In principle, however, an adjacency requirement could also be non-gradient. Yet, this would lead to a more complex situation, requiring an extra stipulation that the relationship be not only adjacency, but *immediate* adjacency. We will shortly see that there is a reason why adjacency constraints are gradient, and hence there is no need to introduce more complex immediate adjacency constraints to the system.

Precedence constraints, on the other hand, are absolute rather than gradient: you either precede or you do not. If we forced precedence constraints to be gradient, this would not only be more complex, introducing a notion of immediate precedence, but it would also be tantamount to building into them an adjacency requirement. As the adjacency requirement is already present in the form of the adjacency constraint, this would not only be pointless, but also detrimental to the system, as it would rob the adjacency constraints of their effects under certain rankings.

Obviously, the above system replicates the effects of the big/little star system. However, without further stipulation the precedence/adjacency system predicts phenomena which were assumed not to be possible and indeed were part of the motivation for the big and little star system in the first place: side switching. This is due to the fact that with two constraints ranking becomes an issue. If we rank adjacency above precedence, it becomes better for the target to switch sides in order to remain adjacent to the host, rather than to remain on the dominant side but be further away:

(13)

|                                  | obAv | obFv |
|----------------------------------|------|------|
| ☞ give Smith the money yesterday | *!   |      |
| give Smith yesterday the money   | **!  |      |
| ☞ the money give Smith yesterday |      | *    |

This is not the way English works. But it is an empirical issue whether any language works in this way. If there is evidence that side switching does take place, then this would support the precedence/adjacency approach over the

big/little star system. We will see that the behaviour of the Finnish focus provides the crucial data.

## 1.2 Domains and adjacency

The system we have so far built has taken the elemental alignment constraints, involving the positioning of a target with respect to a host, and identified three basic subtypes:  $xPy$ ,  $xFy$  and  $xAy$ . This raises a question concerning the domain-based constraints, namely whether anything like an adjacency constraint could exist with respect to domains? Empirical evidence in favour of such constraints will be discussed later in this paper, but for now let us consider the technical aspects of such a possibility.

Let us first broach the issue of what it would actually mean to be adjacent to a domain. The intuitive notion that we want to build on views domain adjacency as similar to element adjacency, but with the domain as a whole, rather than its individual members, functioning as the host. Consequently, being adjacent to a domain involves being adjacent to its edges. This would appear to somewhat resemble the first and last constraints, but with two important differences. First, domain adjacency, like elemental adjacency, is non-directional. With elemental alignment, the direction of the alignment, precedence or succession, is a matter for the precedence constraints to determine. Similarly, with domain adjacency the ordering of the target with respect to the domain is a matter for the first and last constraints to decide, and adjacency merely places the target at either edge of the domain.

Secondly, first and last constraints are naturally gradient in as much as for the first constraint the most optimal position is the domain-initial position, while the second best position is the position behind it, and so on. Domain adjacency, however, is not naturally gradual: a target is either adjacent to a domain (i.e. at its edges) or it is not. One might feel that this is not necessarily the case as a target can be placed nearer to or further away from a domain edge. Yet, this overlooks the fact that domain adjacency is not directional, and therefore not oriented towards one edge or another. If we view domain adjacency as gradual, we end up with a rather useless constraint that is violated to the same degree no matter where in the domain a target is positioned. Consider the situation in which there are  $n$  elements in a domain, including the target. Suppose that the target is placed at the leading edge of the domain, in front of all other elements of the domain. In this case, although it is adjacent to the leading edge, it is  $n-1$  elements away from the following edge, incurring  $n-1$  violations of the adjacency constraint. Suppose we then move the target to the following edge. Now, the target is  $n-1$  elements away from the leading edge, again incurring the same number of violations. Finally, suppose that we move the target  $m$  ( $m < n$ ) number of places back from the leading edge. It now has  $m$

number of violations of the adjacency constraint with respect to the leading edge, but  $n-l-m$  violations with respect to the following edge. The total number of violations is therefore  $n-l-m+m$ , i.e.  $n-l$ , the exact same number of violations as in the previous cases. Clearly, such a constraint would never play a role in determining the optimality of any candidate as it treats all candidates equivalently, and therefore we must reject the view of domain adjacency in which the relevant constraints follow a gradient violation pattern.

The conclusion that we therefore reach is that as a consequence of being non-oriented with respect to particular edges, domain adjacency constraints must be viewed as non-gradient and, as first and last constraints are so oriented, they may be gradient. Obviously, it would still be possible to stipulate that some first and last constraints are non-gradient, violated if the target is not first (or last). This situation, however, would be comparable to making precedence constraints non-gradient by building into them some notion of adjacency, complicating the system pointlessly. If first and last constraints are non-gradient, we then automatically build into them some notion of domain adjacency, which is already present in terms of the specific domain adjacency constraints. It follows that while domain adjacency constraints are non-gradient, the first and last constraints are necessarily gradient.

A more general conclusion we can reach is that any alignment constraint that is evaluated with respect to a single point, either a specific host or a particular edge of a domain, will be gradient, whereas those which are evaluated with respect to stretches of an expression, either a domain or the stretch of the expression preceding or following a host, will not.

The following table summarises the discussion of this section showing the six constraint types along with their conditions of violation:

|                      |  |
|----------------------|--|
| <b>(14) Gradient</b> |  |
| <b>constraints</b>   | <b>conditions of violation</b>   |
| $xAh$                | violated by every $z$ between $x$ and $h$                                  |
| $x/D$                | violated by every $z \in D$ such that $z$ precedes $x$                     |
| $x\Omega D$          | violated by every $z \in D$ such that $z$ follows $x$                      |
| <b>Non-gradient</b>  |  |
| <b>constraints</b>   |  |
| $xPh$                | violated if $x$ follows $h$  |
| $xFh$                | violated if $x$ precedes $h$   |
| $xAD$                | violated if $x$ is preceded by $a$ and followed by $b$ , $a$ and $b \in D$ |



## 2 Finnish data

Finnish, as an agglutinative language, like Hungarian, is comparatively rich in its case and agreement morphology, allowing it to employ what could and has been termed a relatively free word order. Indeed, all permutations of the major elements of the sentence produce grammatical expressions. However, as will be demonstrated in this section, the rules governing the ordering of words in the language in reality play a major and systematic role in identifying both the discourse prominence and the functions of various elements, as well as (to a lesser degree) identifying their grammatical relations.

### 2.1 Topic, Focus and Contrast

Before continuing to investigate the details of Finnish word order, it is important that we give some thought to concepts that play a major role in determining this: topic, focus and contrast. It is especially crucial that we establish ways of manipulating these concepts so that a clear interpretation of the data will be possible.

