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## Case Assignment of Nonce Verbs in Icelandic\*

### 1. Introduction

In a recent study of novel verbs in Icelandic and their behaviour regarding assignment of morphological case to their arguments (Barðdal 1999a and 1999b), I found that novel verbs acquire their argument structure in three different ways. These I have called *Argument structure borrowing*, *Cluster Attraction* and *Isolate Attraction*. To exemplify, consider the following examples (I refer the interested reader to the above cited references for a detailed discussion and more examples.):

- |        |   |                                     |
|--------|---|-------------------------------------|
| (1) a. | fríka út<br>to freak out<br>'freak out'   | <i>Argument structure borrowing</i> |
| b.     | netast á<br>to net+st on<br>'take turns in writing to each other on the internet' | <i>Cluster Attraction</i>           |
| c.     | diskrímínera fólki<br>discriminate people (dat)<br>'discriminate people'          | <i>Isolate Attraction</i>           |

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For (1a) above it seems to be a reasonable assumption that the argument structure has been borrowed into Icelandic since *frika út* has the same argument structure in Icelandic as in the source language, English. However, it is not customary to assume that a structure has been borrowed from a source language to a recipient language, unless that structure is completely new in the recipient language. It seems to me, though, that it is reasonable to assume that not only has the stem in (1a) been borrowed into Icelandic, but also that it has been borrowed together with its argument structure, or perhaps rather its complex predicate structure.<sup>1</sup> This can be explained by the observation that language learners are conservative in their language use (see for instance Gropen, Pinker, Hollander, Goldberg and Wilson 1989; Pinker 1989; Goldberg 1995:133 ff), i.e. language learners tend to use lexical items in the same way as they hear them used. Assuming that, I would like to suggest that this tendency can even be valid across language boundaries. That should not come as a surprise, especially not when the two languages are structurally similar (perhaps then called *Interference* by sociolinguists). It might therefore be more appropriate to assume, not that the argument structure has been borrowed, but rather the *use* of the lexical item under consideration.

The example in (1b) above seems to be formed in analogy to a group of verbs already existing in Icelandic:

- (2) netast á                skrifast á 'take turns in writing to each other',  
                                   drekkast á 'take turns in drinking to each other',  
                                   kallast á 'take turns in shouting at each other',  
                                   hringjast á 'take turns in phoning each other',  
                                   kankast á 'take turns in teasing each other', ...  
                                   kveðast á 'take turns in reciting poetry', ...

All the predicates in (2), i.e. the verb stems together with the argument structure constructions, share the property that they denote either a reciprocal or a turntaking action. Therefore, we can argue that a cluster of already existing verbs in Icelandic functions as a model for our novel verb. This is in accordance with Goldberg's claims (1995:ch. 5) that certain verb clusters are associated with

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<sup>1</sup> I suspect that what I call *Argument structure borrowing* may perhaps resemble, or be the same as, what has traditionally been called *Lexical transfer*. It is not clear to me, though, whether *Lexical transfer* implies identical syntactic usage of the transferred item in both languages or not, as is the case with *Argument structure borrowing*.

certain argument structure constructions. It further sustains a correlation between high type frequency and productivity (see Goldberg 1995: ch. 5 and Bybee 1985:132-33, 1995).

Finally, I have found that in certain cases of near-synonymy, only one verb, and not a whole cluster, seems to function as a modelling verb for our novel verb. That seems to be the case with (1c), where an "Icelandification" of the English *discriminate* is preferred over the Icelandic *mismuna* with the same meaning. The borrowed verb in (1c), however, picks up the dative case of the object of *mismuna*, and not the ordinary object case in Icelandic, i.e. the accusative. This last way for novel verbs to acquire their argument structure may perhaps be similar to what has been called *verb-for-verb-substitution* within the acquisition literature (Pinker 1989:ch. 7). It has been noted that children, at early age, tend to make substitution errors, such as using, for instance, *let* instead of *make*, or vice versa:

- (3) C 3;9: Make me watch it. [Wants father to let her watch a TV show]  
(Pinker 1989:332 (cited from M. Bowerman))

Such examples seem to appear for a limited time and then disappear again.

