

# The force of lexical case: German and Icelandic compared

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## 1. Introduction<sup>1</sup>

Modern German (G) and Modern Icelandic (I) resemble each other in many ways. They have similar classes of lexically marked verbs (often referred to as verbs with quirky case arguments): all case patterns found in German are also attested in Icelandic, but in addition, Icelandic exhibits a few case patterns not found in German – the latter patterns are not considered here. The examples in (1) illustrate a NOM-DAT verb, which deviates from the canonical transitive NOM-ACC pattern. The Dative in this instance is assumed to be lexically marked. German and Icelandic furthermore share the property that the finite verb exclusively agrees with Nominative arguments. The examples in (2) illustrate that lexically marked case is preserved in the passive, and that default agreement features (3sg, henceforth U) appear on the auxiliary if the only argument remaining in the passive is non-Nominative.

- (1) a. G Er half mir.  
b. I Hann hjálpaði mér.  
He.NOM helped.3sg I.DAT

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- (2) a. G Mir wurde geholfen.  
 b. I Mér var hjálpað.  
     I.DAT AUX.3sg helped.PART  
 ‘I was helped’

However, if the clauses in (2) are embedded into certain syntactic contexts, German and Icelandic behave differently. For instance, a clause with a lexically marked argument can be embedded under a control verb in Icelandic, but not in German, as shown in (3).

- (3) Control  
 a. G \*Ich           hoffe geholfen zu werden.  
     I.NOM       hope helped to AUX  
 b. I Ég           vonast til að verða hjálpað.  
     I.NOM       hope       for to AUX helped  
 ‘I hope to be helped’

The possibility of being controlled is one of the subject diagnostics used in the literature. On the basis of a number of tests, quirky case arguments of Icelandic have been shown to be potential subjects, while those of German are not (Andrews 1982, Zaenen, Maling & Thráinsson 1985). In other words, the Dative argument in (2b) is subject, while the Dative argument in (2a) is *not*. The distribution in (3) then follows from the assumption that only subjects can be controlled. An alternative way to capture this distribution is the assumption that visibility of lexical case ranks relatively high in German, but relatively low in Icelandic:<sup>2</sup>

- (4) MAX(lexF): Lexical case features are visible in the output. (Visibility)

Another phenomenon in which German and Icelandic differ is argument deletion in coordination. (5) illustrates a case in which an intransitive verb (with Nominative subject) is coordinated with an inverted DAT-NOM verb (where the higher argument is lexically marked for Dative, and the lower one is realized by Nominative). Here, the DP occurring in the first position of the second clause can be deleted if it is coreferential with the corresponding DP of the first clause. As predicted by the respective ranking of MAX (lexF), German fails to delete the lexically marked argument, whereas Icelandic allows this.

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<sup>2</sup> MAX(lexF) is a faithfulness constraint in the sense of Correspondence Theory (McCarthy & Prince 1995). I discuss further below the question of what exactly constitutes the input; at least, lexical features are part of the input. A similar constraint is assumed by Woolford (to appear).

(5) Coordination

- a. G \***Er** sagt von sich fleißig zu sein,  
 he.NOM says of himself diligent to be,  
 aber ~~ihm~~ käme die Aufgabe zu schwer vor.  
 but ~~he-DAT~~ find.CONJ the task.NOM too hard PT
- b. I **Hann** segist vera duglegur,  
 he.NOM says-self be diligent,  
 en ~~honum~~ finnst verkefnið of þungt.  
 but ~~he-DAT~~ finds the homework too hard  
 ‘He says to be diligent, but finds the homework too hard’

If, in contrast, the two Nominative arguments are coreferential, German allows the lower argument to move to the preverbal position, where it can be deleted if it is identical in case, as in (6a), whereas Icelandic does not allow the NOM-argument in a preverbal position in such a case.

- (6) a. G **Er** sagt von sich fleißig zu sein,  
 he says of himself diligent to be,  
 \*aber mir kommt ~~er~~ doch eher faul vor.  
 but I.DAT find ~~he-NOM~~ but rather lazy PT  
 aber ~~er~~ kommt mir doch eher faul vor.  
 but ~~he-NOM~~ find I.DAT but rather lazy PT
- c. I \***Hann** segist vera duglegur, \*en mér finnst ~~hann~~ latur.  
 he.NOM says-self be diligent, but I.DAT find ~~he-NOM~~ lazy  
 \*en ~~hann~~ finnst mér latur.  
 but ~~he-NOM~~ find I.DAT lazy  
 ‘He says to be diligent, but I find [him] lazy’

Thus, there seems to be another property according to which German and Icelandic differ. Let us assume that the unmarked order of arguments reflects their semantic ranking:<sup>3</sup>

- (7) SEMHIER(ARCHY): The linear order of arguments corresponds to their semantic ranking (with the highest argument leftmost).

How do we know the semantic ranking of arguments? Several tests have been proposed in the literature that are sensitive to semantic ranking, among them the Barss & Lasnik (1986) tests, which comprise anaphoric binding, bound pronouns, weak crossover, multiple questions, and the occurrence of negative polarity items. Not all of these tests are decisive in the languages under question (see Frey 1993 for German), but there is good reason to believe that the semantic ranking of arguments can be established for all verbs in every language. In the following, I will assume that for each indi-

<sup>3</sup> In a framework in which the input is conceived of as a syntactic deep structure, SEMHIER can be replaced by a constraint called PARALLEL MOVEMENT (Müller to appear).

vidual verb the semantic ranking of arguments is known, and that consequently, their basic linear order is determined. Every movement of arguments gives rise to a violation of SEMHIER. The distributions in (5) and (6) then suggest the following rankings: MAX(lexF) » SEMHIER for German, but SEMHIER » MAX(lexF) for Icelandic. If MAX(lexF) ranks high, ignoring lexical case leads to ungrammaticality as in (5a), but if it ranks low, ignoring lexical case can be tolerated as in (5b).

The inverted DAT-NOM verbs, illustrated in the second clauses of (5) and (6), are interesting for several reasons. If these verbs are embedded under a control verb, German only allows to control the lower argument, which is Nominative (8a), whereas Icelandic only allows to control the higher argument, which is Dative (8b). Therefore, (8a) and (8b) have different readings.

## (8) Control

- a. G Ich hoffe, ihm –<sub>NOM</sub> zu gefallen.  
I hope he.DAT –<sub>NOM</sub> to like  
'I hope to please him/to be liked by him'
- b. I Ég vonast til að –<sub>DAT</sub> líka ??hann/ ?thessi bók.  
I hope for to –<sub>DAT</sub> like he.NOM/ this book.NOM  
'I hope to like him/this book'

If, however, these verbs are embedded into a raising-to-object construction, German requires the lower argument to raise, which must get Accusative by the matrix verb to render the construction grammatical (though some speakers find (9a) only marginally acceptable). In contrast, Icelandic only allows for raising of the higher argument, even if it is Dative (and remains so in the passive), whereas the lower argument obligatorily stays in the Nominative, see (9b,c) and the passive in (9d).

## (9) Raising to object

- a. G ?Ich sah ihm den Film gefallen.  
I saw he.DAT the film.ACC like  
'I saw him like the film'
- b. I Ég tel henni líka thessi bók.  
I believe her.DAT like this book.NOM  
'I believe her to like this book'
- c. I Ég tel henni hafa alltaf þótt Ólafur leiðinlegur.  
I believe her.DAT have always thought Olaf.NOM boring.NOM  
'I believe her always to have found Olaf boring' (ZMT 101)
- d. I Henni er talið hafa alltaf þótt Ólafur leiðinlegur.  
her.DAT is believed.U have always thought Olaf.NOM boring.NOM  
'She is believed always to have found Olaf boring'

These constructions pose several problems for a syntactic approach to control and raising: (i) Since in Icelandic, the missing argument of a control construction can be the one marked for lexical case, even in the presence of a Nominative argument, one has to assume that PRO relates to the highest argument of the embedded verb. However, the German data show that PRO may relate to a non-highest argument of the embedded verb. (ii) The fact that an infinitive clause of Icelandic may contain a Nominative argument (although this is the argument that can agree with the finite verb) shows that assignment of Nominative is independent of the existence of agreement. (iii) The German data suggest that multiple raising is possible, because the Dative argument in (9a) cannot be considered to be part of the infinitive clause. Moreover, the exceptional-case-marking account (ECM), claiming that the 'raised' argument gets structural case from the matrix verb, does not work for the Icelandic examples in which the raised argument is lexically marked for case.

