*On the order of objects in Icelandic double object constructions**

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Abstract

This paper deals with the order of objects in double object constructions in Icelandic. It reports on an experimental study which was conducted to test the acceptability of the unmarked and inverted word orders. The study reveals that the inverted object order (direct object precedes indirect object) is in fact not as acceptable as has often been claimed in the previous literature. The paper looks at some of the factors the alternation is sensitive to and tries a first constraint-based analysis. Moreover, a brief comparison between Icelandic and its cousin German is offered.

1 Introduction

It is a common assumption in the literature on the double object construction in Icelandic that the objects of certain verbs such as *gefa* ('give'), *senda* ('send') and *sýna* ('show') can occur in two orders: in the *unmarked order* the indirect object (dative object; henceforth IO) precedes the direct object (accusative object; henceforth DO), whereas the DO precedes the IO in the *inverted order* (Collins & Thráinsson 1996, Falk 1990, Ottósson 1991, Zaenen, Maling & Thráinsson 1990 among others), cf. the examples in (1), taken from Falk (1990: 85).[1]

(1) a. Ég gaf/sýndi/sendi honum bókina. (unmarked order)
I gave/showed/sent him-DAT the.book-ACC

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[1] The *inverted* order has also been referred to as *exceptional order* by Collins & Thráinsson (1996).

b. Ég gaf/sýndi/sendi bókina einhverju bókasafni. (inverted order)
I gave/showed/sent the.book-ACC some library-DAT

The aim of this paper is to investigate the acceptability of the inverted order, some of the factors that contribute to its acceptability and use, and the realisation of focus in these constructions in Icelandic. Section 2 provides some background information on the double object construction in Icelandic and formulates predictions related to the order of the two objects. Section 3 reports on an acceptability judgement study testing these predictions. Section 4 serves as a general discussion and suggests a constraint-based analysis. A brief summary and conclusion are provided in Section 5.

2 The order of objects in Icelandic double object constructions

Six case patterns seem to occur with verbs taking two objects in Icelandic (cf. Zaenen, Maling & Thráinsson 1990: 119 and Thráinsson 1994: 177). The most common pattern is represented by example (1)a) above: a DAT-IO (goal/recipient) precedes an ACC-DO (theme).[2] Zaenen, Maling & Thráinsson (1990: 111f.) refer to this pattern as the "core class of ditransitive verbs", based on the observation that they are the only verbs that "survive as ditransitives in languages […] without morphological case marking" such as English and the Scandinavian languages other than Icelandic, whereas verbs occurring in the other case patterns in Icelandic correspond to verbs taking one nominal and one prepositional complement in other languages. The DAT-ACC pattern is also the only pattern that has been argued to occur in the inverted order (e.g. Collins & Thráinsson 1996, Ottóson 1991, Zaenen, Maling & Thráinsson 1990).

According to the relevant literature, the grammaticality of the inverted order with verbs that do allow it is restricted by several factors, among them idiomaticity (Falk 1990: 85), focus, stress patterns, and (in)definiteness. Ottóson (1991) notes that inversion in Icelandic is sensitive to focus and definiteness, similar to what has been argued for German:

> The inverted object must preferably be unfocussed, it seems, or at least not more focused than the unmoved object. Thus, the inverted object is often definite, but can be indefinite if the other object is also indefinite. (Ottóson 1991: 94)

[2] The remaining patterns are: (1) ACC object precedes DAT object, (2) ACC object precedes GEN object, (3) two DAT objects, (4) DAT object precedes GEN object, (5) two ACC objects. I refer the reader to the literature given above.

Let us take a quick look at German, another language with morphological case marking, where objects of ditransitive verbs such as *geben* ('give'), *schicken* ('send') and *zeigen* ('show') can switch the order of objects as illustrated in (2).[3]

(2) a. Der Professor gab/zeigte/schickte dem Studenten die Bücher. (unmarked)
The professor gave/showed/sent the student-DAT the.books-ACC

b. Der Professor gab/zeigte/schickte die Bücher dem Studenten.

For German, as for Icelandic, the IO>DO (or DAT>ACC) order has been argued to be the unmarked one with verbs of the kind under discussion here. Among the factors that the choice of the order has been argued to be sensitive to are discourse status and definiteness. In particular, the unmarked IO>DO order can occur regardless of the focus structure, but the DO can only precede the IO if the DO is unfocused (compare (3) and (4); focus indicated by capitals). Moreover, definite objects precede indefinite ones (cf. (5)). (Cf. Choi 1999 for an overview of the literature; cf. also Büring 2001.)

(3) IO focus
a. Der Professor gab dem STUDENTEN das Buch.
The professor gave the student-DAT the book-ACC

b. Der Professor gab das Buch dem STUDENTEN.

(4) DO focus
a. Der Professor gab dem Studenten das BUCH.
The professor gave the student-DAT the book-ACC

b. *Der Professor gab das BUCH dem Studenten.

(5) a. Der Professor gab dem Studenten ein/das Buch.
The professor gave the student-DAT a/the book-ACC

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[3] Note that there is no lexical difference between verbs like *geben* in the IO>DO order and the same verb in the DO>IO order. There is, however, a lexical difference between German *geben* and *geben+an* ('give' plus preposition 'to'). The same difference has been observed for Icelandic by Ottóson (1991: 94). Compare the examples in (x) below. In both German and Icelandic *give + P* corresponds to *donate* rather than *give*.

(x) a. Der Professor gab seine Bücher an die Bibliothek. (German)
The professor gave his books-ACC to the library
'The professor donated his books to the library.'

b. Jón gaf eigur sínar til fátækra. (Icelandic)
John gave belongings his to the poor.
'John donated his belongings to the poor.'

b. *Der Professor gab ein Buch dem Studenten.

c. Der Professor gab das Buch dem Studenten.