All of this needs to be studied in more detail, but these last examples of near-synonymy, or *Isolate Attraction*, contradict Goldberg's assumption (1995:ch 5) that high type frequency is a prerequisite for productivity (see, however, Goldberg and Sethuraman 1999 for a revised view). Therefore, I would like to suggest that high type frequency is the consequence or the result of productivity, and subsequently it constitutes one way to measure it (see also Barðdal 1999a:84). Obviously, what is frequent is probably also, or may very well be, productive. On such a view, *Isolate Attraction* is not ruled out as a way for novel verbs to acquire their argument structure.

Further, Cruse and Croft (in prep) point out that studies on morphology (see Bybee and Slobin 1982 and Bybee and Modér 1983), done within the usage-based model of language use and linguistic behaviour have revealed that low-frequency constructions often exhibit low degrees of productivity instead of being completely non-productive. Cruse and Croft (in prep:ch. 12) argue, following for instance Langacker (1988) and Bybee (1985, 1995), that the factor at issue is *entrenchment*. A construction can be said to be entrenched in the mind of speakers if it is very frequent. High type frequency yields more general or

schematic constructions as entrenched while high token frequency yields more specific or substantive constructions as entrenched (see Cruse and Croft (in prep:ch. 10) and Croft (2000) on constructions at different levels of schematicity). Assuming the existence of constructions at different levels of schematicity predicts that different constructions at different levels can be activated when necessary, within the mind of the speaker. Given this, we might expect the speaker to associate a new or novel verb with a cluster of already existing verbs, i.e. the new or novel verb activates a general/schematic construction, or to associate a new or novel verb with only one existing verb in the language, i.e. the new or novel verb activates a more substantive or verb specific construction. On the basis of this, we would expect both Cluster Attraction and Isolate Attraction to be found when new verbs acquire their argument structure, depending on which constructions, higher or lower level, are entrenched in the language in question.

Furthermore, this is in accordance with the conclusions of Goldberg and Sethuraman (1999) based on research on categorial generalizations by Osherson, Smith, Wilkie, López and Shafir (1990), that a new member can be assigned to a category on the basis of overall similarity (see also section 4 below), or on basis of high type frequency.

Hitherto, research on productivity within the usage-based model has more or less been confined to morphology. The first step to apply these tools to syntax was taken by Goldberg 1995, where it is argued that only high type frequency constructions are productive. As my research on argument structure of new verbs in Icelandic (Barðdal 1999a) has revealed, productivity within syntax is parallel to productivity within morphology, yielding both high type frequency constructions and low type frequency constructions as productive.

In this context, it is interesting to find out how speakers treat unknown synonyms, i.e. what strategy do they use, Cluster Attraction or Isolate Attraction? To throw some light on that, I have carried out a pilot study on nonce verbs and how they are treated by both children and adult speakers of Icelandic. The next section contains basic information on facts of morphological case in Icelandic. Section 3 reports on the design and conduction of the experiment. In section 4 I put forward the statistical results and discuss some possible interpretations. Section 5 is a summary.

## 2. Case in Icelandic

Experiments on nonce verbs show that speakers use the meaning of the verb as the primary indicator of argument structure (Braine, Brody, Shalom, Weisberger and Blum 1990). Considering the fact that morphological case is a part of argument structure, we may expect a manifestation of this in different case use of nonce verbs in Icelandic. That is, we may expect nonce verbs to appear, not only in different argument structure constructions, but also to show variance regarding morphological case.

Let us consider the status of morphological case in Icelandic. Icelandic has four morphological cases, nominative, accusative, dative and genitive, and syntactic subjects and syntactic objects can be marked with any of these four cases. In a small text corpus of 40.000 words, made up from five genres of written Icelandic and one genre of spoken Icelandic (Barðdal 2000 and Barðdal in prep), 93,9% of subjects were in the nominative case, and approximately 6,1% were oblique (on oblique subjects in Icelandic see Thráinsson 1979, Bernóðsson 1982, Zaenen, Maling and Thráinsson 1985, Sigurðsson 1989, 1992, Jónsson 1997-98, Barðdal 1999c). Objects, on the other hand, were marked accusative in 66,8% of the cases and dative in 25,2% of the cases. These are the percentages of the real figures in Table 1 below:

	Nominative	Accusative	Dative	Genitive
Subject	4.347	52	219	8
Object	114	1.272	479	39
Indirect object		5	74	
Prep. object		1.368	2.185	306