In this paper, I will pursue a lexical account of these data, implemented in the framework of OT. My basic assumptions are the following: (i) The properties of the control and the raising-to-object constructions are fully determined by the lexical representations of the involved verbs, in combination with a set of general syntactic constraints. (ii) The differences between German and Icelandic follow from different constraint rankings.

For descriptive purposes, the main differences between German and Icelandic in the constructions considered so far (control, coordination, and raising to object) can be captured by the following generalization (which is uncontroversial in the literature):

- (10) In German, the Nominative argument is subject, whereas in Icelandic, the semantically highest argument is subject.

If one conceives of Universal Grammar (UG) as a set of unfixed parameters, (10) describes a different setting of parameters. However, there are certain facts that render such a parameter account problematic:<sup>4</sup> (i) Why is the default order of arguments in German determined by semantic ranking,

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<sup>4</sup> To put it differently: Agreement seems to be a good subject criterion for German, but if one applies this criterion to Icelandic, this language turns out to have split subjects. All tests for semantic ranking seem to be good subject criteria for Icelandic, but if one applies them to German, this language turns out to have split subjects, too, but differently from Icelandic (see also Seefranz-Montag 1983:165-167). The problem of the notion of subject has first been noted by Keenan (1976) and has extensively been discussed in the literature on Austronesian languages such as Tagalog (see Schachter 1976, Kroeger 1993, among others). Furthermore, the distinction between 'syntactic ergativity' (where the NOM-argument is the pivot in syntactic constructions, as in Dyirbal) and 'morphological ergativity' (where also the highest argument can be the pivot in syntactic constructions, as in Walmatjari), stated by Dixon (1994:160, 172), exactly points to the fact that for many languages, there is no unique notion of subject.

and not by the choice of subject? (ii) On the other hand, why is agreement in Icelandic determined by Nominative, and not by the choice of subject? (iii) What is the relationship between the parameter selection in (10) and other properties, such as visibility of lexical case in German, and the fixed order of arguments in Icelandic? (iv) How does a matrix verb determine that the subject of a dependent verb is either unexpressed or raised?

These problems indicate that the notion of subject, though it may be descriptively adequate, does not have much explanatory force. The generalization in (10) does not seem to describe an UG option, but may rather follow from other options.

I will claim in the following that both German and Icelandic exhibit a number of grammatical constructions that require a choice among the arguments of a verb. (1) The agreement morphology on the finite verb calls for a correspondent among the arguments of the verb. (2) The syntax of Icelandic requires a designated argument in the preverbal position, contrary to German, which does not have such a position; so the necessity of having a notion of 'subject' in positional terms may differ from language to language. (3) For a passive verb of Icelandic, both the agreeing argument and the designated argument have to be determined. (4) Under the assumption that infinitive clauses, when they appear in control or raising constructions, cannot express a full proposition, one argument has to be banned from the infinitive clause.

I assume that for each of these phenomena two alternative options are available: either the semantically highest argument (HIGH) or the argument that bears the least-marked morphological case (NOM) is selected. In all canonical verbs, the highest argument and the Nominative argument coincide. A conflict between the two options can only arise in the passive of ditransitive verbs and in the inverted DAT-NOM verbs, where the Nominative argument is not the highest one.

The generalization made in this proposal is the claim that the notions of HIGH and NOM are sufficient to replace the undifferentiated notion of (underlying) subject. In a way, HIGH is the subject in semantic terms, and NOM is the subject in morphological terms. In the syntax, then, either one can be selected, where this can depend on the type of construction. Each construction type (regardless of the number of languages in which it is manifest) is determined by several constraints, including a pair of constraints with regard to HIGH and NOM. In order to belong to UG, constraints have to be specified in more general terms, but some of them may be instantiated (or contextualized) in view of the particular options made otherwise in the language. Most of the restrictions I will explicate in this study have always been assumed to be relevant, although they never have been articulated as violable constraints.

Let us consider one pair of constraints that regulate the way in which infinitive clauses are embedded (thus generalizing about control and raising constructions, among others): (i) \*HIGH-INF (a subcase of SEM HIER): The semantically highest argument is banned from the infinitive clause. (ii) \*NOM-INF: The Nominative argument is banned from the infinitive clause. I will claim that both constraints belong to UG, but can be ranked differently with respect to each other. German follows the ranking \*NOM-INF » SEMHIER (thereby inducing multiple raising in certain instances), while Icelandic follows the reverse ranking SEMHIER » \*NOM-INF (allowing Nominative in infinitive clauses). These two rankings thus express one aspect of the generalization in (10) without using the notion of subject.

The constraints SEMHIER and \*NOM-INF conspire with MAX(lexF), introduced above, in several interesting ways. If SEMHIER is the dominating constraint (Icelandic), MAX(lexF) should play a less important role than in the reverse case (German). But if \*NOM-INF is the dominating constraint (German), the relevant argument role should be identified irrespective of its placement and its semantic ranking; in this case, MAX(lexF) should play a more important role than in the reverse case (Icelandic).

Therefore, I suggest the following constraint rankings:

- (11) a. German: \*Nom-Inf, Max(lexF) » SemHier  
 b. Icelandic: SemHier » \*Nom-Inf, Max(lexF)

In the remainder of this paper, I will substantiate these proposals. Section 2 considers the clause-internal syntax, section 3 the control construction, and section 4 the raising-to-object construction. A major claim behind these considerations is that the syntax is driven by lexical properties, as well as by violable structure-building constraints.

## 2. Case assignment, designated argument, agreement, and passive

### 2.1 Canonical case assignment

Lexical Decompositional Grammar (LDG; Joppen & Wunderlich 1995, Wunderlich 1997, Kaufmann & Wunderlich 1998, Stiebels 1999, 2000, Wunderlich 2000a, Wunderlich & Lakämper 2000) accounts for all case marking in a principled way. Following ideas of Kiparsky (1992), LDG predicts that canonical case assignment conforms to the semantic ranking of arguments: a medial argument is realized by Dative, the lowest argument by Accusative, and the highest argument by Nominative. (Alternatively, the highest argument is realized by Ergative, and the lowest argument by Nominative.) The basic architecture for case marking is as follows:

- (i) In the theta-structure of a verb, the  $\lambda$ -abstractors for argument variables are ordered according to their semantic ranking, with the lowest argument to the left and the highest argument to the right.
- (ii) All theta-roles are associated with abstract case features, where [+hr] means ‘there is a higher argument’, and [+lr] means ‘there is a lower argument’.<sup>5</sup>
- (iii) The structural morphological cases are defined in terms of the same features, with Dative = [+hr,+lr], Accusative = [+hr], Ergative = [+lr], and Nominative = [ ] (the default case).

A typical canonical ditransitive verb is *zeigen* ‘show’, represented in (12b):

- (12) a. als Peter dem Touristen den Dom zeigte  
 when Peter the.DAT tourist the.ACC cathedral showed
- b.  $\lambda z$      $\lambda y$      $\lambda x$     {ACT(x) & SEE(y,z)}  
 +hr    +hr    -hr  
 -lr    +lr    +lr

A theta-structure such as the one in (12b), then, forms the input for case assignment.<sup>6</sup> The selection of morphological case is determined by general faithfulness and markedness constraints regarding the features [+hr] and [+lr]. In an ACC-language, the feature [+hr] is favored by the order MAX(+hr)  $\gg$  \*[+hr], and the feature [+lr] is disfavored by the order \*[+lr]  $\gg$  MAX(+lr); the reverse holds for an ERG-language. Some additional constraints are necessary to derive all possible case patterns, including those that are lexically determined (Stiebels 2000, Wunderlich 2000b):

- (13) a. MAX(lexF): Every lexically assigned feature in the input has a correspondent in the output.
- b. DEFAULT: Every linking domain displays the default linker (Nominative).
- c. UNIQUENESS: Each linker applies only once in a domain.
- d. MAX(+hr,+lr): Every feature combination [+hr,+lr] in the input has a correspondent in the output.

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<sup>5</sup> LDG deviates from Kiparsky’s proposals mainly for reasons of markedness. Kiparsky’s [+HR] ‘the highest role’ is equivalent to [-hr] in LDG, and his [+LR] ‘the lowest role’ is equivalent to [-lr]. In Kiparsky’s account, the intransitive subject is the most marked ([+HR,+LR]), while it is least marked in LDG ([-hr,-lr]). Complementary, the medial argument of ditransitive verbs is the least marked ([-HR,-LR]) in Kiparsky’s system, while it is most marked in LDG ([+hr,+lr]). Consequently, the morphological cases are marked for negative features in Kiparsky’s system, but for positive features in LDG. (See also Kiparsky 2000.)