Büring (2001) suggests that under wider focus contexts such as VP focus, the unmarked DAT>ACC order is preferred in German. In Büring's framework, this follows from the violation of a syntactic constraint deriving the unmarked order without gaining anything in terms of prosody (cf. Section 4.2 below). Notice that using the marked order when the unmarked order yields the desired effect would also be a violation of economy along the lines of Reinhart (1995).

If, as Ottóson suggests, Icelandic behaves similarly to German in this respect, we expect the patterns in (6) and (7) below. The unmarked order occurs with both IO and DO focus, but the DO>IO order is only possible under IO focus.[4]

(6) IO focus

a. María gaf ELÍNU bókina.
Mary gave Eileen-DAT the.book-ACC

b. María gaf bókina ELÍNU.

(7) DO focus

a. María gaf Elínu BÓKINA.
Mary gave Eileen-DAT the book-ACC

b. *María gaf BÓKINA Elínu.

In addition, following Büring's work, the unmarked order is expected to be preferred in wide focus contexts.

Similarly, it has been noted that for the inverted order to occur, the IO has to be stressed and non-pronominal (Collins & Thráinsson 1996, Falk 1990). This is illustrated by the example in (8) (from Falk 1990: 86).

(8) *Ég gaf bókina honum.
I gave the.book-ACC him-DAT

Given the well-established relation between focus and stress, and given the assumption that the IO can occur in the inverted order only if focused, it is hardly surprising that the IO must then also be stressed. Since pronominal objects are typically used anaphorically and are therefore unstressed, a pronominal IO must

[4] I ignore definiteness here. All object DPs employed in what follows are definite. Recall that Ottóson (1991) mentions that object inversion in Icelandic is sensitive to definiteness such that the inverted DO is usually definite and can only be indefinite if the IO is also indefinite.

occur in the unmarked order. Under the assumptions outlined so far, we would, however, expect a (contrastively) focused and therefore stressed IO pronoun to be allowed in the inverted order, just as it is in German (cf. (9)).

(9)	Er	hat	das Buch	IHR	gegeben	(nicht ihm).
	He	*has*	*the.book-ACC*	*her-DAT*	*given*	*(not him)*

However, Collins &Thráinsson (1996: 418) note that the "stress factor is not very perceptible".

Given this reported behaviour of the construction in question, the predictions for the study presented in the next section can now be summarised as follows:

a) The unmarked order IO>DO is expected to occur in all contexts.
b) The inverted order DO>IO is expected to be possible under IO focus, both contrastive and non-contrastive.
c) The inverted order is expected to be unacceptable under DO focus.
d) If both objects have equal information status, the inverted order is expected to be less optimal than the unmarked order (following Büring 2001), but also might not be unacceptable (following Ottóson 1991).

3 An acceptability judgement study

To investigate the question of whether and to what extent the inverted order is acceptable in Icelandic double object constructions, the acceptability judgement study reported on in this section was conducted. The participants were presented with question answer pairs such that the question established a particular focus structure. The answer sentences containing double object constructions appeared in either the unmarked or the inverted order. In a first version of the study (part A), all questions and answers were presented visually (on a computer screen). In a second version (part B), the questions were presented visually as before, but the answers were presented acoustically. Hence the prerequisite for a stressed IO when following the DO was met. In both part A and part B, the participants judged the acceptability of each answer sentence in the given context established by the question. They used a scale of 1 to 4, where 1 was equivalent to "ok", 2 to "slightly odd", 3 to "rather odd", and 4 to "wrong".

3.1 Method

3.1.1 Participants and apparatus. The two parts of the study were carried out at University College London and at the University of Iceland, Reykjavik,

respectively. 5 native speakers of Icelandic, staying in London at the time of the running of the study, volunteered for participation in part A, 13 unpaid speakers participated in part B. Of the 18 participants, 3 were male, 15 were female. The aim of the study was unknown to the participants. The materials were the same in the two versions. However, the answer sentences were presented visually in part A, but auditorially in part B.

3.1.2 Materials. As experimental items, 36 target items plus 25 filler items were chosen. All items consisted of a question to establish the context and an answer sentence. The experimental items occurred in six different focus types: Sentence focus, VP focus, DO focus, IO focus, contrastive DO focus, and contrastive IO focus. Each focus type was represented by 6 sentences, 3 in each order. Examples are given in (10) below. Arrows indicate the expected preference according to the predictions outlined in Section 2 above. A preference for A1 (unmarked order) was expected for the focus patterns in a) through d), whereas A1 (unmarked order) and A2 (inverted order) were predicted to be equally acceptable in e) and f).

(10) Target items:

a. Sentence focus
Q: Hvað gerðist? (*What happened?*)

b. VP focus
Q: Hvað gerði Rósa? (*What did Rosa do?*)

c. DO focus
Q: Hvað gaf Rósa Elínu? (*What did Rosa give to Eileen?*)

d. Contrastive DO focus
Q: Gaf Rósa Elínu bæklinginn? (*Did Rosa give the brochure to Eileen?*)

→ A1: Rósa gaf Elínu bókina. (unmarked order)
Rosa gave Eileen-DAT the.book-ACC

A2: Rósa gaf bókina Elínu. (inverted order)
Rosa gave the.book-ACC Eileen-DAT

e. IO focus
Q: Hverjum gaf Rósa bókina? (*Whom did Rosa give the book to?*)

f. Contrastive IO focus
Q: Gaf Rósa Maríu bókina? (*Did Rosa give the book to Mary?*)

→ A1: Rósa gaf Elínu bókina.
Rosa gave Eileen-DAT the.book-ACC

→ A2:	Rósa	gaf	bókina	Elínu.
	Rosa	*gave*	*the.book-ACC*	*Eileen-DAT*

The filler items also consisted of question answer pairs. They were grammatical and ungrammatical transitive sentences occurring in 4 focus types (cf. the examples in (11); several of the filler sentences contained modifying adjectives).