**Table 1.** Distribution of morphological case across syntactic functions.

Let us compare these with the results for a corpus of novel verbs in Icelandic (Barðdal 1999a:88 and Barðdal in prep), illustrated in Table 2:

	Nominative	Accusative	Dative	Genitive
Subject	1245	3	7	
Object		527	171	2
Prep. object		141	95	18
Indirect object			5	

**Table 2.** The distribution of cases of the arguments of novel verbs across syntactic functions.

The statistics on novel verbs in Icelandic differ from the statistics on the Icelandic text corpus in one respect: almost all the novel verbs select a nominative subject, as opposed to 93,9% in the text corpus. However, compare this with the statistics on object case. Objects of novel verbs are 75,3% accusatives and 24,4% datives, as opposed to 66,8% and 25,2% in the text corpus. This comparison is shown in Table 3.

	Nom subj.	Obl. subj.	Acc obj.	Dat obj.
Text corpus	93,9%	6,1%	66,8%	25,2%
Novel verbs	99,2%	0,8%	75,3%	24,4%

**Table 3.** A comparison of the frequency of subjects and objects in the two corpora, a text corpus and a corpus of novel verbs.

We have to remember, however, that these two corpora are strictly speaking not comparable. The corpus of novel verbs provides us with statistics on type frequency, while the text corpus provides us with statistics on token frequency. Therefore, the corpus of novel verbs should rather be compared with a dictionary of Icelandic verbs, while the text corpus is a measurement of language use.

It is interesting to note, however, that oblique subjects are so scantily represented amongst novel verbs. This may be due to several factors. Firstly, there are not many verbs in the material with the right semantics for selecting oblique subjects, since the most prototypical verbs selecting for oblique subjects in Icelandic are Experiencer verbs. Secondly, the oblique subject construction may not be a productive pattern in the language system of Icelandic speakers. The

third possibility is that the reason for this might be that there has been a move against dative subjects in Iceland. This move originally came around because Experiencer accusative subjects tend to change into datives (this has been referred to either as Dative Sickness or Dative Substitution) (see Svavarsdóttir 1982, Halldórsson 1982, Rögnvaldsson 1983, Svavarsdóttir, Pálsson and Þórlindsson 1984, Smith 1994, 1996, and Eythórsson 2000, on this case variation). The Icelandic language purists have, unsuccessfully, been trying to correct that. This can easily lead some Icelandic speakers to become reluctant to use oblique subjects.

An experiment with nonce verbs might throw some light on this. We will now proceed to the description of the experiment.

### 3. The Experiment

No experiment with nonce verbs and their case assignment has been carried out for Icelandic, nor do I know of any similar experiment for any other language. This experiment is therefore a unique pilot study, aiming at generating basic knowledge of the phenomenon which then can hopefully be used as a base for future studies and research.

Both children and adults participated in the study, in which I used the five following Icelandic verbs and their nonce verbs equivalents:

Icelandic	Glosses	Nonce verbs	Icelandic Syntax
leiðast	'be bored'	flokast	SubjDat V
grilla	'grill'	slobba	SubjNom V ObjAcc
sparka	'kick'	kísa	SubjNom V ObjDat
líða illa	'feel bad'	tvíta	SubjDat V
elska	'love'	spofta	SubjNom V ObjAcc

**Table 4.** Verbs in the experiment.

The following pictures, adapted from the Screen Beans series of Microsoft Office 98, were used:



Picture 1.



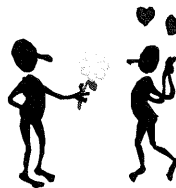
Picture 2.



Picture 3.



Picture 4.



Picture 5.

Notice that three of the verbs are emotion verbs, i.e. the first one *flokast* 'be bored', the fourth one *tvíta* 'feel bad' and the last one *spofta* 'love'. Three of the verbs are transitive, i.e. the second one *slobba* 'grill', the third one *kísa* 'kick' and the last one *spofta* 'love'. Two of the native transitive verbs select for accusative objects, *grilla* and *elska*, but the one in the middle, *sparka*, for a dative object. Of the native verbs selecting for accusative objects, one is agentive, *grilla*, and one is an emotion verb, *elska*. Therefore, we should have a fair distribution of verbs with emotion and agentive meaning, a fair distribution of nominative vs. dative subjects, and a fair distribution of accusative vs. dative objects. I also put in one filler between each verb, a stimuli of nouns and adjectives, to secure non-repetitive answers.