<sup>6</sup> This concept of input is similar to that of Grimshaw (1997), who considered a predicate-argument structure with an identical Logical Form to constitute the input.



MAX(lexF), already introduced above, is needed to account for lexical marking. DEFAULT is motivated by the assumption of economy: Every case pattern should be realized by minimal effort, so it should include the default form of a NP. UNIQUENESS serves to avoid ambiguity: If two positions in a case pattern are realized identically, it is hard to distinguish the arguments, unless the sortal restrictions imposed by the verb or the syntactic positions of the arguments function as discriminating factors. Finally, MAX(+hr,+lr), a local conjunction in the sense of Smolensky (1995), reflects the requirement that all maximally marked theta-roles should be visible. For reasons of logic, this constraint must rank above both individual MAX constraints.

(14) illustrates that the case pattern NOM-DAT-ACC turns out to be optimal for a ditransitive verb. This holds for German as well as for Icelandic; consequently, the constraint ranking is the same in these two languages.<sup>7</sup>

(14) Ditransitive verbs in a DAT/ACC system

	x	y	z	MAX (lexF)	DEF	UNIQUENESS	MAX (+hr,+lr)	MAX (+hr)	*[+lr]	MAX (+lr)	*[+hr]
☞	NOM	DAT	ACC						*	*	**
	NOM	ACC	ACC			*!	*			**	**
	NOM	ACC	NOM			*!	*	*		**	*
	NOM	NOM	ACC			*!	*	*		**	*
	NOM	NOM	NOM			**!	*	**		**	

Turning to passive, I assume that a verb can only passivize if the highest role is agentive and not lexically marked. Under the assumptions of LDG, passive is a lexical rule that binds the (agentive) [-hr] role existentially and thus removes it from the theta-structure. More specifically, one can assume that in both German and Icelandic, this rule operates on participles, although nothing hinges on this assumption. The theta-structure of the participle is then reduced, as shown in (15), so that only two arguments are left for case assignment. (16) shows that DAT-NOM is the optimal case pattern.

- (15) *gezeigt/ sýnd* ‘shown’ [+part,+pass]:  
 $\lambda z \lambda y \exists x \{ACT(x) \ \& \ SEE(y,z)\}$   
 +hr +hr  
 -lr +lr  
 NOM DAT

<sup>7</sup> The actual ranking in (14) can only be determined if all case patterns of German and Icelandic are considered. Both UNIQUENESS and MAX(+hr,+lr) would suffice to exclude all candidates but the first one in (14); that both constraints are necessary cannot be shown on the basis of just one type of verb. In Wunderlich (2000c), I argue that German and Icelandic do not differ with respect to case assignment, that is, the constraints used in (14) are ranked alike for these two languages.

## (16) Passive of ditransitive verbs in a DAT/ACC system

		MAX (lexF)	DEF ! UNIQ	MAX (+hr,+lr)	MAX ! *[+lr] (+hr)	MAX ! *[+lr] (+lr)
	y z					
☞	DAT NOM				* ! *	* ! *
	DAT ACC		* !		* ! *	* ! **
	ACC ACC		* ! * *	*		* ! **
	NOM ACC			* !	* ! *	* ! *
	ACC NOM			* !	* ! *	* ! *
	NOM NOM			* !	* ! **	* ! *

Observe that DEFAULT is responsible for the occurrence of Nominative in the passive, and that MAX(+hr,+lr) ensures that the medial argument is still realized by Dative. This, again, is true of both German and Icelandic.

## 2.2 Lexical case

All instances of lexical case deviate from this canonical case assignment, often for conceptual reasons (Wunderlich 1997, among others). For instance, Dative for the highest argument often correlates with experiencer subjects. In terms of LDG, a semantically highest argument may be lexically marked by the feature [+hr], and becomes non-highest in terms of case-marking, while a semantically lowest argument can be marked by [+lr], and becomes non-lowest in terms of case-marking. Verbs with the highest argument being lexically marked can never be passivized; this might be explained semantically, but also follows from MAX(lexF). By contrast, verbs with the lowest argument being lexically marked often can be passivized, but preserve the lexical case in the passive. Examples of the passive of two-place verbs whose lowest argument is marked for Dative or Genitive are given in (17) for German, and in (18) for Icelandic. In the following, Genitive-marked verbs are neglected because they behave somewhat differently from Dative-marked verbs.<sup>8</sup>

## (17) German

- a. Den Männern wurde gefolgt.  
the men.PL.DAT was.U followed.PART
- b. Der Verstorbenen wurde gedacht.  
the dead.pl.GEN was.U remembered.PART

## (18) Icelandic

- a. Mönnunum var bjargað.  
the men.mpl.DAT was.U saved.SUP

<sup>8</sup> Note that MAX(+hr,+lr) would suffice to preserve Dative in the passive. In order to also preserve Genitive, MAX(lexF) is necessary.

- b. Sjúklinganna var vitjað.  
 the patients.mpl.GEN was.U visited.SUP (Andrews  
 170)

(19) shows Accusative-marked intransitive verbs, and (20) shows inverted DAT-NOM verbs, already considered in the introduction. These verbs cannot be passivized.

- (19) a. G Mich dürstet.  
 me.ACC be.thirsty  
 b. I Bátana hefur brotið i spón.  
 the boats.ACC has.U broken.U in pieces  
 ‘The boats have broken into pieces’ (Zaenen/Maling 145)
- (20) a. G Mir sind sie immer langweilig vorgekommen.  
 I.DAT are they.NOM always boring found  
 b. I Mér hefur/hafa alltaf þott þeir leiðinlegir.  
 I.DAT has.U /have.3pl always thought they.NOM boring.NOM  
 ‘I have always found them boring’

The Dative-marked verbs in (17) and (18) are described by the lexical feature [+lr]; if it is combined with the default feature [+hr] for the semantically lowest argument, the case that associates with the relevant argument is Dative, as shown in (21a). By contrast, for the verbs in (19) and (20) the lexical feature [+hr] is used. No further argument role is present in (19), so in this case the argument role is matched best with Accusative, as shown in (21b). In the inverted DAT-NOM verbs in (20), the lexical feature [+hr] is combined with the default feature [-lr] for the semantically highest argument, so in this case the relevant argument role is again matched with Dative, as in (21c).

(21) a.	NOM-DAT verbs	b. ACC-verbs	c. Inverted verbs
	$\lambda y \lambda x \text{ VERB}(x,y)$	$\lambda x \text{ VERB}(x)$	$\lambda y \lambda x \text{ VERB}(x,y)$
lexical:	+lr	+hr	+hr
default:	+lr		+hr
	+hr -hr		-lr +lr
case:	DAT NOM	ACC	NOM DAT

That the annotated case distribution is indeed the optimal one is shown in (22), with the same constraint ranking as before.<sup>9</sup>

<sup>9</sup> It is obvious that some constraints are irrelevant for a specific type of verbs. I have included all constraints in order to illustrate that there is one consistent constraint ranking that is responsible for all case patterns occurring with any type of verbs.

(22) The optimal case patterns for some lexically marked verbs<sup>10</sup>

a.	NOM-DAT verbs	MAX (lexF)	DEF	UNIQU	MAX (+hr, +lr)	MAX ! * [+lr]	MAX ! * [+hr]
	x y						
☞	NOM DAT					*	* *
	NOM ACC	*!			*		** *
b.	ACC-verbs						
	x						
☞	ACC		*				*
	NOM	*!			*		
c.	Inverted verbs						
	x y						
☞	DAT NOM				*	*	*
	DAT ACC		*!			*	**
	ACC ACC			*!	*		* **
	NOM ACC	*!			*	*	* *

All other types of lexical marking, occurring in either German or Icelandic, can be described by the same means. However, I will not go into more details here.

### 2.3 Designated arguments

V is final in the VP of German, but initial in the VP of Icelandic. Likewise, I is final in the IP of German, but initial in the IP of Icelandic. German does not need to fill a SpecI position in the subordinate clause, because this position could only be vacuously distinguished from a SpecV position; therefore, I assume (following Haider 1988) that German has a matched I/VP projection. In the main clause of German, the inflected verb is realized in C; here, SpecC can be filled by any XP, regardless of its status as argument or adjunct. In contrast, Icelandic exhibits the same minimal IP structure in both subordinate and main clauses (see also Rögnvaldsson & Thráinsson 1990), and SpecI has to be filled. I call the argument that is realized in SpecI ‘designated’. In a way, the syntax of Icelandic is more ‘articulated’ than that of German, because of the different positions of V and I. Subordinate clauses are illustrated in (23), main clauses in (24).