(11) Filler items:

a. Sentence focus
Q: Hvað gerðist? (*What happened?*)

b. VP focus
Q: Hvað gerði Elísabet? (*What did Elisabeth do?*)

c. DO focus
Q: Hvað borðaði Elísabet? (*What did Elisabeth eat?*)

d. Contrastive subject focus
Q: Borðaði Jón banana? (*Did John eat a banana?*)

A1:	Elísabet	borðaði	banana.
	Elisabeth	*ate*	*a.banana-ACC.*

A2: *Borðaði banana Elísabet.

For part B of the study all materials were recorded. They were spoken by an untrained, female native speaker of Icelandic who had participated in part A of the judgement study. She was instructed to speak naturally, in a normal speed. The materials were recorded in the Anechoic Chamber at UCL, Department of Phonetics and Linguistics. The speaker read both the context questions and the answers of all experimental and filler items, although only the answers were subsequently used. The answer sentences were digitized into individual sound files to be included in the judgement study, where they replaced their syntactically identical, but visually presented counterparts of part A. Their prosodic adequacy as answer sentences in their respective contexts was checked.

3.1.3 Design. Each trial consisted of a question answer pair. In part A of the study, the question appeared on the screen first, joined by the corresponding answer on mouse click. In part B, the question appeared on the screen, then, on mouse click, the answer was presented acoustically. The order of the items was pseudo-randomised under the following restrictions: (i) not more than two target items occurred in a sequence, (ii) items representing the same focus type were not presented in a successive order, (iii) not more than two unexpected/ungrammatical

answer sentences occurred in a sequence. These restrictions applied to both target and filler items. Each trial was preceded by a signal '+'. The materials were presented to the participants by using Microsoft PowerPoint. New slides appeared on mouse click.

3.1.4 Procedure. The participants were tested individually in a quiet, closed room. They were seated in front of a computer. They were instructed to read the questions and answers and to judge the acceptability of each answer sentence spontaneously according to the 1-4 scale in the context established by the preceding question. The experimental list was preceded by four practice items to give participants the opportunity to familiarise themselves with the procedure and to ask questions about anything that was unclear. Their judgements were recorded on a protocol list prepared in advance.

3.1.5 Results and discussion. The results are summarised in the table below. The unmarked order (IO>DO) is clearly preferred in all given contexts and was judged "ok" throughout. Equally clearly, the inverted order is far less acceptable across all speakers and conditions regardless of the focus structure. All but one of the mean values for the DO>IO order are between 3 (rather odd) and 4 (wrong). (Note that several participants hardly ever used "4", even for clearly ungrammatical filler items. One speaker made use of "1" and "2" only, even when referring to clearly ungrammatical filler items. This explains why not even the contrastive DO sentences come closer to 4 overall.) There is a slight tendency for the IO focus (2.96 overall) and contrastive IO focus (3 overall) sentences to be more acceptable, but these results are still incompatible with the predictions made in Section 2 above. For both contrastive and non-contrastive IO focus the inverted order was expected to be acceptable rather than "rather odd". It seems, however, as if the inverted order is generally unaccepted among naïve speakers, a tendency that was confirmed in personal communication with the participants following the experimental sessions.

(12) Acceptability judgements, mean values (1=ok, 2=slightly odd, 3=rather odd, 4=wrong)

	Part 1 (5 participants)		Part 2 (13 participants)		Overall (18 participants)	
Focus type	IO>DO	DO>IO	IO>DO	DO>IO	IO>DO	DO>IO
Sentence	1	3.2	1	3.15	1	3.16
VP	1	3	1	3.25	1	3.2
DO	1	3.26	1	3.3	1	3.27
IO	1	2.6	1	3	1	2.96
Contr DO	1	3.4	1	3.64	1	3.57
Contr IO	1	3	1	3	1	3

The word order in Icelandic double object constructions thus seems to allow for less variation than expected. The variation does not seem to be sensitive to focus patterns to the predicted extent.

4 Discussion

To approach an explanation of the results illustrated above, let us first take another, closer look at the literature and at some other factors that have been argued to govern the order of objects in double object constructions in related languages such as German. One such factor which has not been considered in the experimental study presented above is animacy (e.g. Vogel & Steinbach 1998; Müller`s 2000: 66; 242 *Belebtheitsbedingung* 'animacy condition'). The central idea is that animate arguments must precede non-animate ones. For our Icelandic examples, and in particular for the experimental materials, this would suggest that the apparent non-acceptability of the inverted order might be due to the fact that a non-animate object, *bókina* in (10) above, precedes an animate object (*Elínu*). In fact, all experimental items were of this kind.

In their work on Icelandic, Collins & Thráinsson (1996) mention the animacy factor in passing:

> This stress factor is not very perceptible. […] It is also more pronounced when an inanimate direct object precedes an animate indirect object. In this sense, stress seems to indicate a marked order. (Collins & Thráinsson 1996: 418)

It follows from this that the inanimate>animate order is marked, but that an inanimate DO is allowed to precede an animate IO if the IO receives stress. Consider again the experimental materials in (10)e) and f), repeated here as (13) for convenience (stress and focus indicated by capitals):

(13) a. IO focus (= (10)e)):
Q: Hverjum gaf Rósa bókina? (*Whom did Rosa give the book to?*)

b. Contrastive IO focus (= (10)f))
Q: Gaf Rósa Maríu bókina? (*Did Rosa give the book to Mary?*)

→ A1:	Rósa	gaf	ELÍNU	bókina.
	Rosa	*gave*	*Eileen-DAT*	*the.book-ACC*
→ A2:	Rósa	gaf	bókina	ELÍNU.
	Rosa	*gave*	*the.book-ACC*	*Eileen-DAT*

In these conditions, inanimate DOs precede animate IOs in the inverted order (A2). Crucially however, the IO in each of these sentences is focused and bears the main stress, in particular in part B of the experiment with all answer sentences being presented acoustically. The IO should therefore be allowed in the final position. Contrary to the predictions though, participants still rejected the inverted order to the extent illustrated in (12) above.