The participants were selected by a convenience sample. They were divided into two groups of twenty, i.e. twenty children at the age from 6 to 13, and twenty grown-ups, illustrated in Table 5:<sup>2</sup>

Age:	6	8	9	10	11	13	Adults	Total
girls	4	6	2		1			13 +
boys		2	1	3		1		7 = 20
women							15	15 +
men							5	5 = 20

**Table 5.** Age and sex of the participants.

The experiment was introduced in the following way:

- (4) This is a Funny-game. I am going to show you some pictures, and you are going to tell me what is happening in the pictures. The only thing is that you are not going to do it in Icelandic, you are going to tell me in Funny-language. Funny-language is almost identical to Icelandic, there are only a few words that are different, and you don't have to worry about that because I'm going to teach you those words.

And then each picture was either introduced with the formula:

- (5) In this picture we see a man. What he is doing is called *grilla* 'grill' in Icelandic, but in Funny-language it is called *slobba*. Can you tell me now what is happening in the picture?

Or at the more vague pictures, the following formula was used:

- (6) In this picture we see a man. A lot of things can be said about him. For instance we can use the Icelandic verb *elska* 'love', but in Funny-language that is called *spofia*. Can you tell me now what is happening in the picture?

<sup>2</sup> I tried the experiment with five-year olds but they refused to cooperate, as did some six-year olds. These are not counted as participants of the experiment. However, it is a question whether they were too young to handle the experimental situation, or whether they were too young to know what to do with an unknown verb? I am inclined to think the latter.

The relevant native synonym verb was only used in its infinitive form to secure that the participants were not primed to use the structures we were trying to elicit.

One problem that arose was that speakers almost always answered with the Icelandic progressive "*Maðurinn er að slobba*" 'The man is slobbering', which is an aspectual auxiliary construction with an empty subject slot, resulting in the subject having the same morphological case as the subject of the main verb (*Manninn* (acc) *er að dreyma* and *Manninum* (dat) *er að líða illa*). This is problematic for our study because it requires the participant to know the morphological case of the subject of the main verb before expressing the aspectual auxiliary. Since our participants have probably not made a choice between different morphological cases for the subject, their choice of nominative is probably a choice for the aspectual auxiliary and not a choice for the unknown main verb. This means that the progressive [*vera að V*] is here treated as a control verb, with a fixed subject in nominative case, and not as a raising verb, where the case form of the subject is unspecified, and thereby the use of the progressive may perhaps yield higher rates of nominative subjects than otherwise.

A second problem that arises is that speakers giving an answer in the progressive form may omit the object, meaning that we have not elicited a case marked object. When this happened I repeated the sentence but with the sentence intonation of questions, and pointed at the object. By doing that I always elicited sentences that included objects. In one of the cases the form of the object was the same in accusative and dative. That I solved by telling the participants that the object was owned by the person in the picture, since the possessive reflexive pronoun has different forms for the two cases. Then I started off by repeating their original answer, stopping at a point where I showed, again with intonation, that I expected them to take over. Thereby, I always secured inflection of the object.

#### 4. Discussion

The answers obtained in the experiment can be divided into the following three main groups:

Icelandic verbs	1. group (27,5%)	1a. group (7,5%)	2. group (20%)
	6 children	3 children	2 children
	5 adults		6 adults
Dat	Nom	Nom	Dat
Nom-Acc	Nom-Acc	Nom-Acc	Nom-Acc
Nom-Dat	Nom-Acc	Nom-Dat	Nom-Acc
Dat	Nom	Nom	Dat
Nom-Acc	Nom-Acc	Nom-Acc (Dat)	Nom-Acc
2a. group (7,5%)	3. group (17,5%)	3a. group (10%)	3b. group (10%)
1 child	3 children	2 children	3 children
2 adults	4 adults	2 adult	1 adults
Dat	Dat	Nom	Nom/Dat
Nom-Acc	Nom-Acc	Nom-Acc	Nom-Acc
Nom-Dat	Nom-Acc	Nom-Acc (Dat)	Nom-Acc
Dat	Nom	Dat	Nom/Dat
Nom-Acc	Nom-Acc	Nom-Acc	Nom-Acc