The notions of topic and focus are often expressed as opposites. They are ‘given’ and ‘new’ elements respectively. The topic in an obvious way has to be present in the current discourse, either by already having been mentioned or by having been ‘conjured up’ by elements of the discourse. The focus, on the other hand, is often at the heart of information being transmitted from the speaker to the hearer, and contains information that is assumed not to already be encompassed by the hearer. These two discourse functions therefore do not combine without contradiction: one cannot speak of a topic focus, for example.

The notion of contrast, however, readily combines with both topics and foci. Contrast always involves a set of elements that are contrasted. So, for example, a situation in which there is a contrastive topic will involve a set of topics already established for example in a preceding utterance, and which are then rotated as the topics of a sequence of statements in which something different is predicated of each one. The following short discourse demonstrates typical contrastive topics:

- (15) John introduced Mary to his three friends. Bill, Mary immediately liked.  
Fred made little impression, but Steve, she sensed was openly hostile

The first sentence sets the scene and introduces a number of elements that can act as the topics for subsequent sentences: *John*, *Mary* and John’s three friends. In this case, it is the three friends which are the actual topics of the

following three clauses, in which they are contrasted with respect to some predication, i.e. Mary's evaluation of them.

Contrastive focus also involves the formation of a set within which the contrast is carried out. In this case, however, a newly introduced element is contrasted with something else, which may already be part of the discourse. A typical case of contrastive focus is in corrective situations. Suppose speaker A believes P to be predicated of x, but speaker B knows that it is y that P is predicated of, not x. If B corrects A's belief by asserting P(y), B constructs a set consisting of x and y and contrasts these with respect to P. To A, y is a new element introduced by B and so has the status of a focus. The following short dialogue exemplifies this kind of contrastive focus:

- (16) A Bill left  
B No, Steve left

Of course, it is possible to have topic and focus interpretations without any contrastive set being involved. In these cases, we get non-contrastive topic and focus readings. A non-contrastive topic is simply a discourse old element that is predicated of in such a way that no comparison is made between it and anything else. So if we introduce an element into a conversation and then continue to predicate of this element it is a topic and there will be no contrastive interpretation associated with it. In the following, the pronoun subject of the second sentence is a non-contrastive topic:

- (17) Steve left the party. He didn't like the hostess.

Finally, a non-contrastive focus is simply a new item entered into a discourse without including it in a set. For example, a simple answer to a question might qualify as a non-contrastive focus under normal discourse conditions of questioning and answering. Presumably, the questioner lacks a certain piece of information and an answer to the question will provide this information. Hence the answer is new information, and so focus, although it is not contrasted with any other element:

- (18) A who left?  
B Steve did

While nothing that we have said in this section is original, the importance of the above discussion has been to identify a number of discourse conditions under which the relevant concepts can be elicited. We will be using these contexts to investigate the effects of the relevant discourse functions on

Finnish word order. The following table sets out the contexts we will be using in a convenient way:

|      |                              |   |
|------|------------------------------|---|
| (19) | <i>discourse function</i>    | <i>eliciting context</i>                        |
|      | <b>non-contrastive topic</b> | sentence which introduces a single individual   |
|      | <b>non-contrastive focus</b> | question concerning a single individual         |
|      | <b>contrastive topic</b>     | sentence which introduces a set of individuals  |
|      | <b>contrastive focus</b>     | sentence containing information to be corrected |

## 2.2 Basic word order in Finnish

The basic word order in Finnish is generally understood to be SVO. For example, the following sentence might be claimed to express a neutral meaning:

- (20) Mikko juo teetä  
Mikko drinks tea  
‘Mike drinks tea’

However, the fact that a similar sentence in Hungarian with the same ‘neutral’ interpretation would also be expressed with the same word order has not unequivocally led to the conclusion that Hungarian is also basically SVO:

- (21) Misi iszik teát  
Misi drinks tea

É. Kiss (1994), for instance, has claimed that Hungarian is a topic oriented language in which grammatical function has very little role in determining word order. Thus in a sentence such as (21), the subject should be seen as topicalised<sup>3</sup>. If the same is true of the Finnish sentence in (20), then we might also be led to the conclusion that, contrary to popular belief, grammatical function is not a major contributor in determining basic word order.

That Finnish is not like Hungarian in this sense can be demonstrated by manipulating the discourse conditions of the sentence. We may, for example, topicalise the object, which in Hungarian would have the effect of bringing the

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<sup>3</sup> Gáspár (2005) has claimed that topics are universally present and hence there is no such thing as a ‘neutral’ interpretation, by which what is meant is an interpretation in which discourse functions have no role. The apparent neutral interpretation of the Hungarian SVO word order might therefore be seen as a reflection of the fact that there is a tendency for subjects and topics to coincide.

object to the front of the clause. But in Finnish a simple topicalised object remains in its position behind the verb:

- (22) Lisa walks past the teahouse  
 a Mikko näkee Liisan  
 Mikko sees Liisa  
 'Mike sees Lisa'  
 b \* other word orders

Although the other word orders indicated in (22b) may not be ungrammatical in other contexts, they do not express the intended meaning, i.e. a topicalised object and a standard subject. The grammaticality of (22a) and the inappropriateness of (22b), then, appears to indicate that Finnish does indeed rely on notions of subjecthood and objecthood, as something other than the notion of topic must be responsible for the ordering of the elements.<sup>4</sup>

The case is similar, although slightly more complicated, when it comes to (non-contrastive) focus interpretations. As illustrated by (23) and (24), focusing on an element does not in itself result in word orders that deviate from the standard SVO pattern. The focused element is marked here with a stress mark indicating its slightly stressed pronunciation.

- (23) Q Kuka näki Liisan?  
 'Who saw Lisa?'  
 A<sub>1</sub> 'Mikko näki Liisan  
 'Mike saw Lisa'  
 A<sub>2</sub> \* other possible orders
- (24) Q Mitä Mikko näki?  
 what Mikko saw  
 'What did Mike see?'  
 A<sub>1</sub> Mikko näki 'Liisan  
 'Mike saw Lisa'  
 A<sub>2</sub> \* other possible orders

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<sup>4</sup> Although agreeing with claims made in Vallduví & Vilkuna (1998) according to whom all OSV word orders in Finnish have contrastive objects, this is at odds with Kaiser's (2000) findings, as in her data about 35% of OSV structures were seen to express a non-contrastive topic object. As this does not accord with our intuition, we can only assume that Kaiser's result is either an effect of dialectal differences (although this seems unlikely), or the type of data used by her, namely a corpus of written literary sources.

- (25) Q Kuka näki mitä?  
‘Who saw what?’  
A<sub>1</sub> 'Mikko näki 'Liisan  
‘Mike saw Lisa’  
A<sub>2</sub> \* other possible orders

Once again, although other possible word orders might be grammatical given other contexts, they are ungrammatical here as they do not express the intended meanings.