- (23) a. G [C<sub>i</sub> daß [I/VP<sub>i</sub> ich Maria nie getroffen<sub>v</sub> habe<sub>i</sub> ]]  
 b. I [C<sub>i</sub> að [IP<sub>i</sub> ég [I<sub>i</sub> hef [VP<sub>i</sub> aldri hitt Maríu ]]]]  
 ‘that I have never met Mary’

<sup>10</sup> Woolford (to appear) arrives at a similar result with a different set of constraints. Note that Woolford does not factorize the Dative into two features, which, however, allows a more detailed analysis for other types of case patterns (Stiebels 2000, Wunderlich 2000b).

- (24) a. G [CP Ich [C habe [I/VP Maria nie getroffen<sub>V</sub> – ]]]  
 b. I [IP Ég [I hef [VP aldrei hitt Maríu ]]]  
 ‘I have never met Mary’

Both (23) and (24) display the basic word order, in accordance with SEMHIER, requiring that the linear order of arguments corresponds to their semantic ranking. German allows scrambling within the subordinate clause, whereas Icelandic does not. Since in Icelandic SpecI is filled by the designated argument, there is no place for another argument.

In the main clause, both languages allow object topicalization with a resulting CP, thereby violating SEMHIER. In German, it is simply the object that fills SpecC, whereas in Icelandic, a more complex structure arises through object movement, as shown in (25).

- (25) a. G [CP Maria [C habe [I/VP ich – nie getroffen<sub>V</sub> – ]]]  
 b. I [CP Maríu [C hef [IP ég [I – [VP aldrei hitt ]]]]]  
 ‘Maria, I have never met’

The projections with passive participles differ similarly:

- (26) a. G [C daß [I/VP mir geholfen wurde] (subordinate clause)  
 b. G [CP Mir [C wurde [I/VP geholfen – ]]] (main clause)  
 c. I [IP Mér [I var [VP hjálpað]]]  
 ‘I am helped’

The fact that the syntax of Icelandic requires a designated argument to fill the SpecI position, whereas German does not, correlates with another difference between German and Icelandic: German has only one option for the passive of ditransitive verbs, whereas Icelandic has two.

#### 2.4 DAT-NOM patterns in Icelandic

It has been argued in the literature that the inverted DAT-NOM verbs are the ‘unaccusative’ counterpart of the passive of canonical ditransitives (Fanselow 2000): the former lack an ‘external’ argument, while the latter have the ‘external’ argument existentially bound; otherwise, these two classes of verbs have the same theta-structure, hence they map to the same case pattern. This argumentation goes through for German. In Icelandic, however, these two classes of verbs behave differently.

First, Icelandic allows two ways of passive formation of a ditransitive verb, as illustrated in (27) (taken from Andrews 1976/1990:179).

- (27) a. Honum voru sýndir drengirnir.  
 him.msg.DAT were.3pl shown.mpl.NOM the boys.mpl.NOM  
 b. Drengirnir voru sýndir honum.  
 the boys.mpl.NOM were.3pl shown.mpl.NOM him.msg.DAT

The sentences in (27) exhibit different arguments in SpecI: in (27a), *honum* is in SpecI, whereas in (27b), *drengirnir* is in SpecI. If these sentences are embedded under an object raising verb such as *telja* ‘believe’, it is always the element in SpecI that is raised. Hence a crucial difference of the two passive variants arises in the context of raising to object. The Dative subject remains unchanged, as shown in (28a), while the Nominative subject becomes Accusative, as shown in (28b).

- (28) a. *Ég tel honum hafa verið sýndir drengirnir.*  
I believe him.DAT (to) have been shown.NOM the boys.NOM  
b. *Ég tel drengina hafa verið sýnda honum.*  
I believe the boys.ACC (to) have been shown.ACC to him.DAT  
(Andrews 180)

It follows, then, that in the passive of a ditransitive verb either the next-to-highest argument or the Nominative argument is designated. The only other verbs in which a Nominative argument differs from the highest one are the inverted DAT-NOM verbs; however, in these verbs only the highest argument (Dative) is designated, as shown by the ungrammaticality of (29b).

- (29) a. *Ég tel henni hafa alltaf líkað drengirnir.*  
I believe her.DAT have always liked the boys.NOM  
‘I believe her to have always liked the boys’  
b. \* *Ég tel drengina hafa alltaf líkað henni.*  
I believe the boys.ACC (to) have always pleased her.DAT

Such a difference between the two types of DAT-NOM patterns does not occur in German because here the Nominative argument is always changed to Accusative in the context of raising to object (see section 4.1 below).

Another difference between the passive of ditransitives and the inverted DAT-NOM verbs is found with respect to agreement. Generally speaking, both German and Icelandic follow the rule that the finite verb agrees with the argument realized in the Nominative (AGRNOM); if there is no Nominative argument, the verb gets the default marking U=3sg. This is also true of the Icelandic passives of ditransitives, illustrated in (27) above. However, the inverted DAT-NOM verbs allow for two options: agreement with the Nominative argument or the default marking, as shown in (20b), repeated here as (30).<sup>11</sup>

- (30) *Mér hefur/hafa alltaf þott þeir leiðinlegir.*  
I.DAT has.U /have.3pl always thought they.NOM boring.NOM

This different behavior of the two classes of verbs is summarized in (31).

<sup>11</sup> Some speakers seem to always prefer agreement with the Nominative argument.

(31)

	Designated Argument	Agreement
Passive of ditransitive verbs	DAT/NOM	NOM
Inverted DAT-NOM verbs	DAT	NOM/U

This difference can be accounted for by the following assumptions :

- (i) Icelandic inverted DAT-NOM verbs designate the higher argument with the feature [+hr], and, simultaneously (as opposed to German), the lower argument with the feature [-hr], so that the resulting Nominative argument is lexically marked. (This kind of Nominative has been called ‘oblique’ in the literature.)<sup>12</sup>
- (ii) The designated argument (to be realized in SpecI) is either the highest argument or the Nominative argument, but never a lexically marked Nominative.
  - a. DESHIGH (which is a subcase of SEMHIER): The highest argument is designated – this allows to preserve the underlying order of arguments.
  - b. DESNOM: The Nominative argument is designated – this allows the agreement relation to hold between the element in I and the element in SpecI.
  - c. \*DESLEXNOM: A lexically marked Nominative argument cannot be designated.
- (iii) Besides the requirement that the verb agrees with the Nominative (AGRNOM), there exist two prohibitions against agreement (which are both satisfied in German):
  - a. \*AGRNONOM: The finite verb does not agree with any argument other than the Nominative.
  - b. \*AGRLEXF: The finite verb does not agree with any argument associated with a lexical feature.

The tableaux in (32) show how the designated argument is selected, and the tableaux in (33) show how the agreement facts come about.

(32) Optional vs. obligatory designation of the highest argument:

a.	Passive of ditransitive verbs	DESHIGH	DESNOM	*DESLEXNOM
☞	(27a): [IP DAT ... [VP ... NOM		*	
☞	(27b): [IP NOM ... [VP ... DAT	*		
b.	Inverted DAT-NOM verbs			
☞	[IP DAT ... [VP ... NOM		*	
	[IP NOM ... [VP ... DAT	*		*!

<sup>12</sup> There are other verbs of Icelandic with both arguments being lexically marked, for instance, *vanta* ‘lack’, which shows an ACC-ACC or DAT-ACC pattern (Yip, Maling & Jackendoff 1987).

If all three DES constraints are equally ranked, two equally good options arise for the passive of ditransitives, whereas the designation of the Nominative argument leads to more violations when the Nominative is lexically marked.

## (33) Obligatory vs. optional agreement with Nominative:

Passive of ditransitive verbs		*AGRNONNOM	AGRNOM	*AGRLEXF
a.				
	☞ DAT V <sub>AGR,DAT</sub> NOM	*	*!	
	☞ DAT V <sub>AGR,NOM</sub> NOM			
	☞ DAT V <sub>U</sub> NOM		*!	
b.				
	Inverted DAT-NOM verbs			
	☞ DAT V <sub>AGR,DAT</sub> NOM	*	*!	
	☞ DAT V <sub>AGR,NOM</sub> NOM			*
	☞ DAT V <sub>U</sub> NOM		*	

By contrast, if all three AGR constraints are equally ranked, a lexical Nominative does not need to induce agreement; the inverted verbs thus allow for two agreement options.