**Table 6.** Classification of the answers.

In group 1, we have the ordinary transitive construction with a subject in nominative and an object in accusative (27,5% of the answers). I have analysed group 1a as a variant of group 1, with the only difference that the object of the third verb is in the dative case (7,5% of the answers). Unexpectedly, one of the child participants of this group has the object of the fifth verb in dative case. Group 2 uses dative subjects with the two emotion verbs, but all objects are in the accusative (20% of the answers). Group 2a is a variant of group 2, but with the object of the third verb in dative (7,5% of the answers). Notice that this is the pattern displayed by the Icelandic verbs. Groups 3, 3a and 3b have mixed answers (37,5% of the answers), either one of the emotion verb is in dative, and the other in nominative, or the participants corrected themselves, and changed from dative to nominative, or more often from nominative to dative. One of the adult participants of group 3a has the object of the third verb in the dative case.

The immediate conclusion to draw from these answers is that roughly two main ways are available to speakers when they assign case to arguments of verbs

that are unknown to them. The first way is to assign structural nominative to subjects and structural accusative to objects, not using the meanings of the unknown verbs as a point of departure. The second way seems to be to assign the same case to the arguments of the unknown verbs as is the morphological case of their known synonyms. Thirdly, some speakers seem to pendulate between these two reactions. Another way to formulate this is that either speakers associate the nonce verbs with the most frequent construction of transitive verbs, i.e. the nom-acc construction (the general schematic transitive construction), or that they proceed from the meaning of the nonce verb (the substantive or verb specific construction), and on the basis of its meaning assign the argument structure and morphological case of the native synonym to the nonce verb. This seems to me to be a reasonable interpretation of the data.

However, the answers of group 1, which are approximately one third of the answers, can be interpreted differently. The participants answering according to that pattern never deviate from the use of the nom-acc construction. New research on the experimental situation of language research has revealed that up to ten fillers are needed to wipe out the impact of structural priming (Bock and Griffin (in press)). This means that a participant is primed to use the same structure in his/her answers as s/he has used in prior answers, or formulated differently that choosing one kind of answer primes the participant to go on to use it. This result of Bock and Griffin (in press) therefore yields another interpretation of the answers of group 1 as plausible: i.e. not that participants proceed from the most frequent transitive construction in Icelandic, but rather that they started off by using the nom-acc construction and were thereby primed to continue to use it (self-priming).

*Structural priming* can also explain the "non-target" dative of *spofsta* 'love', which one of the child participants unexpectedly used in group 2a, as mentioned above. This participant had used dative with the object in the preceding example. This is the only explanation I can offer on the dative of the object of this verb.

The frequency of case forms of arguments for each verb is summarized in the following table:

Verbs	Nom Subj	Dat Subj	Acc Obj	Dat Obj
flokast 'be bored'	23 (52%)	21 (48%)		
slobba 'grill'	40 (100%)		40 (100%)	
kísa 'kick'	40 (100%)		33 (82,5%)	7 (17,5%)
tvíta 'feel bad'	25 (60%)	17 (40%)		
spofta 'love'	40 (100%)		39 (97,5%)	1 (2,5%)

**Table 7.** Case forms of arguments of each verb.<sup>3</sup>

The figures in Table 7 show that there is a strong correlation between the case marking of arguments of nonce verbs and their native synonym verbs. Nonce verbs corresponding to nom-acc verbs were always treated as such, with one exception discussed above. Nonce verbs corresponding to nom-dat verbs were treated as such in 17,5% of the cases, and in the remaining cases they were treated as nom-acc verbs. Nonce verbs equivalent to dative subject verbs in Icelandic were treated as such in 44,2% of the cases, and as nominative subject verbs in 55,8% of the cases.<sup>4</sup>

Notice, however, that subjects of nonce verbs corresponding to nominative subject verbs in Icelandic *never* were assigned dative case. Furthermore, objects of nonce verbs equivalent to accusative object assigning verbs in Icelandic were, with one exception, *never* assigned dative case. Yet another interesting fact is that the subject of *spofta* 'love' is never assigned dative in spite of being an emotion verb. This is hardly a coincidence!<sup>5</sup> If there were no correlation between case

<sup>3</sup> Notice that the figures in this table (and the following) include the corrections from nominative to dative and from dative to nominative. Therefore we get a total of 44 answers for *flokast* in spite of the participants being only 40.