I furthermore presented four naïve native speakers with the examples given in (14) and (15) below.

(14) a. Hann gaf konunginum ambáttina.
He gave the.king-DAT the maidservant-ACC

b. Hann gaf ambáttina konunginum.

Example (14) frequently occurs in the literature (Collins & Thráinsson 1996, Ottóson 1991, among others) without any doubt about the acceptability of the inverted order being expressed. Both objects are animate which suggests that the animacy factor should be neutralized. However, all my informants agreed that (14b) is rather odd and that a) was clearly preferred if not the only possible word order.

(15) a. Þau sýndu foreldrunum krakkana.
They showed the.parents-DAT the.kids-ACC

b. Þau sýndu krakkana foreldrunum.

Example (15), too, is taken from the syntactic literature and the acceptability of the inverted order has not yet been doubted. Once again, there are two animate objects, thus the same predictions as for the previous example hold. However, my informants' judgements were the same as for (14). The inverted order was rejected.

If animacy is taken seriously as a factor determining object order in Icelandic, these judgements come as a surprise. Notice also that Vogel & Steinbach (1998) argue for German that ditransitive constructions with two animate or two inanimate objects have two unmarked orders, since for German, they argue, it is animacy rather than case that determines the unmarked order, such that animate arguments precede inanimate ones. However, in the light of the present data, it seems to me that animacy is not as powerful in Icelandic as it has been argued to be in German. If two animate objects occur, the IO>DO (or DAT>ACC) order is still clearly preferred.

Another factor that deserves consideration is heaviness, i.e. syntactic complexity in the sense that longer, more complex material follows shorter, less complex material. For instance, a heavy IO, such as a noun modified by a relative clause,

would be expected to be possible in the position following the DO. In fact, Collins & Thráinsson (1996: 416) suggest for Icelandic that even verbs that do not otherwise allow inversion can be made "reasonably acceptable" in the DO>IO order if the IO is made very heavy. Notice also that Zaenen, Maling & Thráinsson (1990: 119) mention that for verbs that do allow inversion such as *gefa* ('give') the IO in inverted constructions "need not be especially heavy".

I presented two of my naïve informants with the data given in (16) and (17). In these examples, the heaviness of the IO has been increased by adding modifying relative clauses. Speaker 1 felt that the b) examples, but not the a) examples were correct, i.e. despite the heaviness of the IO the inverted order remained unacceptable to her. However, speaker 2 disagreed. The sentences containing the relative clause were judged "ok" by him both in the unmarked and in the inverted order.[5]

(16) a. Stefán gaf sítrónuna Hildi sem býr á Akureyri.
Stefan gave the.lemon.ACC H.-DAT Rel-part(who) is from Akureyri

b. Stefán gaf Hildi sem býr á Akureyri sítrónuna.

(17) a. Stefán gaf sítrónuna Hildi sem hann hitti í bænum.
Stefan gave the.lemon.ACC H.-DAT whom he met in the market.

b. Stefán gaf Hildi sem hann hitti í bænum sítrónuna.

Since the inverted order seems to be acceptable only with a heavy DP (and only for one of the two speakers), it might be hypothesized that it is derived here by heavy NP shift rather than anything else. However, both Collins & Thráinsson (1996) and Falk (1990) argue that the inverted order is not derived by movement and cannot be some type of shifted structure or stylistic reordering, but that the inverted structure corresponds to a prepositional ditransitive. Evidence comes e.g. from binding properties of the construction which suggest that the IO c-commands the DO in the unmarked order, whereas the DO c-commands the IO in the inverted order. Ottóson (1991) argues that the inverted order must be derived from an underlying order but notes that it is not a type of heavy NP shift.

This is not the place to go into any syntactic details. Nor would I want to commit myself to a statement about the syntactic relation between the two orders. My aim is also not to deny any syntactic differences that have been argued to exist between the DAT>ACC class of Icelandic ditransitives and other groups of verbs taking two

[5] In fact, this speaker said that the inverted construction containing the relative clause was "definitely much better than a simpler sentence would be" and even thought the a) examples better than the b) examples, i.e. preferred the inverted order within the "ok" range of the scale.

nominal objects (cf. Zaenen, Mailing & Thráinsson 1990). However, it is striking that native speakers do not seem to be in favour of the inverted order, unless perhaps the IO gets really heavy syntactically.

In any case, it must be concluded from the results presented above that there is less word order variation than expected in double object constructions. Of the factors that govern the alternation, focus and stress are not very powerful. Even though their effects are visible in the slightly better results for the inverted order in the IO and contrastive IO focus conditions, these results are nowhere near the expected degree of acceptability. The only factor word order seems to be sensitive to to a certain extent is syntactic complexity. Let us now look at some implications for the way focus is realised in Icelandic.