This analysis is based on the stipulation that the inverted DAT-NOM verbs have an ‘oblique’ (i.e., lexically marked) Nominative, while the Nominative in the passive of ditransitives is only induced by DEFAULT. In addition to the two classes of DAT-NOM verbs just mentioned, Icelandic also exhibits a minor class of inverted DAT-NOM verbs (though it is not a small class due to a number of complex predicates) which alternate in the choice of the designated argument in the same way as the passive of ditransitives (Bernóðsson 1982, Barðdal 1999). Consider the examples in (34).

- (34) a. Ég tel henni henta drengirnir.  
I believe her.DAT please.INF the boys.NOM  
‘I believe her to be pleased by the boys’
- b. Ég tel drengina henta henni.  
I believe the boys.ACC please.INF her.DAT  
‘I believe the boys to please her’

These verbs simply lack the lexical feature [-hr] for the lower argument and therefore pattern with the passive of ditransitive verbs, shown in (32a) and (33a).<sup>13</sup> However, they are puzzling under the hypothesis that each verb has at most one ‘subject’; these verbs seem to have two subjects. Icelandic thus

<sup>13</sup> Barðdal (1997, 1998) argues that these alternating DAT-NOM verbs were already present in Old Scandinavian. This explains why in a later period, some verbs were reanalyzed as canonical NOM-ACC verbs, while others were fixed as nonalternating DAT-NOM verbs. I will not go into any details here.



turns out to be symmetric not only with respect to which object is realized as ‘subject’ (i.e., in SpecI) in the passive of ditransitive verbs, but also with respect to which argument is realized as ‘subject’ in a small class of alternating DAT-NOM verbs. This is due to two factors: (i) there is a syntactically designated position to be filled by an argument, and (ii) no preference is made among the constraints that determine the choice of this argument.

### 3. Control

#### 3.1 *Zu*-Infinitives in German

German control verbs take *zu*-infinitives. The infinitive is a [-AGR] form, which does not realize any agreement; moreover, it excludes Nominative arguments in German. However, the argument that is excluded from the infinitive clause can be controlled by a matrix verb. I will only consider obligatory (subject) control, where the argument of the matrix verb is identified with the missing argument in the infinitive. A minimal pair of possible vs. impossible control is shown in (35).

- (35) a. Ich hoffe, –<sub>NOM</sub> nicht verfolgt zu werden.  
 b. \*Ich hoffe, –<sub>DAT</sub> nicht gefolgt zu werden.  
 ‘I hope not to be followed’

The passive of a canonically transitive verb such as *verfolgen* is accepted in the control construction, whereas the passive of a Dative verb such as *folgen* is not.

The control construction is impossible with semantically zero-place verbs (weather verbs), such as the one in (36), and is also blocked if all argument roles of the dependent infinitive are realized, as in (36) (where *ihm schmeckt der Apfel* ‘he enjoys the apple’ would express a full proposition), even if Nominative is avoided.

- (36) a. \*Ich hoffe, es zu regnen.  
 I hope it to rain  
 b. \*Ich hoffe, ihm den Apfel zu schmecken.  
 I hope him.DAT the.ACC apple to taste

This observation can be captured by a constraint that forbids infinitive clauses to express a full proposition:

- (37) \*INF-PROP: An infinitive clause must have an open argument role.

This constraint can be implemented in the representation of an obligatory control verb such as *hoffen* ‘hope’ if one assumes that the dependent infinitive predicates of the same argument (‘x’) as the control verb, as shown in (38a). Let us further assume that the control verb has an argument role that is lexically marked by [ $\alpha$ ], and the dependent infinitive has an open argu-

ment role lexically marked by  $[\beta]$ . The stage in which such a control verb is combined with the *zu*-infinitive is given in (38b). By internal functional application,  $x$  replaces  $u$ , as shown in (38c).

- (38) a. control verb:  $\lambda P \quad \lambda x \text{ VERB}(x, P(x))$   
           *zu*-inf:  $[\alpha]$
- b. plus *zu*-inf:  $\lambda x \text{ VERB}(x, \lambda u \text{ DEP.VERB}(u)(x))$   
                            $[\alpha] \quad [\beta]$
- c. result:  $\lambda x \text{ VERB}(x, \text{DEP.VERB}(x))$   
                    $[\phi]$

The open question is whether such a construction converges, and how the resulting case feature  $\phi$  is computed: is  $\phi=\alpha$ , or  $\phi=\beta$ , or  $\phi=\alpha \sqcup \beta$  (by unification)? An answer is given by the first of the locality constraints in (39):

- (39) Locality constraints
- a. LOCCASE: Case features are locally assigned.
  - b. DOMAIN: All arguments are realized within the licensing domain.

LOCCASE implies that the controlling argument role cannot realize case features of the controlled argument role, and vice versa, that is,  $\phi$  must be identical with  $\alpha$ . DOMAIN corresponds to the extended projection principle in syntactic accounts. In the following, I will assume that an argument gap, as found in control constructions, as well as argument raising or topicalization, constitute DOMAIN violations, whereas clause-internal scrambling does not. Therefore, DOMAIN has to be a low-ranked constraint in both German and Icelandic.

A further question is which of the arguments of an infinitive clause has to be controlled. The constraints in (40) offer two options: either the highest argument or the Nominative argument must be controlled.

- (40) a. \*HIGH-INF: The highest argument is not allowed to stay in an infinitive clause.  
       b. \*NOM-INF: No Nominative argument is allowed to stay in an infinitive clause.

\*HIGH-INF can be considered a subcase of SEMHIER: a gap in the infinitive clause does not alter the linear order of arguments. But since the controlling argument is identical with the gap, it counts as the relevant argument, and since it is ordered before the infinitive clause, it must be the highest argument in order not to alter the linear order predicted by semantic ranking.

Note that \*INF-PROP corresponds to the disjunction of the two constraints in (40). \*INF-PROP is only violated if both \*HIGH-INF and \*NOM-INF are violated. The standard account, which assumes a syntactic PRO argument in the infinitive clause (thus not violating DOMAIN), is compatible

with this view. Indeed, none of these constraints is violated in case the embedded verb is a canonical one, as in (35a). However, if the inverted DAT-NOM verbs are involved, one of these constraints will be violated: \*HIGH-INF in German, and \*NOM-INF in Icelandic.

Let us first consider passives with lexical case (where \*NOM-INF and \*HIGH-INF are irrelevant). If one intends to express *ich hoffe, daß mir geholfen wird* in a control construction ('I hope to be helped'), three candidates come into mind, all three being ungrammatical:

- (41) a. \*Ich hoffe, geholfen zu werden.  
I hope helped to AUX  
b. \*Mir hofft, geholfen zu werden.  
Me.DAT hopes helped to AUX  
c. \*Ich hoffe, mir geholfen zu werden.  
I hope me.DAT helped to AUX

(41a) violates MAX(lexF), since Dative is ignored, (41b) violates LOCCASE, since Dative is realized on the matrix argument, and (41c) violates \*INF-PROP, since the dependent infinitive has no open argument. From the ungrammaticality of the examples in (41) we can conclude that all three constraints are undominated in German. If there is no candidate that escapes one of the undominated constraints, it is the Nullparse that wins. The Nullparse simply repeats the input but does not integrate the input elements into a resulting structure that converges semantically; it only violates the constraint \* $\emptyset$  'Avoid Nullparse'.<sup>14</sup> (42) shows an instance in which the Nullparse is the winning candidate.

(42) Evaluation of DAT-passives in a control construction

	LOC CASE	*INF- PROP	MAX (lexF)	* $\emptyset$	DO- MAIN
Ich hoffe, geholfen zu werden			*!		*
Mir hofft, geholfen zu werden	*!				*
Ich hoffe, mir geholfen zu werden		*!			
☞ Nullparse				*	

Nothing excludes that the control verb itself is lexically marked. In fact, (43a) shows that the controller may be lexically marked for Dative. However, LOCCASE and MAX(lexF) exclude that such a Dative argument controls a Dative of the dependent verb, as shown by the ungrammaticality of (43b).