<sup>4</sup> Two adult participants used an accusative subject with the nonce verbs *flokast* 'be bored' and *tvíta* 'feel bad' respectively. Both corrected themselves to dative. This fact is not included in Tables 6 and 7, since I am only using nominative and dative subject verbs as model verbs and am therefore not investigating accusatives. Icelandic also exhibits accusative subjects with verbs of emotion, as mentioned in section 2 above. These have a tendency to change from accusative to dative or in a minority of cases to nominative.

<sup>5</sup> As one anonymous reviewer pointed out, this is not surprising given the distribution of case marking of arguments of psych-verbs in a typological perspective (see Croft 1993). However, I assume that such typological facts are not a part of the speaker's knowledge of his/her

marking of nonce verbs in this experiment and the case marking of their native synonyms then we would not expect such clear-cut statistics; rather we would expect either that all subjects were assigned nominative and that all objects were assigned accusative, or we would expect the distribution of morphological case on arguments to be more evenly spread. These results therefore support my findings in Barðdal (1999a) that one way for novel verbs to acquire argument structure and case is by analogy with only one verb and not with a whole cluster, an argument against high type frequency being a necessary prerequisite for productivity. The findings of Osherson et al. (1990) on induction based on categories further corroborate this hypothesis. They find that people's willingness to generalize about categories is based on the overall similarity between the two categories. As Goldberg and Sethuraman (1999) point out these findings predict that in cases of synonymy only one verb is needed as a model verb and not a whole cluster, since synonymous verbs yield a high rate of overall similarity.

It is a theoretical possibility, however, that the native synonyms were not used as model verbs when assigning case and argument structure to the nonce verbs, but rather a more entrenched schematic construction which happens to have the same case and argument structure as the native synonym, hence it only looks like the verb specific construction has been activated. To this I have two answers: Firstly, the dative subject construction is a low-frequency construction. That was demonstrated in *Table 3* above, where we find oblique subjects to be only 6,1% of all subject tokens. Also, in a list of dative subject verbs in Icelandic (Jónsson 1998) the amount of lexemes is 301.<sup>6</sup> The standard Icelandic dictionary (*Íslensk orðabók handa skólum og almenningi* 1988) contains approximately 8.500 verbs (Kristín Bjarnadóttir p.c.), hence the type frequency of the dative subject construction is approximately 3,5%. Secondly, the native verbs, *leiðast* 'be bored' and *líða illa* 'feel bad', which were the known synonyms we gave, are not parts of bigger verb clusters with a similar meaning; instead they don't have any near-synonyms. Thereby, it is reasonable to assume that the verb specific

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language. It is only by assuming that there are some cognitive processes underlying this case marking distribution, present in all speakers, that we would expect this to have an impact in our study.

<sup>6</sup> This is of course a question of how to count these. Here I only include the lexemes, but including different usages or senses of the lexemes would yield higher percentages. Also adjectives and nouns together with the copula *vera* 'be' and *verða* 'become' are not included, neither for verbs selecting for dative nor nominative subjects.

construction has been activated and that the case and argument structure assigned to our nonce verbs originate in that verb specific construction.

Yet another possibility is that the answers of the participants do not necessarily show that the Icelandic synonymous verbs were used as model verbs when assigning case and argument structure to the nonce verbs, but rather that a speaker confronted with a nonce verb and its synonymous verb first formulated a sentence with the known native verb and then s/he exchanged the native verb for the nonce verb. There are several arguments, however, against such an interpretation of these data. Firstly, if this were the case we would not expect the participants to correct themselves. Approximately 10% of the participants corrected themselves either from dative to nominative or more often from nominative to dative. Secondly, we might expect no deviation from the syntactic pattern of the native verbs, but we have already seen that such deviation is found in the answers (see *Table 6* above). Post-experimental comments from the participants also speak against such an interpretation. For instance, one of the adult participants, in group 3a, who constructed his first emotion verb with a nominative subject and the second one with a dative subject, asked me afterwards what I was investigating. I told him that I was interested in capturing the speaker's own feeling for his/her language, i.e. his/her language intuition. This participant immediately responded by telling me that at one point he got the feeling afterwards that he had said something wrong. When I showed him his answers he corrected the first emotion verb from nominative to dative. We would not expect statements about language intuition if the participants had mechanically formulated a sentence with the native synonymous verb and then exchanged it for the nonce verb. And further, even though we would assume such conscious actions on the behalf of the participants, that process would, however, not necessarily be so different from Isolate Attraction.