4.1 Focus, word order and stress

There are different ways of signalling focus in a sentence. As has already been mentioned above, focused elements receive the main stress. In Icelandic, as well as in English, sentences are prosodically right-headed (Árnason 1998). If the focus fails to be in a position where it can receive main stress, a priory at least two options seem to exist. One option is syntactic in nature. The focused element can undergo a syntactic movement operation which places it in the final position, or, alternatively, non-focused material can be moved to the front leaving the focused constituent in a position where it can receive main stress. Related movement operations have been suggested e.g. by Zubizaretta (1998) for Spanish. The second option is stress shift such that the main stress is relocated from its rightmost position to another position in the sentence, while at the same time the rightmost element undergoes destressing (Reinhart 1995). Árnason (1998: 50) remarks for Icelandic that "the stress goes on the rightmost 'stressable' unit of the focus domain". Consider the Icelandic double object construction in the unmarked order. In the case of DO focus and in the wide focus cases the main stress is assigned to the DO as the rightmost element. In the case of IO focus, however, the focus domain is constituted by the IO and the stress will therefore go on the rightmost stressable unit of the IO, in our examples the first syllable of the proper noun in question. (Note that lexical items in Icelandic are prosodically left-headed; cf. Árnason 1998.) Rather than reordering the objects, Icelandic makes use of stress shift such that the DO undergoes destressing and the main stress is relocated from the DO as the rightmost element in the sentence to the rightmost unit of the IO as the focused element. This is illustrated in Figures 1 and 2 showing the F0-contours corresponding to examples (18)a) and b), respectively.

(18) a. Wide focus
Jón gaf Hildi epli.
John gave Hilda an.apple

b. IO focus (Hverjum gaf Jón epli? / Whom gave John an apple to?)
Jón gaf HILDI epli.

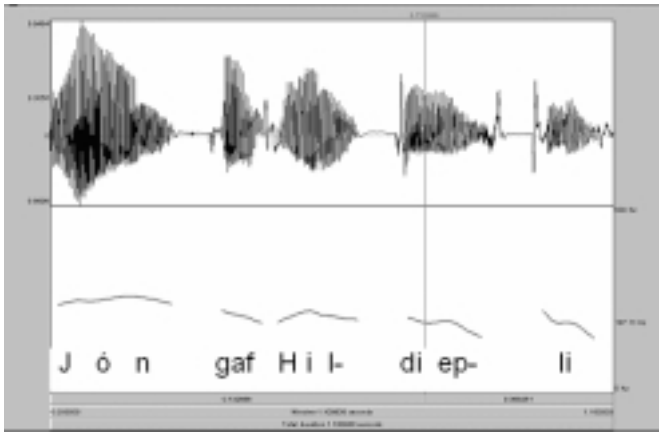

Figure 1: Wide focus

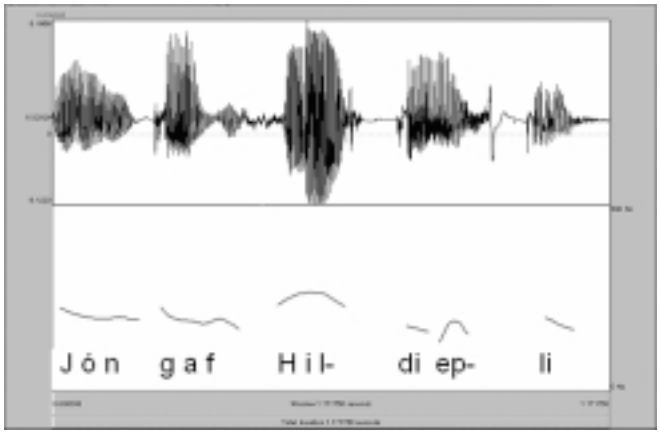

Figure 2: IO focus

Figure 1 shows the typical downstepping pattern: there are three pitch peaks, one on the subject, one on the IO and one on the DO. Later pitch peaks are lower than earlier ones (for downstepping in Icelandic, cf. Árnason 1998 and Dehé 2004). The DO is perceived as the most prominent constituent. In Figure 2, on the other hand, illustrating IO focus, the pitch contour suggests that the main stress has shifted to the first syllable of the IO *Hildi*; notice the corresponding pitch peak.

The fact that focus is realised prosodically rather than syntactically in the double object examples may not be translated into a grammar for Icelandic where no syntactic variation in the interest of focus occurs. It has been argued that Icelandic

can mark focused elements by their syntactic position, just as English can. Thráinsson (1994: 181) notes, for instance, that most constituents can be topicalized in Icelandic. According to him, topicalisation can either give a more prominent position to an already established discourse topic, or it can have a contrastive function. In the latter case, the topicalised constituent must also be stressed. More recently, Hrafnbjargarson (2004) argues that specific elements in the clause can be focused by means of stylistic fronting. The sentence in (19b) but not that in a) can have a contrastive reading such that the bottles that were smuggled in, as opposed to those that were smuggled out, were shown to the person uttering the sentence. Similarly, in (19)c) but not in a) there can be a contrast between *smuggle* and some other way of bringing the bottles in.

(19) a. Hann sýndi mér flöskurnar sem hafði verið smyglað inn.
He showed me the.bottles that had been smuggled in.

b. Hann sýndi mér flöskurnar sem **inn** hafði verið smyglað.
He showed me the.bottles that in had been smuggled

c. Hann sýndi mér flöskurnar sem **smyglað** hafði verið inn.
He showed me the.bottles that smuggled had been in

The same holds for the examples in (20). According to Hrafnbjargarson, (20a) can only serve as a statement about books being read, whereas in (20b), the verb is contrasted with some other activity that is possible with books.

(20) a. Bækur hafa verið lesnar.
Books have been read

b. **Lesnar**$_i$ hafa verið t_i bækur.
Read have been books

Contrastive focus in Icelandic can therefore quite clearly be reflected in the syntax, but word order is apparently not much of an option in the case of the two objects of ditransitive verbs. Rather, in double object constructions such as those discussed above, focus marking seems to be limited to intonation. Let us now turn to an analysis of the observed pattern.

4.2 Towards an analysis

Büring (2001) suggests a constraint-based approach to the object alternation in German. The interaction between syntax, focus patterns and prosody is translated in his account into the use of constraints of both syntactic and prosodic nature in the

same evaluation. In the same spirit, I will propose a first analysis of the Icelandic facts in this section.