Matters appear to become somewhat more complicated when adverbials are introduced to the sentence. With no focus laid on any of the elements, SVAO can be argued to be the least marked word order:

- (26) Liisa tervehtii iloisesti Mikkoa  
Liisa greets happily Mikko  
‘Lisa greets Mike happily’

With one crucial exception, it is also possible to focus on each of the elements individually without altering the word order. This is achieved by slightly stressing the word in question, again suggesting that, just like topic, focus in itself does not alter the underlying word order. The relevant discourse contexts for sentences in (27) could for example be questions asking to identify the person *Lisa* greeted (27a), the way the greeting was done (27b), and the person greeting *Mike* (27c):

- (27) a Liisa tervehtii iloisesti 'Mikkoa  
b \* Liisa tervehtii 'iloisesti Mikkoa  
b' Liisa tervehtii Mikkoa 'iloisesti  
c 'Liisa tervehtii iloisesti Mikkoa

The reason behind (27b)'s ungrammaticality will be discussed in a moment. Before that, however, we must also note that SVOA is a possible word order in Finnish, with focus possible on any of the elements, or no element at all. Again the focus is indicated by the stress mark:

- (28) a Liisa tervehtii 'Mikkoa iloisesti  
b Liisa tervehtii Mikkoa 'iloisesti  
c 'Liisa tervehtii Mikkoa iloisesti  
d Liisa tervehtii Mikkoa iloisesti

By thus inverting the order of the object and the adverbial, we consequently also slightly alter the interpretation of the sentence. The difference between (27a) and (28a) is in the intended discourse prominence of the adverbial, with the element in (27a) being clearly interpreted as providing important additional information, while in (28a) its contribution to the information provided by the sentence is much smaller, indeed almost insignificant. In order to focus on the adverbial, it cannot precede the object as shown by the ungrammatical (27b), but has to follow it as in (28b). In sentences (28c-d) both the object and the adverbial are interpreted as being prominent, with more prominence given to the adverbial than the object. Finally, the two word orders with no prosodic indication of focus, (26) and (28d), differ in terms of what is regarded as the most prominent non-subject element: in (26), which we have mentioned to be the least marked of the two word orders, the object is given more prominence than the adverbial, while in (28d) it is the adverbial that is interpreted as being the most important piece of new information.

These observations, although they may initially seem puzzling, are in fact not that difficult to account for. It is a fairly common view of the Finnish word order that the most prominent post-verbal element is placed at the end of the utterance (see for example Vainio et al. 2003), with the interpreted prominence rising towards it. Consequently, in a linear string of post-verbal elements such as is presented in (29), the prominence hierarchy can be shown to correspond to the one given in (30).

(29)  $X_1 X_2 \dots X_{n-1} X_n$

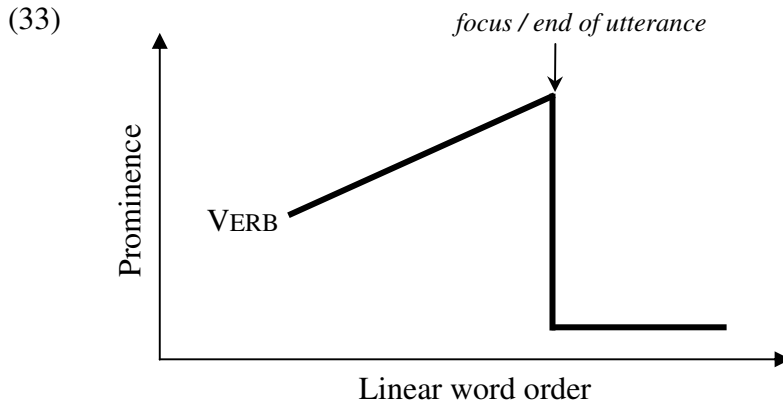
(30)  $X_n > X_{n-1} > \dots > X_2 > X_1$

This, however, appears to hold true only of instances where no special focus is laid on any of the post-verbal elements (our examples (26), (27c), and (28c-d)). In case one of those elements is given a focus interpretation, as is true of our examples (27a-b) and (28a-b), whatever follows the focused element appears to be interpreted as non-prominent information. This is illustrated again in sentence (31), with the prominence hierarchy of the sentence laid out in (32):

(31) Mikko tilaa nopeasti teetä 'Liisalle tarjoilijalta  
Mikko orders quickly tea for-Liisa from-waiter  
'Mike quickly orders tea for Lisa from the waiter'

(32) Liisalle > teetä > nopeasti  
Non-prominent (or very low prominence): tarjoilijalta

Consequently, instead of prominence peaking at the end of the utterance, the data in fact suggests that the peak is situated either where a post-verbal focus element lies *or*, in case no such element is present, at the end of the utterance. This is schematically illustrated by the diagram in (33).



In order to distinguish between the domain that starts with the verb and ends with the peak of prominence on the one hand, and the domain that follows the prominence peak on the other, we will from here on label them the “centre domain” and the “margin”, respectively. Note that the ungrammaticality of sentence (27b) suggests that arguments cannot be marginalized.

The distinction we have introduced here is not unheard of in the literature. Haegeman (2002, 2003), for one, distinguishes between what she calls *central adverbial clauses* and *peripheral adverbial clauses*, showing that these are distinct in English in as much as the former do not allow topicalisation, whereas the latter do:

- (34) a \* if these exams you don't pass, you can't get a degree  
 b if these problems we cannot solve, there are many others we can tackle

Haegeman differentiates between the two types of modifying clause in that the central ones modify the event or state expressed by the main clause, whereas peripheral ones “serve to provide a discourse frame against which the proposition of the host clause is evaluated” (Haegeman 2003 p.5). In many ways this is comparable to the restrictive/non-restrictive distinction. Huddleston (1984) for example, points out that this distinction has to do with the *salience* of the information provided by the modifier:

- (35) a we were surprised to see she was wearing shoes which were red  
b we were surprised to see she was wearing shoes, which were red

With the restrictive relative in (35a), the surprising thing is the colour of the shoes and hence the relative clause introduces semantically salient information. The non-restrictive relative in (35b) however does not work in this way. What is surprising there is that shoes were being worn and this has nothing to do with their colour. The relative clause here simply adds extra non-salient information

This is also essentially the distinction we make between central and marginal elements. For example, consider adverbial placement discussed above:

- (36) a Liisa tervehtii iloisesti Mikkoa  
Liisa greets happily Mikko  
'Lisa greets Mike happily'  
b Liisa tervehtii Mikkoa iloisesti

The difference between these sentences concerns the role played by the adverb. In the first case its contribution is one that modifies the event in a way that makes it an event involving 'happy greeting', and the fact that the greeting was done 'happily' is thus a salient part of the proposition. (36b), on the other hand, is the description of a 'greeting' event. That this greeting was done happily is proffered as extra information about it, but this is not a salient part of the proposition.