Notice, however, that the frequency figures in *Table 7* above reflect facts of language use, namely that nominative case is assigned in majority of cases to subjects, accusative case in majority of cases to objects, and dative in a small minority of cases to subjects, but only to subjects of nonce verbs synonymous to native Icelandic verbs which select for dative subjects. Within the usage-based model we would expect differences in frequency within language use to yield different degrees of entrenchment of different constructions within the mind of the speaker. Since the nom-acc construction is the most frequent one, and therefore the most entrenched construction, we would expect it to be activated

both *most often* in a nonce probe task like this one, and also for verbs which together show the *widest range* of meanings. Conversely, we would expect the dative subject construction to be activated less often and only for certain subgroups of verbs, namely psych-verbs. This means that if the verb specific construction has not been activated, contrary to what I have argued in the previous paragraphs, then a higher level construction, a verb-class specific construction, has to have been activated. Such a verb-class specific construction would not contain a verb class of close synonyms, but rather emotive verbs as opposed to for instance action verbs. Can a nonce probe task like this one bring us any evidence on the existence of constructions at different levels of schematicity? I argue that it can. In the cases where nonce verbs were assigned the case and argument structure of their given native synonyms it is reasonable to assume that a verb specific construction has been activated, however a more abstract construction can, of course, have been activated since the corresponding native verb also belongs to a larger group of verbs in Icelandic. In the other cases where a nonce verb was not assigned the same argument structure construction as its given native synonym it is reasonable to assume that a higher level construction has been activated. This only happened in the case of nonce verbs corresponding to dative subject verbs. Therefore, we can assume that a higher level nom-acc construction exists and has been activated instead of the dative subject construction, while we cannot make the reverse assumption. In order for us to assume that a higher level general/abstract dative subject construction exists we would have to have examples of a nonce verb corresponding to a native nom-acc verb that has been assigned a dative subject instead of the expected nominative. For the dative subject construction, then, we can only assume that it exists as a verb specific construction or as a verb-class specific construction but not as a more general/abstract construction in the mind of Icelandic speakers. In short, either we assume that the verb specific construction has been activated in the mind of speakers when they assign case and argument structure to unknown synonymous verbs, thereby making Isolate Attraction a valid way for new/novel verbs to acquire case and argument structure, or we assume that a verb-class specific construction has been activated and thereby providing evidence for the existence of constructions at different levels of schematicity as psychologically real for speakers of the Icelandic language.

Studies on the role of frequency in productivity have hitherto been confined to morphology. Those studies revealed that both high-frequency and



low-frequency constructions could be entrenched and thereby productive. The research presented in this paper, together with the findings of Barðdal (1999a), further corroborates the correctness of that hypothesis for syntax, and not only morphology.

Let us now separate the figures in *Table 7*, keeping children and adults apart:

Verbs	Nom Subj	Dat Subj	Acc Obj	Dat Obj
<u>Adults</u>				
flokast 'be bored'	9 (40,1%)	13 (59,9%)		
slobba 'grill'	20 (100%)		20 (100%)	
kísa 'kick'	20 (100%)		17 (85%)	3 (15%)
tvíta 'feel bad'	10 (47,6%)	11 (52,4%)		
spofta 'love'	20 (100%)		20 (100%)	
<u>Children</u>				
flokast 'be bored'	14 (63,6%)	8 (36,4%)		
slobba 'grill'	20 (100%)		20 (100%)	
kísa 'kick'	20 (100%)		16 (80%)	4 (20%)
tvíta 'feel bad'	15 (71,4%)	6 (28,6%)		
spofta 'love'	20 (100%)		19 (95%)	1 (5%)

**Table 8.** Case forms of arguments of each verb, for adults and children.

There is one clear difference between adults and children in the statistics in Table 8. Adults have dative subjects with *flokast* and *tvíta* in 52-60% of the cases, while the same figure for the children is only 28-36%. This might be taken as an early indication of a language change, implying a decrease in the amount of oblique subjects in Icelandic. However, such an interpretation is not warranted, in my view, by the data. Firstly, children are still acquiring language, and acquisition data suggest that there is a huge variation in the age of children when having reached the stage of mastering oblique subjects (Gunnarsdóttir 1996). Secondly, it is possible that children, to a larger degree than adults, when faced with tasks of different kinds, have a tendency to work out a strategy and then, if it is successful, to stick to it. Thirdly, and most convincingly, it is well-known that low-frequency constructions that are productive in adult language are not productive in child language (Bybee and Slobin 1982, Bybee and Moder 1983). At least not in the language of younger children, presumably because children

haven't received enough input of the low-frequency construction in question (see Ragnarsdóttir, Simonsen and Plunkett 1999). The figures in *Table 8* are consistent with such an explanation.<sup>7</sup>