<sup>14</sup> Among the various proposals in the literature to account for absolute ungrammaticality, the versions of Prince & Smolensky (1993) and Ackema & Neeleman (1998) seem the most adequate ones for the kind of syntactic problems considered here.

- (43) a. *Ihr*<sub>DAT</sub> gelang es, –<sub>NOM</sub> nicht verfolgt zu werden.  
 b. \**Ihr*<sub>DAT</sub> gelang es, –<sub>DAT</sub> nicht gefolgt zu werden.  
 ‘She managed not to be followed’

If the dependent verb is an inverted DAT-NOM verb, the ranking between \*HIGH-INF and \*NOM-INF becomes decisive. The examples in (44) show that \*HIGH-INF can be violated, that is, a non-highest Nominative argument can be controlled in German, whereas \*NOM-INF cannot. In the ungrammatical sentence (44c), the violation of \*NOM-INF coincides with a violation of MAX(lexF).

- (44) a. Ich hoffe, *ihr*<sub>DAT</sub> –<sub>NOM</sub> zu gefallen.  
 ‘I hope to be liked by her’  
 b. Der Hund hoffte, einmal im Leben einem<sub>DAT</sub> freundlichen Herrn –<sub>NOM</sub> zu gehören.  
 ‘The dog hoped to belong to a nice master once in his life’  
 c. \*Ich hoffe, –<sub>DAT</sub> *er*<sub>NOM</sub> zu gefallen.  
 ‘I hope to like him’

With the constraint ranking MAX(lexF), \*NOM-INF » \*∅ » \*HIGH-INF these data can be captured, as shown in (44).

- (45) Evaluation of inverted DAT-NOM verbs in a control construction

	MAX (lexF)	*NOM-INF	*∅	*HIGH-INF
a.				
☞	Ich hoffe [ <sub>VP</sub> <i>ihr</i> – <sub>NOM</sub> zu gefallen]	·		*
	Nullparse	·	*!	
b.				
☞	Ich hoffe [ <sub>VP</sub> – <sub>DAT</sub> <i>er</i> zu gefallen]	*!	·	*
	Nullparse	·	*	

Nullparse is excluded in (45a) because there is a candidate that does not violate one of the undominated constraints. In contrast, Nullparse wins in (45b) because the next-to-best candidate violates undominated constraints.

### 3.2 Að-infinitives in Icelandic

Icelandic control verbs require infinitives with the complementizer *að*. Considering the Icelandic counterparts of the candidates in (41), one can see that the first in (46a) is acceptable, whereas the other two in (46b,c) are ungrammatical, as in German.

- (46) a. Ég vonast til að verða hjálpað.  
 I hope for to be helped  
 b. \*Mér vonast til að verða hjálpað.  
 me.DAT hope for to be helped

- c. \*Ég vonast til að mér verða hjálpað.  
I hope for me.DAT to be helped.

I conclude from these data that in Icelandic, MAX(lexF) is lower ranked than \*Ø. The evaluation of the possible candidates is illustrated in (47).

(47) Evaluation of DAT-passives in a control construction

	LOC CASE	*INF- PROP	*Ø	MAX (lexF)	DO- MAIN
☞ Ég vonast til að verða hjálpað.				*	*
Mér vonast til að verða hjálpað.	*!				*
Ég vonast til að mér verða hjálpað.		*!			
Nullparse			*!		

Andrews (1976) remarks that Icelandic speakers judge the alternative with a subjunctive clause, shown in (48), slightly better than (46a); this indicates that the speakers are aware of the MAX(lexF) violation in (46a). Note that the complementizer *að* in (48), introducing a clause with a finite verb, is different from the *að* that combines with an infinitive clause. For obvious reasons, a finite verb clause and an infinitive clause are not in the same candidate set, hence (46a) and (48) are not direct competitors but rather paraphrases of each other.

- (48) Ég vonast til að mér verði hjálpað.  
I hope for that me.DAT be.SUBJ helped  
'I hope for me to be helped' (Andrews 175)

One reason why MAX(lexF) may be violated in Icelandic is the fact that lexical case is often morphologically visible at some other category. Consider the following examples in which an adjective shows the marked case of the unrealized controlled argument. This is possible because adjectival predicates do not only agree with their argument in gender and number, but also show case concord. (49a) shows an intransitive verb with lexically marked Accusative and a secondary predicate in the same case. In (49b), this verb occurs in a control construction in which the marked Accusative is still displayed by the adjective. In (49c), we see a control verb marked for Accusative, which controls an argument marked for Dative, whereas (49d) is an example in which the reverse marking appears.

- (49) a. Hana rak á land eina.  
She.fsg.ACC drifted ashore alone.fsg.ACC  
'She drifted ashore alone'  
b. Hún vonast til að reka á land eina  
She.NOM hopes at to drift.INF ashore alone.fsg.ACC  
'She hopes to drift ashore alone' (Andrews 175)

- c. Mig langar að vera kastað einum út um gluggann.  
I.ACC long to be thrown alone.msg.DAT out of the window  
'I long to be thrown out of the window alone' (Andrews 176)
- d. Honum þotti leitt að verða einn eftir.  
He.msg.DAT thought loathsome to stay alone.msg.ACC after  
'He hated to stay behind' (Kress 217)

These examples, which instantiate the hypothetical case of (38b) with  $\alpha \neq \beta$ , show that the different features cannot be unified, neither on the matrix verb nor on the embedded verb, as required by LOCCASE.

It has been argued in the literature that examples like those in (49) provide evidence for the existence of PRO, in this case a PRO that bears lexical case. However, there is no need for assuming PRO as a syntactic element. Under the present account, it is the theta-role that bears the lexical case feature ([+hr]), thus a secondary predicate inherits this case feature when the infinitive clause is formed, and the theta-role is indexed with the agreement features realized on this predicate. In the next step, illustrated in (50), the infinitive clause is embedded under a control verb. The lexical case feature of the dependent verb has to be ignored in this case, whereas the agreement features are passed to the controlling argument (according to the agreement theory in Wunderlich 1994, Pollard & Sag 1994). In other words, agreement features, which are semantically motivated, have to be unified, in contrast to case features.

$$(50) \quad \lambda x \text{ HOPE}(x, \lambda u^{\text{fsg}} \{ \text{DRIFT-ASHORE}(u) \ \& \ \text{ALONE}(u) \} (x)) \\ \quad \quad \quad \text{+hr} \\ \quad \quad \quad = \lambda x^{\text{fsg}} \text{HOPE}(x, \{ \text{DRIFT-ASHORE}(x) \ \& \ \text{ALONE}(x) \})$$

If the controlled argument bears no lexical case, one expects that a corresponding secondary predicate is realized in the Nominative (the unmarked case). This is indeed one option. However, as Andrews (1990) observes, it is also possible that the secondary predicate takes over the marked case from the control verb.

- (51) a. Mig langar að fara í kaupstaðinn einn/einan.  
I.ACC long to go into town          alone.NOM/ACC  
'I long to go to town alone' (Andrews 176)
- b.  $\lambda P \lambda x \{ \text{LONG}(x, P(x)) \}$   
      +hr

This long-distance case relationship poses a problem which cannot be solved by the assumption of PRO.ACC because the case features [ $\alpha$ ] and [ $\beta$ ] cannot be unified on the embedded verb, according to LOCCASE. The fact that nevertheless *einan*.ACC is possible in (51a) can be explained as follows. According to the representation of the control verb in (51b), the infinitive

clause P predicates of the argument *x*; hence, it can inherit the lexical case feature from the control verb. The infinitive itself cannot bear lexical case, but it may pass the case feature to a secondary predicate of the same argument (if the embedded verb is not itself marked for lexical case). This syntactically triggered top-down strategy, leading to *einan*.ACC, competes with the lexically triggered bottom-up strategy, which leads to *einn*.NOM.

If we now turn to the inverted DAT-NOM verbs in Icelandic, we see that (52a), in which the higher argument is preserved and the lower one is controlled, is strictly ungrammatical. This shows that \*HIGH-INF ranks above \*NOM-INF. In the reverse case, the higher argument is controlled and the Nominative is preserved within the infinitive clause. Here, the judgments differ to a some extent. Some examples, such as (52b) with a pronoun, are hardly acceptable, but a full DP, as in (52c), improves a lot on the construction. These examples violate both MAX(lexF) and \*NOM-INF, which may explain why they are only marginally acceptable. The alternative shown in (52d) with a PP only violates MAX(lexF) and is fully acceptable.