This distinction seems to be restricted to modifiers, and there appears to be nothing like a marginal argument:

- (37) a we were surprised to see that he was eating an apple  
b we were surprised to see that he was eating

Here, what is communicated as being surprising is that 'he is eating an apple' not that 'he is eating'. The latter interpretation is impossible while the object is part of the clause, and can hence only be achieved if the object is unmentioned, as in (37b).

### 2.3 Contrast

We have so far looked at neutral Finnish sentences, as well as those involving topics and foci, and concluded that neither topicalisation nor focalisation is capable of altering the basic underlying SVO word order found in the lan-



guage. However, when the notion of contrast is added to the mix, the word order becomes more dynamic.

In Finnish, a contrastive element, topic or focus, tends to come at the beginning of the clause. To illustrate this (38) is a sentence involving a subject, and (39) an object, with a contrastive topic reading. Bear in mind that once again, although all permutations are possible, the ones marked as ungrammatical here do not fit the contexts provided.

- (38) We are talking about a group of people and what they study.  
 a ... ja Risto opiskelee astrofysiikkaa  
     and Risto studies astrophysics  
     ‘and as for Christopher, he studies astrophysics’  
 b \* other orders
- (39) We are talking about the various physics departments and what kind of people study in them.  
 a ... ja astrofysiikkaa nörtit opiskelee  
     and astrophysics nerds study  
     ‘and as for astrophysics, nerds study it’  
 b \* other orders

Meanwhile, the responses in (40) and (41) illustrate contrastive foci:

- (40) A Matti opiskelee astrofysiikkaa  
 B<sub>1</sub> Ei, 'Risto opiskelee astrofysiikkaa!  
     no Risto studies astrophysics  
     ‘No, it is Christopher who studies astrophysics (not Matthew)’  
 B<sub>2</sub> \* other orders<sup>5</sup>

---

<sup>5</sup> The sentence *Ei, 'Risto astrofysiikkaa opiskelee* would, in fact, be both a grammatical and a suitable response to the original query. However, there is a difference in meaning between it and B<sub>1</sub> in that in this sentence the object is given more prominence, and hence is a more marked word order than the one presented in B<sub>1</sub>. This is possibly the result of an ordering of the verb, rather than the object, a topic we will not cover in this paper.

- (41) A Risto opiskelee kvanttimekaniikkaa  
 B<sub>1</sub> Ei, 'astrofysiikkaa Risto opiskelee!  
 no astrophysics Risto studies  
 'No, it is astrophysics that Christopher studies (not quantum me-  
 chanics)'  
 B<sub>2</sub> \* other orders<sup>6</sup>

While it is no surprise to find the subject in a preverbal position in these cases, as that is the canonical position of the subject, the fact that the object is pulled to the front of the clause by a contrastive reading indicates that this is the contrastive position in Finnish<sup>7</sup>.

The contrastive position seems to be defined with respect to the beginning of the clause rather than as a particular pre-verbal position, unlike the case with the subject. We can see this from the fact that a contrastive object precedes the subject and could not follow it:

- (42) \* Ei, Risto 'astrofysiikkaa opiskelee!

Of course, a contrastive subject can at the same time satisfy its subject and contrastive requirements in one pre-verbal position, providing there are no other preverbal elements.

In the case of two contrastive elements, one focalised and another topicalised, it is the topicalised element that has to come first, immediately followed by the focalised one:

---

<sup>6</sup> *Ei, Risto opiskelee 'astrofysiikkaa* would again be a possible response to the sentence, involving what appears to be an in-situ contrastive focus. This is possibly the result of the repetition of the word order employed in the original utterance (A). We acknowledge the need for a further study of in-situ contrasts, which in this paper have been largely ignored.

<sup>7</sup> Kaiser (2000) comes to the same conclusion, providing an X-bar analysis in which the Finnish clause has a 'Contrast Phrase' as its top functional projection; the contrastive element being moved to the specifier of which in much the same way as wh-elements move to spec CP and topics and foci move to spec TopP and FocP respectively under similar assumptions. However, apart from the fact that contrasted elements sit at the front of the clause, i.e. the very fact that needs accounting for, there is no other evidence to favour the structural architecture that Kaiser proposes. The head position of the Contrast Phrase, it seems, is never filled either by an overt contrast morpheme or by head movement. The proposal then only serves to exacerbate an already overburdened mechanism without much in the way of positive gain.

- (43) We are talking about a group of people and what they did on Wednesday evening. Anna usually meets Mary, but not this time around.
- a ... Anna 'Petrin tapasi keskiviikkona  
Anna Petri-acc. met Wednesday-on  
'As for Anna, it was a Peter she met on Wednesday (and not Mary)'
- b \* ... 'Petrin Anna tapasi keskiviikkona.
- (44) We are talking about a group of people and what they did on Wednesday evening. Mary usually comes to meet Anna, but not this time around.
- a ... Annan. 'Petri tapasi keskiviikkona  
Anna-acc. Petri met Wednesday-on  
'As for Anna, it was Peter who met her on Wednesday (and not Mary)'
- b \* 'Petri Annan tapasi keskiviikkona.

In these examples, as *Anna* is introduced as one of the set of people being discussed, this element has the status of a contrastive topic. *Peter*, on the other hand, is introduced as a surprise element, contrasting with the expected individual (*Mary*) and hence has a contrastive focus reading.

Finally, with two contrastive topics, the ordering between the two topics does not seem to be restricted in any way:

- (45) We are talking about a group of people and a group of fruits that are on the table.
- a ... Jessika omenan haluaa  
Jessica the apple wants  
'As for Jessica, she wants the apple'
- b ... omenan Jessika haluaa  
the apple Jessica wants  
'As for the apple, Jessica wants it'

More interesting, as well as more theoretically challenging, is the behaviour of focalised subjects when interacting with contrastive elements in the same clause. We have so far illustrated that focus does not in itself alter the canonical SVO word order, and that contrastive elements are rather straightforwardly pulled to the front of the clause. However, with both a contrastive object element *and* a focused subject in the same clause, as in examples (46) and (47), the subject is suddenly sent to the end of the centre domain. (46) in-

volves a contrastive topic object, while (47) illustrates the situation with a contrastive focus object:

- (46) We are at a party. Someone asks about who bought the drinks. The responder knows that various people bought different drinks, and that John bought all the beer.
- Q Kuka osti juomat?  
who bought drinks-acc.  
'Who bought the drinks?'
- A Oluet osti Jukka  
beers-acc. bought Jukka  
'As for the beer, John bought it'
- (47) There is a paper bag in the corner with bottles in it. The questioner incorrectly assumes that the bottles contain wine, and wants to ask who bought them.
- Q Kuka osti viiniä?  
'Who bought wine?'
- A 'Olutta osti Jukka  
'The beer was bought by John' (and it is not wine)
- A' \* 'Olutta Jukka osti

That the focused subject indeed moves to the end of the centre domain, and not for example to an immediately post-verbal position or to a clause-final one is suggested by (48), which is a modified version of the situation presented in (47):

- (48) There is a paper bag in the corner with bottles in it. The questioner correctly assumes that they were bought at the supermarket and that they were bought today, but incorrectly supposes that they contain wine. Supermarket is deemed unimportant information both in the reply as well as the question because it is the place where the shopping is always done.
- Q Kuka osti tänään 'viiniä supermarketista?  
who bought today wine supermarket-from  
'Who bought wine today from the supermarket?'
- A 'Olutta osti tänään Jukka supermarketista  
beer bought today Jukka supermarket-from  
'The beer was bought today by John (at the supermarket)' (and it is not wine)

Note also that it is only a focused subject that is moved to the end of the centre domain when contrastive elements are present. Example (39), reprinted partly here as (49), has already shown that plain subjects are not moved from their canonical pre-verbal subject position in the presence of a fronted contrastive element:

- (49) We are talking about the various physics departments and what kind of people study in them.
- a ... ja astrofysiikkaa nörtit opiskelee  
'and as for astrophysics, nerds study it'
  - b \* ... ja astrofysiikkaa opiskelee nörtit

Topicalised subjects are not moved, either:

- (50) Liisa kävelee teetalon ohi. Liisa tervehtii Petriä.  
'Lisa walks past a teahouse. Lisa greets Peter.'
- a Ei, 'Mikkoa Liisa tervehtii  
no Mikko-part. Liisa greets  
'No, as for Lisa, it is Mike she greets'
  - b \* Ei, 'Mikkoa tervehtii Liisa

It appears, then, that while topicalisation and focalisation in themselves are not individually able to change the canonical SVO word order, and the contrastive elements are always fronted, the co-appearance of contrast and a focused subject makes the latter switch sides from a pre-verbal position to the end of the centre domain. The following table summarises the word order observations we have made in this section:

|      |                      |  |
|------|----------------------|--|
| (51) | <i>element</i>       | <i>position</i>  |
|      | <b>subject</b>       | pre-verbal   |
|      | <b>object</b>        | post-verbal  |
|      | <b>topic subject</b> | pre-verbal   |
|      | <b>topic object</b>  | post-verbal  |
|      | <b>focus subject</b> | pre-verbal if no contrastive element present<br>post-verbal if contrastive element present |
|      | <b>focus object</b>  | post-verbal  |
|      | <b>all contrasts</b> | pre-verbal   |

### 3 Analysis

To analyse the data presented in the previous section, we will develop a set of ranked alignment constraints of the types discussed in the first section. These will align elements bearing certain features to given hosts or domains. As both the features and the domains are given in the inputs, some preliminary discussion of inputs will be necessary.

#### 3.1 Input

We will be making fairly standard assumptions about inputs, i.e. that they contain all the information relevant for the semantic interpretation of the expression. Also, following standard Alignment Syntax practise we will assume that the input is directly interpreted by the semantic component of the language faculty.

##### 3.1.1 Features

Besides lexical elements themselves and the semantic material that they introduce, we assume that other meaningful aspects of the input are included as features assigned input elements. Feature assignment is free, modulo a small number of redundancy rules, such as discussed below, though it of course has semantic consequences which may render an input uninterpretable. For the present study, the important features are:

- (52) Subject (S)
- Contrast (K)
- Prominence (P)
- Aboutness (A)

The subject feature distinguishes its assignee from all other arguments. It is the only grammatical function feature we assume. Other arguments can be distinguished in terms of the  $\theta$ -roles they bear. While it is unclear what semantic content it carries, it appears to be an essential part of linguistic systems. The contrast feature confers on its assignee a contrastive interpretation, which as discussed above involves the construction of a set from which to interpret the contrast. Prominence is a feature associated with focus interpretation, but not equivalent to it. Thus, while foci are prominent, not all prominent elements are foci. Presumably a true focus interpretation also includes some notion of newness, though whether this is included as a feature is not a question we investigate in the present paper. Aboutness is the feature of the topic and the two notions can be equated.

We assume a redundancy rule that ensures that all contrastive elements are prominent:

(53)  $K \rightarrow P$

This will be important for accounting for the competition between contrastive elements and foci for the leading edge of the relevant domain. It is this assumption that forces us to separate the notion of prominence from focality as a contrastive topic will also be prominent, by (53), though we would not want to say that such elements are also foci.

The combination of the three discourse oriented features produce the following input elements indicated with their intended interpretations:

| (54) | <b>features</b> | <b>interpretation</b> <sup>8</sup> |
|------|-----------------|------------------------------------|
|      | ∅               | - neutral                          |
|      | P               | - focus                            |
|      | A               | - topic                            |
|      | KP              | - contrastive focus                |
|      | KPA             | - contrastive topic                |

In addition, the subject feature may be added to any of these elements.

### 3.1.2 Centre and Margins

Domains are defined as sets of input elements which are related in a particular way. For example, a straightforward domain consists of a predicate and all its dependents. We call this the **predicate domain**. A dependent of a predicate is any input element that bears a feature which is interpreted with respect to that predicate. Thus, arguments and modifiers are all dependents of a predicate, and therefore part of the predicate domain. In the case of subordination, the dependents of a dependent are also included in a domain.

In Finnish, as was illustrated in the diagram in (28), there appears to be a sub-domain of a predicate domain which includes all those dependents of the predicate which carry ‘important’ information. We call this domain the centre domain. Elements in the predicate domain which are not in the centre are said to be in the margin.

As it affects the interpretation, the status of a modifier as central or marginal must be marked in the input. The central domain can therefore be

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<sup>8</sup> The system allows the combination of features PA, a ‘prominent topic’. Whether or not there exists such an element is unclear. However, if there is such an element, our prediction is that it would behave like a focus.

defined as the set of elements dependent on a predicate not marked as marginal. We assume, therefore, a feature which marks marginal elements:

(55) Marginal (M)

### 3.2 Grammatical Functions

As argued above, Finnish has a basic SVO word order. From this we can deduce that the language is predicate initial, with arguments tending to follow the predicate, but with the subject in a special position before the verb. Thus we have the following constraints:

(56)  $aFp > aPp$  (arguments Follow their predicate)  
 $sPp > sFp$  (subject Precedes its predicate)  
 $sPp > aFp$

The first ranking ensure that in general arguments follow their predicates while the second and third ensure that subject behave differently. First, that subject precede their predicate is captured by ranking  $sPp$  above  $sFp$  and second that the higher ranking subject constraint can overcome the dominant argument alignment is achieved by ranking the former above the latter.