In Optimality Theory, the competing candidates are alternative realisations of the same input. For the purpose of the analysis below I follow Grimshaw (1997: 375f.) in that the input consists of a "lexical head plus its argument structure and an assignment of lexical heads to its arguments, plus a specification of the associated tense and aspect", and Grimshaw & Samek-Lodovici (1995) in that the discourse status of the arguments is also specified in the input.

The observation that focus must be prosodically most prominent is taken care of by Büring's (2001) undominated FOCP constraint. If the nuclear accent falls on a constituent other than the focused one or if the focused element does not bear the nuclear accent, the corresponding candidate is ruled out. Furthermore, the requirement for the dative IO to precede the accusative DO in the unmarked order in German translates into the DAT constraint in Müller's (2000) and Büring's (2001) work. For the purpose of the present paper we will borrow this constraint to account for the unmarked order in Icelandic. In addition, let us use Truckenbrodt's (1995) constraints taking care of the syntax-phonology mapping. In his work, the three constraints given in (21) below jointly derive edge-alignment of syntactic and prosodic phrases. Given the prosodic hierarchy and its relation to syntactic structure in (22) (from Truckenbrodt 1995: 17), ALIGN-PHONP, R translates into the two constraints given in (23) relevant in this paper.

(21) a. WRAP-XP
Each lexically headed XP must be contained inside a phonological phrase.

b. STRESS-XP
Each lexically headed XP must contain phrasal stress.

c. ALIGN-PHONP, R
Align the right edge of each phonological phrase with its head x.

(22)

SYNTAX	PROSODIC HIERARCHY
Utterance	Prosodic Utterance
(Root Clause)	Intonational Phrase (iP)
XP	Phonological Phrase (pP)
X°	Phonological Word

(23) a. ALIGN-PP, R (H-P)
Align the right edge of each phonological phrase (pP) with its head x.

b. ALIGN-iP, R (H-I)
Align the right edge of each intonational phrase (iP) with its head x.

Tableau 1 illustrates the conflict between STRESS-XP and WRAP-XP (parentheses indicate phonological phrasing, x indicates the head of the prosodic phrase).

Tableau 1. Illustrating the prosodic constraints STRESS-XP and WRAP-XP

		STRESS-XP	WRAP-XP
a.	(x)iP (x) (x)pP Subj $_{VP}$[V IO DO]	*	√
b.	(x)iP (x) (x)(x)pP Subj $_{VP}$[V IO DO]	√	*

While STRESS-XP requires both objects to receive phrasal stress, only one of the objects can receive stress when they are wrapped into one phonological phrase together with the verb. Accordingly, candidate a) violates STRESS-XP since the IO does not receive phrasal stress. Candidate b), on the other hand, violates WRAP-XP, since the VP is not contained inside one phonological phrase. For Icelandic, there is independent evidence from segmental variation which suggests that there is a phonological phrase boundary between the two objects across all focus types (Dehé 2004). We must therefore assume that in Icelandic, STRESS-XP dominates WRAP-XP, just as it does in Tableau 1.

In Tableau 2, the conflict between the two alignment constraints is illustrated.

Tableau 2. Illustrating the prosodic constraints H-I and H-P

		H-I	H-P
a.	(x)iP (x) (x)pP Subj $_{VP}$[V IO DO]	√	√
b.	(x)iP (x) (x --)pP Subj $_{VP}$[V IO DO]	√	*
c.	(x --)iP (x) (x)pP Subj $_{VP}$[V IO DO]	*	√
d.	(x --)iP (x) (x --)pP Subj $_{VP}$[V IO DO]	*	*

Candidate a) satisfies both constraints: both the head of pP and the head of iP are right-aligned with the edge of their corresponding phrases. Candidate b) violates H-P since there is a potential head position (indicated by --) between the head of pP and its right edge (Notice that H-I is not violated since DO is a potential prosodic head for pP but not for iP). Candidate c) satisfies H-I for similar reasons. Candidate

d) violates both H-I and H-P since both the head of pP and the head of iP fail to be aligned with the right phrase edges.

The constraints employed here are summarised in (24).

(24) a. FOCP: Focus must be prosodically most prominent.
b. DAT: The indirect (DAT) object precedes the direct (ACC) object.
c. WRAP-XP: Each lexically headed XP must be contained inside a phonological phrase.
d. STRESS-XP: Each lexically headed XP must contain phrasal stress.
e. H-P: Align the right edge of each phonological phrase (pP) with its head x.
f. H-I: Align the right edge of each intonational phrase (iP) with its head x.

Let us now return to the Icelandic double object construction. I will look at each of the focus types in turn. Note that all candidates considered here satisfy FOCP. Tableau 3 illustrates the case of sentence focus. Candidates a) through f) represent the unmarked order, whereas candidates g) and h) represent the inverted order.

Tableau 3. Sentence focus; Icelandic

		DAT	STRESS-XP	H-I	H-P	WRAP-XP
a.	(x)iP (x) (x)pP Subj $_{VP}$[V IO DO]		*!			
b. ☞	(x)iP (x) (x)(x)pP Subj $_{VP}$[V IO DO]					*
c.	(x)iP (x) (x)pP Subj $_{VP}$[V IO DO]		*!		*	
d.	(x)iP (x) (x)(x)pP Subj $_{VP}$[V IO DO]			*!		*
e.	(x)iP (x) (x)pP Subj $_{VP}$[V IO DO]		*!	*		
f.	(x)iP (x) (x)(x)pP Subj $_{VP}$[V IO DO]			*!		*
g.	(x)iP (x) (x)pP Subj $_{VP}$[V DO IO]	*!	*			
h.	(x)iP (x) (x)(x)pP Subj $_{VP}$[V DO IO]	*!				*

Let us first look at the unmarked order. In candidates b), d) and f), the two objects are separated by a pP-boundary following the independent evidence from segmental variation (Dehé 2004). These candidates violate WRAP-XP which is outranked by STRESS-XP, leading to the sub-optimality of candidate a). Candidates c) through f) represent cases where the main accent falls within the focus domain, but not on the rightmost element. All these candidates are harmonically (h-) bounded by either the optimal candidate b) or the already suboptimal a) and deserve no further attention.[6] The two candidates in the unmarked order, g) and h), are ruled out since, compared to a) and b) respectively, they only add another violation to the constraint profile - that of DAT. They are thus h-bounded and should not occur under any ranking. Recall from Section 2 that for German the sub-optimality of the inverted order in wide focus contexts was predicted by Büring (2001).