- (52) a. \*Ég vonast til að henni líka –<sub>NOM</sub>. violates \*HIGH-INF,  
I hope for to she.DAT like –<sub>NOM</sub> which is fatal  
'I hope to be liked by her'
- b. ???Ég vonast til að –<sub>DAT</sub> líka hún. violates MAX(lexF)  
I hope for to –<sub>DAT</sub> like she.NOM and \*NOM-INF  
'I hope to like her'
- c. ?Ég vonast til að –<sub>DAT</sub> líka þessi bók. violates MAX(lexF)  
I hope for to –<sub>DAT</sub> like this book.NOM and \*NOM-INF  
'I hope to like this book'
- d. Ég vonast til að –<sub>DAT</sub> líka við hana. violates MAX(lexF)  
I hope for to –<sub>DAT</sub> like with she.ACC  
'I hope to like her'

(53b), taken from Taraldsen (1995), is another example showing that the control construction with an inverted DAT-NOM verb is not ungrammatical.

- (53) a. Henni leiddust/leiddist þeir.  
she.DAT be.bored.3pl/U they.NOM  
'She was bored with them' (Taraldsen 307)
- b. ?Við reyndum að –<sub>DAT</sub> leiðast hún ekki.  
We tried.1pl to –<sub>DAT</sub> be.bored she.NOM not  
'We tried not to be bored with her' (Taraldsen 322)

These observations can best be captured by the constraint ranking assumed in (54); it predicts that only the highest argument can be controlled.

## (54) Evaluation of inverted DAT-NOM verbs in a control construction

a.	*HIGH- INF	*∅	MAX (lexF)	*NOM- INF
Ég vonast ... [VP henni líka – <sub>NOM</sub> ]	*!			
☞ Nullparse		*		
b.				
☞ Ég vonast ... [VP – <sub>DAT</sub> líka thessi bók]			*	*
Nullparse		*!		

**4. Raising to object****4.1 Raising in German**

Only a few German verbs trigger raising to object; most of them are verbs of perception. The examples in (55) illustrate that the highest argument of the bare infinitive is raised and gets canonical Accusative by the matrix verb. If the dependent verb is transitive, a double Accusative appears, as in (55c); this indicates that only the highest argument is raised, while the lower object remains part of the VP infinitive clause.

- (55) a. Ich sah ihn kommen.  
I saw him.ACC come
- b. Ich sah ihn verfolgt werden.  
I saw him.ACC followed up be
- c. Ich sah den Mann den Jungen schlagen.  
I saw the man.ACC [VP the boy.ACC hit]

In view of the data in (56), one has to assume that the expletive argument of a weather verb can be raised. If there is no argument to be raised, the construction is ungrammatical, as shown by (56b,c).

- (56) a. Ich sah es regnen.  
I saw it rain
- b. \*Ich sah getanzt werden.  
I saw danced be
- c. \*Ich hörte umgeräumt werden.  
I heard replaced be

The following examples with lexically marked verbs are about acceptable for the majority of speakers. Some speakers find these examples good, while others reject them. Note that (57b-d) preserve the semantic order of



arguments. (57e) with a scrambled order is judged worse than (57d), whereas (57f) with a Nominative is ungrammatical.<sup>15</sup>

- (57) a. ?Ich sah ihm geholfen werden.  
‘I saw him be helped’
- b. ?Ich sah ihm den Mantel gezeigt werden.  
I saw him.DAT the coat.ACC shown be  
‘I saw him be shown the coat’
- c. ?Ich hörte ihm den Apfel schmecken.  
‘I heard him enjoy the apple’
- d. ?Ich sah ihm den Film gefallen.  
I saw him.DAT the film.ACC like  
‘I saw him like the film’
- e. ??Ich sah den Film ihm gefallen.  
I saw the film.ACC him.DAT like
- f. \* Ich sah ihm der Film gefallen.  
I saw him.DAT the film.NOM like

Let us assume that the object raising verb takes an infinitive VP and assigns structural case to the raised argument. This follows from the clause union account, according to which the relevant argument role becomes part of the theta-structure of the matrix verb. Since a lexically marked argument is not assigned Accusative, as in (57a), the lexical representation of an object raising verb should not make any reference to the arguments of the dependent predicate. Therefore, the representation of such a verb simply requires that it takes a propositional expression to be realized by an infinitive clause. (58) shows how *sehen* ‘see’ can be combined with an infinitive of *kommen* ‘come’ by functional composition. In the result (58c), every lexical marking of  $\lambda u$  must be preserved.

- (58) a.  $\lambda p \quad \lambda x \quad \text{SEE}(x,p)$   
INF
- b.  $\lambda p \quad \lambda x \quad \text{SEE}(x,p) [\lambda u \text{ COME}(u)]$
- c.  $\lambda u \quad \lambda x \quad \text{SEE}(x, \text{COME}(u))$

Nothing in the lexical representation (58a) excludes the combination with zero-place predicates like those in (56b,c), and nothing accounts for why the examples in (57) are not fully acceptable. Therefore, further constraints are

<sup>15</sup> Some sentences are improved with another verb or a more heavy Dative DP. Compare (i) with (57d) and (ii) with (57e).

- (i) Ich sah ihm den Braten behagen.  
I saw him.DAT the roast meat.ACC please
- (ii) ?Ich sah diesen Film den meisten Kindern gefallen.  
‘I saw this film be liked by most of the children’

necessary. To the set of constraints already introduced, I add the one in (59), and assume the ranking in (60) for German.

(59) ECM: A raised argument gets structural case by the matrix verb.

(60) MAX(lexF), \*INF-PROP, \*NOM-INF » ECM, \*HIGH-INF » DOMAIN

\*INF-PROP accounts for the fact that bare infinitive phrases with no argument to be raised cannot appear with a raising verb. I therefore assume that all the examples in (57a) to (57f) are instances of raising. In (57a), a lexically marked argument is raised and does not satisfy ECM, whereas in (57b-e), a non-highest argument is raised and satisfies ECM. Given the order of arguments, (57b-d) must be instances of multiple raising (i.e., multiple violations of DOMAIN).<sup>16</sup> (57f) is an example that violates \*NOM-INF. As we will see in the next subsection, multiple raising is not possible in Icelandic, due to a different ordering of DOMAIN.

Summing up, none of the examples violates MAX(lexF), but the ungrammatical instances of (56) violate \*INF-PROP. The (partially) acceptable instances of (57) either violate ECM (57a), or they violate DOMAIN twice (57d-e). The tableau in (61) shows that an ECM violation is more tolerable than a MAX(lexF) or \*INF-PROP violation. Speakers who reject the best candidate of (61) do not tolerate an ECM violation.

(61) Evaluation of DAT-passives in a raising-to-object construction

	MAX (lexF)	*INF- PROP	*NOM- INF	*∅	ECM	*HIGH- INF	DO- MAIN
☞ Ich sah ihm.DAT [ <sub>VP</sub> geholfen werden]					*		*
Ich sah ihn.ACC [ <sub>VP</sub> geholfen werden]	*!						*
Ich sah [ <sub>VP</sub> ihm.DAT geholfen werden]		*!					
Nullparse				*!			

(62) shows the evaluation of (57d-f). It turns out that the candidate with multiple raising (a double violation of DOMAIN) meets best the given constraint ranking. Speakers who reject (57d) do not tolerate multiple raising.

<sup>16</sup> The fact that (57d) is better judged than (57e) can also be explained by means of PARALLEL MOVEMENT, which requires a given order of constituents to be preserved (Müller to appear); see also footnote 3.

(62) Inverted DAT-NOM verbs in a raising-to-object construction

	MAX	*INF-	*NOM	*Ø	ECM	*HIGH	DO-
	(lexF)	PROP	-INF			-INF	MAIN
Ich sah ...							
☞ ihm den Film [ <sub>VP</sub> gefallen]							**
den Film [ <sub>VP</sub> ihm gefallen]						*!	*
ihm [ <sub>VP</sub> der Film gefallen]			*!		*		*
ihn [ <sub>VP</sub> der Film gefallen]	*!		*				*
[ <sub>VP</sub> ihm der Film gefallen]		*!	*				
Nullparse				*!			

In the following we will see that the relative order of \*NOM-INF and \*HIGH-INF is the opposite in Icelandic.

4.2 Raising in Icelandic

Icelandic exhibits more verbs than German that have the option of raising to object, among them verbs of saying or thinking. Propositions such as those in (63) can easily be embedded under raising verbs, as shown in (64).