The following table shows how this works to select the SVO word order:

(57)

|           | $sPp$ | $aFp$ | $aPp$ | $sFp$ |
|-----------|-------|-------|-------|-------|
| $X_S V X$ |       | *     | *     | *     |
| $X_S X V$ |       | **!   |       | *     |
| $V X_S X$ | *!    |       | **    |       |
| $V X X_S$ | *!    |       | **    |       |
| $X V X_S$ | *!    | *     | *     |       |
| $X X_S V$ |       | **!   |       | *     |

In this table, and those that follow, X represents an argument and the subscripts represent the features it carries. Thus  $X_S$  is an argument bearing the subject feature. An argument without any features is a simple object.

(58) a Faith(S) >  $sPp$  >  $sFp$  (Finnish ranking)  
 b  $sPp, sFp$  > Faith(S) (Hungarian ranking)



(59)

|         | Faith(S) | sPp | sFp |
|---------|----------|-----|-----|
| $X_S V$ |          |     | *   |
| $V X_S$ |          | *!  |     |
| $X V$   | *!       |     |     |
| $V X$   | *!       |     |     |

(60)

|         | sPp | sFp | Faith(S) |
|---------|-----|-----|----------|
| $X_S V$ |     | *!  |          |
| $V X_S$ | *!  |     |          |
| $X V$   |     |     | *        |
| $V X$   |     |     | *        |

The tables show the difference between the Finnish and Hungarian rankings. In Finnish the subject feature remains as a consequence of the high ranking of the faithfulness constraint. Therefore the subject alignments are effective and the subject occupies a preverbal position, unless some higher ranked constraint determines otherwise. In Hungarian, however, the subject feature is underparsed and so plays no role in determining the distribution of this argument, which is therefore entirely at the mercy of other constraints.

The Finnish object, however, prefers a position towards the back of the predicate domain and is only followed by a focus or by marginal material (see examples (28)-(33)). While we will return to the distribution of the focus later, let us first consider the order of the object with respect to central and marginal adverbs. It is clear that both objects and adverbs want to follow the verb, but their order with respect to each other is dependant on the status of the adverb. If objects not only have to follow the verb, but they should also be at the edge of some domain, both conditions will place the object as near to the final edge of this domain as possible. As marginal adverbs can follow the object (see for example (28a) and the related discussion), we conclude that it is the centre domain that the object is aligned to. Thus we have the following:

(61) aAC (an argument is adjacent to the edge of the central domain)

Marginal elements, however, always follow central elements. This might be the result of a fairly low ranked requirement that central elements should be adjacent to the verb:

(62) cAp (a non-marginal element is adjacent to the predicate)<sup>9</sup>

Consider, then, what happens when there is an object (X), a central adverb (M = modifier) and a marginal adverb (M<sub>M</sub>):

(63)

|                        | aFp | aAC | cAp |
|------------------------|-----|-----|-----|
| V X M M <sub>M</sub>   |     | *!  | *   |
| V X M <sub>M</sub> M   |     | *!  | **  |
| ☞ V M X M <sub>M</sub> |     |     | *   |
| V M M <sub>M</sub> X   |     | *!  | **  |
| V M <sub>M</sub> X M   |     | *!  | *** |
| V M <sub>M</sub> M X   |     | *!  | *** |

In table (63), the subject is omitted to simplify the table and only verb initial candidates are shown, other candidates violating constraints that place arguments and modifiers behind the verb. As we see, the result is that the central modifier precedes the object and the marginal modifier follows.

Of course, this differs from the English pattern where it is important for objects to be adjacent to the verb, as shown at the beginning of this paper. For English, then, the ranking of the aAp (argument is adjacent to the predicate) is much higher than in Finnish. However, as we do not find side switching for English objects, the aFp constraint is still fairly highly ranked:

(64) aFp > aAp > aAC (English ranking)

### 3.3 Topic and Focus

As those Finnish arguments which are simply marked for topicality or focality are typically found *in situ* (see examples (22)-(25)), elements which bear the features P and A without the contrastive feature will tend to remain in their positions determined by their grammatical function. This might indicate that constraints that position topics and foci are lowly ranked. However, we will see in the next section that this is not necessarily the case. Particularly for foci, the interaction with other constraints shows that focus alignments are fairly prominent in Finnish.

We can in fact already see this from observations alluded to above. Recall that the object is last in the central domain, followed by marginal elements. However, foci follow the object and presumably focality and marginal-

<sup>9</sup> It may be that this is in fact two adjacency constraints, one for arguments and one for central modifiers. This would make little difference providing that the host-adjacency requirement for the argument were lower ranked than the domain-adjacency requirement.

ity are incompatible: only central elements may be focused. Thus, the fact that the focus follows the object in the centre domain must entail that the alignment of the focus to the edge of the centre domain is a higher ranked condition than the alignment of the object to the edge of this domain. The difference, however, between foci and objects is that objects are always aligned to the following edge, whereas foci are typically adjacent to the following edge when they are non-subjects and the focused subject is in front of the verb:

- (65) Sub(foc) V Adv Obj - \* V Adv Obj Sub(foc)  
 Sub V Adv Obj(foc) - \* Obj(foc) Sub V Adv  
 Sub V Obj Adv(foc) - \* Sub V Adv(foc) Obj

We have seen that it is the high ranking *aFp* constraint which is responsible for the object occupying a position behind the verb. Given this condition, the only way to satisfy the *aAC* constraint is for the argument to be adjacent to the following edge of the centre domain. For foci, then, it is the adjacency to the edge of the domain that is important, rather than being at one edge or the other.