In this context, it is important to point out that the concept of productivity is used differently by different scholars. At least the following six definitions are found in the literature. Productivity is used synonymously with:

- (7) a. "high frequency".  
 b. "regular".  
 c. "default".  
 d. "occurring with new/novel items".  
 e. "spreading to already existing items".  
 f. "having a meaning" in opposition to "historical relics".

In fact, most of these uses of *productivity* are discernable in Bybee 1995, in which she gives an overview of some of the discussion on productivity within morphology. Bybee herself, at the end of her paper, suggests that d) above should be regarded as the defining criteria.

These six definitions do not always coincide with each other. When it comes to the productivity of the dative subject construction, this experiment has not given us anything substantial to draw conclusions from, since one goal of the experiment was to elicit the construction under consideration. Another kind of experiment is needed to decide on the matter, presumably one where the dative subject construction can be found to be spontaneously used. The dative experiencer construction is infrequent in Icelandic, it is hardly found with new or novel verbs, but in the history of Icelandic and in modern Icelandic it attracts already existing verbs, and it can be elicited in a nonce-verb experiment like this one. Recall also the post-experimental comment discussed above, where one of the participants told me that he at one point had the feeling that he had said something wrong, and when shown the answers, he corrected himself from a nominative to dative subject. This comment I take as an indication that

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<sup>7</sup> It is interesting that the frequency of the dative subject construction differs from the frequency of the data investigated by Bybee and her colleagues and by Ragnarsdóttir et al. in that they examined the formation of past tense forms, where the low type frequency constructions, i.e. strong verbs, exhibited very high token frequency (see Ragnarsdóttir et al. (1999:fn.10), while the dative subject constructions is both low in type and token frequency.

constructions with dative subjects are not non-productive patterns that exist as historical relics in Icelandic. On the contrary, the distinction between dative and nominative subjects has a meaning connected to it, a meaning which is psychologically real for speakers of Icelandic.

## 5. Summary

This paper has reported on a pilot study of nonce verbs in Icelandic and the morphological case they assign to their arguments. The study is partly motivated by the fact that novel verbs seem to be able to acquire case and argument structure in analogy to a single model verb (Low type frequency) instead of a whole cluster (High type frequency), which has been assumed in the literature (Goldberg 1995). Another goal of the study was to apply the tools of the usage-based model to data within the syntactic field, tools which have hitherto almost exclusively been used on morphology.

Both children and adults participated in the experiment, a total of 40. They were confronted with a picture of an activity or an emotive state, presented with a nonce verb and given its meaning in the form of a synonym, and finally asked to tell the researcher what was happening in the picture and to use the nonce verb. The results were clear-cut. Either the participants used the nom-acc transitive construction, or they assigned the morphological case of the known synonym to the arguments of the nonce verbs. However, there is a possibility that a verb-class specific construction was activated in the mind of the speakers and not the verb specific construction since the known synonyms are also members of larger verb classes of Icelandic. The fact that the nom-acc construction was assigned to nonce verbs corresponding to dative subject verbs speaks in favour of the assumption that the nom-acc construction exists as a higher level abstract/general construction. The experiment further showed that a high level more abstract/general dative subject construction cannot be assumed, but only verb-class specific construction. On such an interpretation, the experiment provides evidence for the existence of constructions at different levels of schematicity as psychologically real in the mind of speakers of Icelandic.

A difference between children and adults was also found, in that adults used dative subjects at the appropriate places more often than children. A possible interpretation is that this is either due to children not having acquired fully this property of Icelandic, or that they weren't really thinking between

answers, but rather had found a strategy that worked and were sticking to it. A more probable explanation, though, is that the construction is only productive in adult language due its low-frequency. In any case, more research is needed to decide on the matter.

Finally, this pilot study has revealed that there is a semantic distinction between nominative and dative subjects and that this distinction is psychologically real for (at least adult) speakers of Icelandic.

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