The VP focus pattern behaves in pretty much the same way as the sentence focus pattern except that all candidates with nuclear accent on the subject are ruled out straightaway by FOCP. Candidate b) in Tableau 3 is the optimal candidate in wide focus contexts, here for both sentence and VP focus. Let us therefore proceed to the cases of DO focus and IO focus. Since no crucial difference in terms of accent types and placement was found between non-contrastive focus and the contrastive counterpart (Dehé 2004), I will treat the relevant patterns alike for the purpose of the analysis below. DO focus is illustrated in Tableau 4. Note that all candidates with nuclear accent on any other element than the DO are immediately ruled out by FOCP and are therefore ignored here.

[6] *Harmonic Bounding*: A candidate C1 is harmonically bounded (h-bounded) by another candidate C2 when C1 performs alike or worse than C2 on every constraint and strictly worse on at least one constraint. C1 can then never be optimal under any ranking. For instance, in the tableau above, candidate d) is h-bounded by candidate b) since they behave alike on DAT, STRESS-XP, H-P and WRAP-XP, but d) behaves worse on the remaining constraint H-I which it violates.

Tableau 4. DO focus / Contrastive DO focus; Icelandic

		DAT	STRESS-XP	H-I	H-P	WRAP-XP
a.	(x)iP (x) (x)pP Subj $_{VP}$[V IO DO]		*!			
b. ☞	(x)iP (x) (x)(x)pP Subj $_{VP}$[V IO DO]					*
c.	(x)iP (x) (x)pP Subj $_{VP}$[V DO IO]	*!	*		*	
d.	(x)iP (x) (x)(x)pP Subj $_{VP}$[V DO IO]	*!		*		*

Candidates a) and b) represent the unmarked order, whereas the inverted order is represented by candidates c) and d). As in the case of sentence focus above, the candidate with a pP-boundary between the two objects wins over the candidate that wraps the whole VP in one phonological phrase, thus suggesting the higher rank of STRESS-XP with respect to WRAP-XP. Also as before, the candidates representing the inverted order cannot be considered serious competitors since they are h-bounded. Candidate c) is h-bounded by candidate a), while d) is h-bounded by b). They should thus not occur under any ranking. This corresponds to Büring's (2001) findings for German. He concludes that the DAT>ACC order is the only possible order with DO focus in German since it is favoured by both DAT and the prosodic constraints. Similarly, in the tableau above, the inverted order only adds violations of both DAT and prosodic constraints to the constraint violations of the candidates in the unmarked order. The inverted order can therefore never be optimal in either language.

Let us now look at the case of IO focus, illustrated in Tableau 5. Note that in this case, the main accent must fall on the IO. All other candidates are immediately ruled out by FOCP.

Tableau 5. IO focus / Contrastive IO focus; Icelandic

		DAT	STRESS-XP	H-I	H-P	WRAP-XP
a.	(x)iP (x) (x)pP Subj $_{VP}$[V IO DO]		*!		*	
b. ☞	(x)iP (x) (x)(x)pP Subj $_{VP}$[V IO DO]			*		*
c.	(x)iP (x) (x)pP Subj $_{VP}$[V DO IO]	*!	*			
d.	(x)iP (x) (x)(x)pP Subj $_{VP}$[V DO IO]	*!				*

As before, candidates a) and b) represent the unmarked order, while the inverted order is represented by candidates c) and d). Candidate b), the unmarked order with a pP-boundary between the two objects, remains the optimal candidate. However, the difference between the previous cases and the case of IO focus lies in the behaviour of the competing candidates with respect to the prosodic constraints. In the case of IO focus, the main accent falls on the IO due to its discourse status. The optimal candidate therefore violates H-I in addition to the violation of WRAP-XP. The H-I-violation results from the fact that the head of iP which is (the most prominent element within) IO fails to be aligned with its right edge. There is one potential head position, the DO, which fails to project its stress as main accent onto the iP-level. The difference in optimality between the two candidates in the unmarked order, a) and b), can therefore no longer be explained in terms of the interaction between STRESS-XP and WRAP-XP. Rather, the competition between these two candidates suggests that in Icelandic, STRESS-XP must outrank H-I.

Let us now compare the optimal candidate b) with its inverted equivalent candidate d). Just like candidate b), candidate d) violates WRAP-XP due to the pP-boundary between the two objects. However, it behaves better than the optimal candidate on H-I. It does violate DAT, though, due to the inverted order. It follows then from this candidate that in Icelandic, the syntactic constraint DAT must outrank H-I, since otherwise candidate d) would win over candidate b) which would not correspond to the empirical facts.

Furthermore, for the sake of completeness, candidate c), which satisfies both alignment constraints H-I and H-P, is ruled out due to violations of both DAT and STRESS-XP which have both been shown to be on top of H-I.