- (63) a. Strákarnir voru kitlaðir  
the-boys.mpl.NOM were tickled.mpl.NOM  
b. Strákunum var bjargað  
the-boys.mpl.DAT was rescued.U (Andrews 189)
- (64) a. Ég tel strákana (hafa verið) kitlaða  
I believe the-boys.mpl.ACC (have been) tickled.mpl.ACC  
b. Ég tel strákunum (hafa verið) bjargað  
I believe the-boys.mpl.DAT (have been) rescued.U  
(Andrews 190)

Of particular interest here is the fact that the raised arguments can become designated (subject) in the passive, which is illustrated in (65). These data provide evidence that the raised arguments in fact belong to the domain of the matrix verb.

- (65) a. Strákarnir eru taldir (hafa verið) kitlaðir  
the-boys.mpl.NOM are believed.mpl.NOM tickled.mpl.NOM  
‘The boys are believed to have been tickled’  
b. Strákunum er talið (hafa verið) bjargað  
the-boys.mpl.DAT is believed.U (have been) rescued.U  
‘The boys are believed to have been rescued’ (Andrews 190)

The (a) sentences of (64) and (65) demonstrate that a structural Nominative becomes Accusative in the raising construction, but again Nominative under passive, while a Dative argument in the (b) sentences stays inert. Thus in no

case is MAX(lexF) violated. The following tableau shows that the sentence in (64b) comes out best. Crucially, ECM must be dominated by MAX(lexF).

## (66) Evaluation of DAT-passives in a raising-to-object construction

	*INF-PROP	*∅	MAX (lexF)	ECM
☞ Ég tel strákunum.DAT [VP ...]				*
Ég tel strákana.ACC [VP ...]			*!	
Ég tel [VP strákunum ...]	*!			
Nullparse		*!		

The example in (67), involving an inverted DAT-NOM verb, illustrates another clear difference from German. Here, the non-raised Nominative argument remains Nominative, which is ungrammatical in German, compare (67) with (57f).

- (67) Ég tel henni hafa alltaf þótt Ólafur leiðinlegur.  
 I believe her.DAT have always thought Olaf.NOM boring.NOM  
 ‘I believe her always to have found Olaf boring’ (ZMT 101)

The tableau in (68) provides an analysis. The optimal candidate violates both ECM and \*NOM-INF. Therefore, these constraints must be the lowest-ranked ones.

## (68) Inverted DAT-NOM verbs in a raising-to-object construction

	*INF-PROP	*HIGH-INF	*∅	MAX (lexF)	DO-MAIN	ECM	*NOM-INF
☞ ... henni.DAT [VP ... Ólafur.NOM]					*	*	*
... Ólaf.ACC [VP ... henni.DAT]		*!			*		
... henni.DAT Ólaf.ACC [VP ...]					**!		
... hana.ACC [VP ... Ólafur.NOM]				*	*!		*
... [VP henni.DAT ... Ólafur.NOM]	*!						*
Nullparse			*!				

As pointed out above, either of the two passive variants of a ditransitive verb can undergo the raising-to-object construction, giving rise to the options in (28), repeated here as (69).<sup>17</sup>

- (69) a. Ég tel drengina hafa verið sýnda honum.  
 ‘I believe the boys.ACC to have been shown.ACC to him.DAT’  
 b. Ég tel honum hafa verið sýndir drengirnir.  
 ‘I believe him.DAT to have been shown the boys.NOM’

<sup>17</sup> The same is true of alternating inverted DAT-NOM verbs such as *henta* ‘please’, illustrated in (34).

The postulated constraint ranking seems to predict that contrary to the facts only one option, namely (69b), can occur.

(70) Passive of ditransitive verbs in a raising-to-object construction

	*INF- PROP	*HIGH- INF	MAX (lexF)	DO- MAIN	ECM	*NOM- INF
☞ drengina.ACC [vp ... honum.DAT]		*!		*		
☞ honum.DAT [vp drengirnir.NOM]				*	*	*
☞ honum.DAT drengina.ACC [vp...]				**!		

However, if one assumes that the raising-to-object construction applies to an IP rather than a VP, the two passive structures that underly (69a) and (69b) constitute different inputs for the evaluation of raising to object,<sup>18</sup> so the two options in (69) cannot be compared directly. In the recent literature it has been argued that cyclic optimization is needed: Kiparsky (1988) argues this for the morphology (stem level vs. word level) on the basis of opacity data in Arabic dialects; Heck & Müller (2000) argue this for the syntax on the basis of data on repair-driven movement. Accordingly, if the evaluation of syntactic structures in Icelandic is cyclically performed, the undesirable result of (70) is avoided. In the first cycle the embedded IP is evaluated, and in the second cycle each optimal candidate from the first cycle is embedded into a more complex construction. However, active and passive do not form separate cycles, since neither is syntactically derived from the other. The number of cycles that are necessary to yield the two options with the raising verb being passivized, shown in (71), still is two.

- (71) a. Drengirnir eru taldir hafa verið sýndir honum.  
 ‘The boys.NOM are believed to have been shown to him.DAT’  
 b. Honum er talið hafa verið sýndir drengirnir.  
 ‘He.DAT is believed to have been shown the boys.NOM’

In other words, only IPs, which allow for a new choice of the designated argument, should constitute a new cycle in Icelandic.

**5. Summary**

The lexical differences between German and Icelandic are by and large rather marginal; both have similar types of lexical marking and follow the same constraint ranking for case assignment. I have argued that some of the major differences between these two languages follow from the fact that the syntactic constructions induced by control and raising verbs react differently to the semantic and morphological properties of the embedded verb.

<sup>18</sup> The same is true of the two IP structures of alternating inverted DAT-NOM verbs.

In order to account for these differences, the notion of ‘underlying subject’ has been replaced by a pair of notions: HIGH (the semantically highest argument) and NOM (the morphologically unmarked argument). The syntactic differences between German and Icelandic reduce to V and I as final versus initial; they only explain why Icelandic needs to select a designated argument, which is irrelevant in German. The syntactic notion of ‘designated argument’, then, is the only notion of ‘subject’ that is left under this account.

An important piece of empirical evidence for the necessity to split the notion of subject into several ones comes from the passive of ditransitive verbs and the small class of alternating inverted DAT-NOM verbs of Icelandic, where either HIGH or NOM is the designated argument. For obvious reasons, the assumption of two underlying subjects that are alternatively mapped on the surface subject must be rejected. Moreover, the notion of an underlying subject would lead to inconsistencies, given the result that HIGH and NOM are equally good concerning the designated argument, but differ crucially as to which argument must not occur in the infinitive clause.

Regarding the way in which the syntactic constructions react to the underlying properties of lexical items, I have shown that visibility of lexical case is more important in German than in Icelandic, while faithfulness to the semantic hierarchy is more important in Icelandic than in German. This correlates with the fact that \*NOM-INF is more important in German, while DOMAIN is more important in Icelandic. The main findings can be summarized by the following statements:

Partial rankings that hold for both German and Icelandic:

- a. Case assignment:  
 $\text{MAX}(\text{lexF}) \gg \text{DEFAULT, UNIQUENESS} \gg \text{MAX}(+\text{hr}, +\text{lr})$
- b. Local case and infinitives:  $\text{LOCCASE, *INF-PROP} \gg * \emptyset$

Partial rankings in which German and Icelandic differ (dependent infinitives and agreement):

- a. German:  
 $\text{MAX}(\text{lexF}), * \text{NOM-INF} \gg * \emptyset \gg * \text{HIGH-INF, ECM} \gg \text{DOMAIN AGRNOM, *AGRNONNOM, *AGRLEXF} \gg * \emptyset$

- b. Icelandic:  
 $* \text{HIGH-INF} \gg * \emptyset \gg \text{MAX}(\text{lexF}), \text{DOMAIN} \gg \text{ECM, *NOM-INF *AGRNONNOM} \gg * \emptyset \gg \text{AGRNOM, *AGRLEXF}$

Moreover, Icelandic instantiates DES constraints.

The constraints regulating case assignment and agreement largely differ from those that regulate control and raising. Thus, certain sets of constraints are construction-specific, while other constraints regulate various kinds of constructions. The most relevant constraints are SEMHIER (with \*HIGH-INF

as a subcase), which regulates the mapping between semantics and syntax, and MAX(lexF), which regulates the mapping between lexical features and syntax. Given this characterization, semantics turns out to be more important in Icelandic than in German, while the morphosyntactic marking turns out to be more important in German than in Icelandic.

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