To account for this, we need a fairly highly ranked *pAC* (focus is adjacent to the edge of the Centre domain) constraint. Recall that the non-contrastive focus is marked with a *P* feature. Certainly, *pAC* is higher ranked than *aAC* as foci follow arguments at the end of the centre domain. We will see that there is reason to believe that the focus domain-adjacency constraint is ranked above the constraint which positions the subject before the predicate, and so it follows that it must also be ranked above the constraint that places arguments after the verb, which in turn is placed below the subject constraint:

- (66) *pAC* > *sPp* > *aFp* > *aAC*

Note that this ranking will have subject foci adjacent to the leading edge of the centre domain and object foci adjacent to the following edge of this domain:

(67)

|                       | <i>pAC</i> | <i>sPp</i> | <i>aFp</i> | <i>aAC</i> |
|-----------------------|------------|------------|------------|------------|
| ☞ X <sub>SP</sub> V X |            |            | *          |            |
| X <sub>SP</sub> X V   |            |            | **!        | *          |
| V X <sub>SP</sub> X   | *!         | *          |            | *          |
| V X X <sub>SP</sub>   |            | *!         |            | *          |
| X V X <sub>SP</sub>   |            | *!         | *          |            |
| X X <sub>SP</sub> V   | *!         |            | **         | *          |

(68)

|                                 | pAC | sPp | aFp | aAC |
|---------------------------------|-----|-----|-----|-----|
| X <sub>S</sub> V X <sub>P</sub> |     |     | *   |     |
| X <sub>S</sub> X <sub>P</sub> V | *!  |     | **  | *   |
| V X <sub>S</sub> X <sub>P</sub> |     | *!  |     | *   |
| V X <sub>P</sub> X <sub>S</sub> | *!  | *   |     | *   |
| X <sub>P</sub> V X <sub>S</sub> |     | *!  | *   |     |
| X <sub>P</sub> X <sub>S</sub> V |     |     | **! | *   |

As we see, even though the focus alignment constraint is highly ranked, it has no visible effect on the distribution of the arguments, which sit in the positions designated for them by the subject and argument constraints.

However, there are effects of the focus constraint to be seen. One concerning the subject we will discuss in a short while. One concerning the object we have already seen: when a central modifier is focused, it will follow the object in the centre domain:

(69)

|       | pAC | sPp | AfP | aAC |
|-------|-----|-----|-----|-----|
| V M X |     |     |     |     |
| V X M |     |     |     | *!  |

(70)

|                    | pAC | sPp | aFp | aAC |
|--------------------|-----|-----|-----|-----|
| V M <sub>p</sub> X | *!  |     |     |     |
| V X M <sub>p</sub> |     |     |     | *   |

It is of interest that the notion ‘topic’ does not seem to have a similar effect, and that such an element will not have any special position simply because it is marked with an A feature. Therefore, the topic constraints are all ranked very low in the language. Even so, we will see in the next section one minor effect of a topic constraint, indicating that a t/P (topic is first in the predicate domain) has a high ranking with respect to the other topic alignments.

### 3.4 Contrast

The Finnish data reviewed in section 2 suggest that the notion of contrast is important to the organisation of Finnish expressions. Essentially, the contrastive element comes first (see discussion in section 2.2). This does not seem to be the result of a domain-adjacency condition, however, for two reasons. First, we do not find contrastive elements at the following edge, only at the leading edge. Secondly, when more than one contrastive element is present, they both line up at the front of the clause. As we discussed in section 1, this is the result

of a gradient constraint, and with domain based constraints it is the ‘first’/‘last’ versions that are gradient. The conclusion is therefore that Finnish has a highly ranked *kID* (contrast is first in the relevant domain) constraint. It is hard to determine the exact nature of the domain for contrastive elements, as it could either be the predicate domain or the central domain, given that nothing comes before the contrastive element for other reasons. We will therefore assume that the more general domain is relevant.

The contrastive alignment constraint will affect contrastive topics and foci alike, bringing both to the front of the predicate domain, regardless of whether they are subjects or objects:

(71)

|                 | <i>kIP</i> | <i>pAC</i> | <i>sPp</i> | <i>aFp</i> | <i>aAC</i> |
|-----------------|------------|------------|------------|------------|------------|
| ☞ $X_{SKP} V X$ |            |            |            | *          |            |
| $X_{SKP} X V$   |            |            |            | *          | *!         |
| $V X_{SKP} X$   | *!         | *          | *          |            | *          |
| $V X X_{SKP}$   | **!        |            | *          |            | *          |
| $X V X_{SKP}$   | **!        |            | *          | *          |            |
| $X X_{SKP} V$   | *!         | *          |            | **         | *          |

(72)

|                  | <i>kIP</i> | <i>pAC</i> | <i>sPp</i> | <i>aFp</i> | <i>aAC</i> |
|------------------|------------|------------|------------|------------|------------|
| $X_S V X_{KP}$   | **!        |            |            | *          |            |
| $X_S X_{KP} V$   | *!         | *          |            | **         | *          |
| $V X_S X_{KP}$   | **!        |            | *          |            | *          |
| $V X_{KP} X_S$   | *!         | *          | *          |            | *          |
| $X_{KP} V X_S$   |            |            | *!         | *          |            |
| ☞ $X_{KP} X_S V$ |            |            |            | **         | *          |

(73)

|                  | <i>kIP</i> | <i>pAC</i> | <i>sPp</i> | <i>aFp</i> | <i>aAC</i> |
|------------------|------------|------------|------------|------------|------------|
| ☞ $X_{SKPA} V X$ |            |            |            | *          |            |
| $X_{SKPA} X V$   |            |            |            | **!        | *          |
| $V X_{SKPA} X$   | *!         | *          | *          |            | *          |
| $V X X_{SKPA}$   | **!        |            | *          |            | *          |
| $X V X_{SKPA}$   | **!        |            | *          | *          |            |
| $X X_{SKPA} V$   | *!         | *          |            | **         | *          |

(74)

|                                   | kIP | pAC | sPp | aFp | aAC |
|-----------------------------------|-----|-----|-----|-----|-----|
| X <sub>S</sub> V X <sub>KPA</sub> | **! |     |     | *   |     |
| X <sub>S</sub> X <sub>KPA</sub> V | *!  | *   |     | **  | *   |
| V X <sub>S</sub> X <sub>KPA</sub> | **! |     | *   |     | *   |
| V X <sub>KPA</sub> X <sub>S</sub> | *!  | *   | *   |     | *   |
| X <sub>KPA</sub> V X <sub>S</sub> |     |     | *!  | *   |     |
| X <sub>KPA</sub> X <sub>S</sub> V |     |     |     | **  | *   |

As we can see, a contrastive element of any type is brought to the front. However, in these cases the other element is unmarked and unaffected. Thus, when the subject is contrastive, the simple object remains in its post-verbal position and when the object is contrastive, the simple subject remains in its preverbal position.