The ranking for Icelandic as suggested by the patterns observed above is given in (25). Note that we do not have evidence for the ranking between H-I, H-P and

WRAP-XP or between DAT and STRESS-XP. However, we have established the ranking as follows:

(25) Final Ranking, Icelandic
DAT, STRESS-XP >> H-I, H-P, WRAP-XP

STRESS-XP must outrank WRAP-XP due to the pP-boundary between the two objects (cf. the discussions of Tableau 1, Tableau 3 and Tableau 4 above). It must also outrank H-I (cf. the discussion of Tableau 5).

We also know from the discussion of Tableau 5 that DAT must outrank H-I since otherwise the inverted order would win over the unmarked order in the case of IO focus.

Let us now compare Icelandic to German. Recall from the previous sections that the two languages differ with respect to IO focus. While German allows the marked (ACC>DAT) order when the DAT-IO is focused, Icelandic does not. How can we account for this difference? Büring (2001) argues in favour of a constraint tie between DAT and the prosodic constraints he employs, based on the fact that in the case of IO focus, DAT favours the unmarked DAT>ACC order, whereas the prosodic constraints favour the marked ACC>DAT order resulting in rightmost stress. Samek-Lodovici (to appear) in his discussion of the complement/adjunct asymmetry in German established the ranking of the prosodic constraints for this language as in (26). Both WRAP-XP and STRESS-XP must outrank H-P. The ranking between STRESS-XP and H-P was also confirmed in work on particle verb constructions (Dehé, to appear).

(26) Ranking the prosodic constraints, German
WRAP-XP, STRESS-XP >> H-P

However, to the best of my knowledge, the exact ranking between STRESS-XP and WRAP-XP and between H-I and H-P has not yet been specified for German. As will become obvious immediately, this ranking decides on whether or not there is a pP-phrase boundary between the two objects. Including DAT into the picture and assuming identical candidates for both Icelandic and German, the tableaux below suggest a constraint tie between DAT and one of the alignment constraints, H-P or H-I, for German.

Tableau 6. IO focus / Contrastive IO focus; German

		WRAP-XP	STRESS-XP	DAT	H-P	H-I
a. ☞	(x --)iP (x) (x)pP Subj $_{VP}$[V IO DO]		*		*	
b.	(x --)iP (x) (x)(x)pP Subj $_{VP}$[V IO DO]	*!				*
c. ☞	(x)iP (x) (x)pP Subj $_{VP}$[V DO IO]		*	*		
d.	(x)iP (x) (x)(x)pP Subj $_{VP}$[V DO IO]	*!		*		

Tableau 6 assumes that WRAP-XP outranks STRESS-XP in German. Under this ranking, candidates b) and d) are outperformed on WRAP-XP. The remaining candidates a) and c) behave alike on WRAP-XP which they both satisfy, and on STRESS-XP which they both violate. In addition, candidate c) violates DAT, while candidate a) violates H-P. A constraint tie between DAT and H-P yields the desired result: two equally optimal candidates. Notice that under this ranking, there is no pP-boundary between the two objects in either of the winning candidates. Consider now the ranking in Tableau 7, where STRESS-XP outranks WRAP-XP.

Tableau 7. IO focus / Contrastive IO focus; German

		STRESS-XP	WRAP-XP	DAT	H-I	H-P
a.	(x --)iP (x) (x)pP Subj $_{VP}$[V IO DO]	*!				*
b. ☞	(x --)iP (x) (x)(x)pP Subj $_{VP}$[V IO DO]		*		*	
c.	(x)iP (x) (x)pP Subj $_{VP}$[V DO IO]	*!		*		
d. ☞	(x)iP (x) (x)(x)pP Subj $_{VP}$[V DO IO]		*	*		

Here, the candidates that fail to insert a pP-boundary between the two objects are outperformed on STRESS-XP. Under the assumption that DAT and H-I are tied candidates b) and d) are equally optimal.

Both rankings, WRAP-XP >> STRESS-XP and STRESS-XP >> WRAP-XP, yield the desired result with respect to word order: Under IO focus in German, both the

unmarked IO>DO order and the marked DO>IO order are possible, and the focused IO is most prominent in both cases. Whereas the unmarked order indicates focus by relocating the main stress from the rightmost position to the position of the IO, in the marked order the focused IO is placed in a position where it can receive rightmost stress. The difference between the two rankings in Tableau 6 and Tableau 7 is related to a difference in prosodic phrasing, i.e. to the question of whether or not there is a pP-phrase boundary between the two objects. Clearly, this is a question that requires independent evidence.

Recall from the discussion of Icelandic that variations in constraint ranking between the languages do not affect any of the other focus patterns such as DO focus and sentence focus with respect to word order since in these cases, the inverted order was predicted to be impossible across languages due to h-bounding.

Finally, notice also that unfocused pronominal objects are a different matter in both languages, Icelandic and German, since they are not potential prosodic heads. Their behaviour on at least the prosodic alignment constraints is therefore quite different from the behaviour of full noun phrases.

5. Summary and conclusion

I have shown in the preceding sections that the order of the objects in Icelandic double object constructions is much more restricted than one would expect. The unmarked order is by far the preferred one even in contexts where the inverted order is expected to be equally acceptable such as IO focus. We must therefore assume that Icelandic makes use of prosody rather than word order to indicate focus structure. More precisely, rather than using the inverted order DO(ACC)>IO(DAT) in order to place the focused element in a position where it can receive rightmost stress, the main stress is relocated from its rightmost to an earlier position, while the element in the rightmost position, the DO, is destressed. In this respect, Icelandic differs from German which allows both operations. It has been argued that both word order variation and stress shift can be used in order to indicate IO focus in German double object constructions.

These facts were accounted for along the lines of the interaction between prosodic and syntactic constraints. In Icelandic, the syntactic DAT constraint which favours the unmarked IO>DO order crucially outranks the prosodic alignment constraints H-I and H-P, whereas in German one could argue in favour of a constraint tie.

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