An interesting point is what happens when there are more than one contrastive element. If these two elements are contrastive topics, then they both come to the front, with one accepting second position:

(75)

|                                      | kIP  | pAC | sPp | aFp | AAC |
|--------------------------------------|------|-----|-----|-----|-----|
| X <sub>SKPA</sub> V X <sub>KPA</sub> | **!  |     |     | *   |     |
| X <sub>SKPA</sub> X <sub>KPA</sub> V | *    | *   |     | **  | *   |
| V X <sub>SKPA</sub> X <sub>KPA</sub> | ***! | *   | *   |     | *   |
| V X <sub>KPA</sub> X <sub>SKPA</sub> | ***! | *   | *   |     | *   |
| X <sub>KPA</sub> V X <sub>SKPA</sub> | **!  |     | *   | *   |     |
| X <sub>KPA</sub> X <sub>SKPA</sub> V | *    | *   |     | **  | *   |

In this case, there is no ordering restriction between the elements, as the two relevant candidates have the same violation profiles. However, when one is a contrastive topic and the other a contrastive focus, the topic precedes the focus, indicating the effect of a topic constraint. As we have said, the topic constraints are lowly ranked, but even lowly ranked constraints can have an effect. Let us introduce a constraint that prefers initial topics (topic is first in the predicate domain)

(76)

|                                     | kIP  | pAC | sPp | aFp | aAC | tIP |
|-------------------------------------|------|-----|-----|-----|-----|-----|
| X <sub>SKP</sub> V X <sub>KPA</sub> | **!  |     |     | *   |     | **  |
| X <sub>SKP</sub> X <sub>KPA</sub> V | *    | *   |     | **  | *   | *!  |
| V X <sub>SKP</sub> X <sub>KPA</sub> | ***! | *   | *   |     | *   | **  |
| V X <sub>KPA</sub> X <sub>SKP</sub> | ***! | *   | *   |     | *   | *   |
| X <sub>KPA</sub> V X <sub>SKP</sub> | **!  |     | *   | *   |     |     |
| X <sub>KPA</sub> X <sub>SKP</sub> V | *    | *   |     | **  | *   |     |

(77)

|                                     | k/IP | pAC | sPp | aFp | aAC | t/IP |
|-------------------------------------|------|-----|-----|-----|-----|------|
| X <sub>SKPA</sub> V X <sub>KP</sub> | **!  |     |     | *   |     |      |
| X <sub>SKPA</sub> X <sub>KP</sub> V | *    | *   |     | **  | *   |      |
| V X <sub>SKPA</sub> X <sub>KP</sub> | ***! | *   | *   |     | *   | *    |
| V X <sub>KP</sub> X <sub>SKPA</sub> | ***! | *   | *   |     | *   | **   |
| X <sub>KP</sub> V X <sub>SKPA</sub> | **!  |     | *   | *   |     | **   |
| X <sub>KP</sub> X <sub>SKPA</sub> V | *    | *   |     | **  | *   | *!   |

As we see in these examples, the t/IP constraint selects the candidate in which the topic is first, even despite the constraint's low ranking. The addition of this constraint will have no effect on phenomena we have discussed so far. Given that aFp outranks t/IP, a topic object will remain behind the verb and the situation in which there are two contrastive topics will still give identical violation profiles for the candidates in which one topic precedes the other at the front of the centre domain.

### 3.5 Interaction between Contrast and Focus

Finally in this paper we turn to the behaviour of the focus in the presence of a contrastive element. As detailed in section 2, a focus subject will defect from the front to the back in the presence of a contrastive elements, even though the subject's normal position is a preverbal one and the notion of focus usually has little effect on its positioning. Furthermore, this phenomenon is restricted to the focus: a topic or a neutral subject will remain in position in the presence of a contrastive element.

These observations are in fact already predicted by the system we have so far argued for. More specifically, it is the interaction between the k/IP and pAC constraints that produces the effect. As has been illustrated, contrastive elements want to be first, and non-contrastive foci want to be at the edge. As long as there is no other reason for a focus subject to be at any edge other than the leading one, that is where it appears in order to satisfy its subject requirements. However if this edge is already taken, i.e. by a contrastive element, then the focus will switch sides in order to be at the following edge. In this case it will follow the object, if this is not the contrastive element, as the object gives up its final position to the dominant focus, in the same way that we have shown it to concede this position to a focused modifier.

(78)

|                                      | k/P | pAC | sPp | aFp | aAC | t/P |
|--------------------------------------|-----|-----|-----|-----|-----|-----|
| X <sub>SP</sub> V X <sub>KP(A)</sub> | **! |     |     | *   |     | **  |
| X <sub>SP</sub> X <sub>KP(A)</sub> V | *!  | *   |     | **  | *   | *   |
| V X <sub>SP</sub> X <sub>KP(A)</sub> | **! | *   | *   |     | *   | **  |
| V X <sub>KP(A)</sub> X <sub>SP</sub> | *!  | *   | *   |     | *   | *   |
| X <sub>KP(A)</sub> V X <sub>SP</sub> |     |     | *   | *   |     |     |
| X <sub>KP(A)</sub> X <sub>SP</sub> V |     | *!  |     | **  | *   |     |

#### 4 Conclusion

In this paper we have discussed some rather intricate phenomena concerning the interaction of various discourse effects that determine the word order of elements in Finnish. In particular, we have seen how the notion of non-contrastive focus, while not normally playing a great role in determining the position of an element, does so when in conflict with an initial contrastive element. We have shown how this can be captured in terms of the interaction between constraints that want elements to be first in a domain, and those that want elements to be at the edges of the domain. The kind of side switching behaviour demonstrated by the Finnish focus is exactly what this system predicts, and hence the Finnish data goes some way to supporting the general theory.

Other systems built on more standard constituent structure assumptions, and particularly those which propose specific phrases to house specific elements, such as the rather popular notion of a Focus Phrase, might have some difficulty in capturing the data however. For a start, the notion of focus involved seems to be what is commonly called **presentational focus**, which in many languages, including Finnish, seems not to behave like contrastive focus, or **information focus**. The contrastive focus seems to be the one that has a special position in the clause, and therefore it has been assumed that the specifier of the FocP is reserved for this element, and that there is no specific position for the non-contrastive focus, which normally remains *in situ* and is indicated solely by stress. The Finnish data, however, indicate that it is not true that non-contrastive foci do not occupy specific positions and that under the right circumstances this can be made overt. Yet, to handle this in terms of an X-bar approach would seem to necessitate the assumption of a special phrase for the non-contrastive focus, a phrase that is hardly ever made use of, except in the presence of a contrastive element. But given that under anyone's view, the non-contrastive focus does not occupy the specifier of the contrastive element, why these elements are in complementary distribution with each other at the front of the clause would be highly problematic to account for. At the same time, in the system explored in the present paper, neither of these



points are problematic. That non-contrastive foci tend not to have specific positions falls out as a natural consequence of the constraint rankings discussed. In an optimality theoretic framework, that there should be constraints that have little noticeable effect is normal and is exactly how linguistic variation can be achieved. On the other hand, because constraints are universal, given the right circumstances even the most lowly ranked constraint can have an effect, i.e. determine the optimality of the winning candidate. This is exactly what we find with the Finnish focus subject, and its traitorous behaviour is thus easily accounted for.

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