Passive in Danish, English, and German

Stefan Müller
Freie Universität Berlin

Bjarne Ørsnes
Freie Universität Berlin

Proceedings of the 20th International Conference on
Head-Driven Phrase Structure Grammar

Freie Universität Berlin

Stefan Müller (Editor)

2013

Stanford, CA: CSLI Publications

pages 140–160

Keywords: passive, Danish, English, German, impersonal passive, case

Müller, Stefan & Bjarne Ørsnes. 2013. Passive in Danish, English, and German. In Stefan Müller (ed.), *Proceedings of the 20th International Conference on Head-Driven Phrase Structure Grammar, Freie Universität Berlin*, 140–160. Stanford, CA: CSLI Publications. DOI: 10.21248/hpsg.2013.8.

Abstract

We show how variation in the passive in Danish, English, and German can be accounted for. The three languages differ along the following dimensions:

- the existence of a morphological passive in Danish
- a subject requirement in Danish and English resulting in expletive insertion in impersonal constructions in Danish and absence of impersonal passives in English
- the possibility to promote the secondary object to subject in Danish

The differences are accounted for by differences in the structural/lexical case distinction and by mapping processes that insert expletives in Danish. The passive in general is accounted for by a lexical rule that is uniform across languages and hence captures the generalization regarding passive.

1 The Phenomenon

In the following subsections we examine various properties of passives in which Danish, English, and German differ. We look at the morphological passive in Danish in Section 1.1, compare the personal and impersonal passives in the three languages in Section 1.2, and examine the possibility to promote the objects in passives of ditransitive constructions in Section 1.3.

1.1 Morphological and Analytic Forms

Danish has two basic variants of passives. The first one is an analytic form with the auxiliary *blive* and a participle (1b) and the second one is a morphological passive that is formed with the suffix *-s* (1c,d). (1c) shows an example of the passive in the present tense form and (1d) shows one in the past tense form:

(1) a. Peter læser avisen.
Peter reads newspaper.DEF
'Peter is reading the newspaper.'

b. Avisen bliver læst af Peter.
newspaper.DEF is read by Peter
'The newspaper is read by Peter.'

c. Avisen læses af Peter.
newspaper.DEF read.PRES.PASS by Peter
'The newspaper is read by Peter.'

d. Avisen læstes af Peter.
newspaper.DEF read.PAST.PASS by Peter
'The newspaper was read by Peter.'

The morphological passive may also apply to infinitives:

(2) Avisen skal læses hver dag.
newspaper.def must read.INF.PASS every day
'The newspaper must be read every day.'

The morphological passive and its analytical counterpart are not equal in their distribution (see for instance Bjerre & Bjerre, 2007 and Engdahl, 2001), but we will not discuss the differences here.

English and German do not have morphological passives. The only possible forms are the analytic ones that are shown in (3):

(3) a. The paper was read.
b. Der Aufsatz wurde gelesen.
the paper.NOM was read

1.2 Personal and Impersonal Passives

We already saw instances of the personal passive in (1b) and (3). The subject in personal passives can be an NP as in (1b–d) and (3) or a clause as in (4a) or an infinitival VP as in (4b).

(4) a. At regeringen træder tilbage, bliver påstået.
that government.DEF resigns PART is claimed
'It is claimed that the government resigns.'
b. At reparere bilen, bliver forsøgt.
to repair car.DEF is tried
'It is tried to repair the car.'

The following example from Dalrymple & Lødrup, 2000, p. 108 shows that sentential objects can be promoted to subject in English too:

(5) That the earth is round was not believed.

Often, however, sentential subjects are extraposed and an expletive *it* takes the subject position as in the translations of the Danish examples in (4).

As Dalrymple & Lødrup (2000, p. 109) point out, there are verbs that take a sentential complement and allow for a passive with *it* together with a sentential complement without allowing a passive with a sentential subject.

(6) a. It was hoped that it would rain.
b. * That it would rain was hoped.

It is interesting to note that verbs like *hope* do not take NP objects (7) and hence analyses that try to analyze (6a) as an instance of the passive of the pattern *NP was verb* in which the NP slot is filled by *it* + extraposed clause are not viable.

(7) * I hoped it.

Apart from personal passives, German and Danish allow for impersonal ones. (8) shows German examples and (9) the Danish analogues.

(8) weil noch gearbeitet wird
because still worked is
'because there is still working there'

(9) a. fordi der bliver arbejdet
because EXPL is worked
'because there is working'

b. fordi der arbejdes
because EXPL work.PASS
'because there is working'

Danish differs from German in requiring an expletive subject pronoun. Without the expletive pronoun the sentences in (9) are ungrammatical, as (10) shows:

(10) a. * fordi bliver danset
because is danced

b. * fordi danses
because dance.PASS

German on the other hand does not permit an expletive as (11) shows:[1]

(11) * weil es noch gearbeitet wird
because EXPL still worked is

The reason for this difference is a typological difference between the languages: Danish is an SVO language while German is an SOV language. Danish, like English, requires the subject position to be filled. While English simply does not allow for passives of mono-valent verbs, Danish inserts an expletive subject. English passivizations like (6a) are special since the sentential complement is not realizable as subject but an expletive is inserted.

The examples in (8) and (9) show passives of mono-valent verbs but of course bi-valent intransitive verbs like the German *denken* ('think') and Danish *passe* ('take care of') also form impersonal passives:

(12) dass an die Männer gedacht wurde
that PREP the men thought was
'that one thought about the men'

(13) a. at der passes på børnene
that EXPL take.care.of.PRES.PASS on children.DEF
'that somebody takes care of the children'

b. at der bliver passet på børnene
that EXPL is taken.care.of on children.DEF
'that somebody takes care of the children'

[1]German has expletives, but these are positional expletives that are impossible in verb final clauses. Positional expletives are independent of the passive. On positional expletives in Danish, German, and Yiddish see Müller & Ørsnes, 2011.

1.3 Primary and Secondary Objects

While German and English only allow one of the objects to be promoted to subject in passives with the canonical auxiliary (German the accusative, English the primary object, which would be the dative in German), both objects can be promoted to subject in Danish.[2] The following German examples show that the dative object cannot be promoted to subject in passives with *werden*:

(14) a. weil der Mann dem Jungen den Ball schenkt
because the man.NOM the boy.DAT the ball.ACC gives.as.a.present
'because the man gives the boy the ball as a present'

b. weil dem Jungen der Ball geschenkt wurde
because the boy.DAT the ball.NOM given.as.a.present was
'because the boy was given the ball as a present'

c. * weil der Junge den Ball geschenkt wurde
because the boy.NOM the ball.ACC given.as.a.present was
Intended: 'because the ball was given to the boy as a present'

The same is true for the secondary object (the transferred object) in English: While the primary object can be promoted to subject as in (15a), promoting the secondary object as in (15b) is ungrammatical.[3]

(15) a. because the boy was given the ball

b. * because the ball was given the boy

The intended information structural effect can be achieved though by using the dative shift construction in (16a) and passivizing the verb that takes an NP and a PP object:

(16) a. because the man gave the ball to the boy

b. becaue the ball was given to the boy

Danish allows for the promotion of either argument:

(17) a. fordi manden giver drengen bolden
because man.DEF gives boy.DEF ball.DEF
'because the man gives the boy the ball'

b. fordi drengen bliver givet bolden
because boy.DEF is given ball.DEF
'because the boy is given the ball'

c. fordi bolden bliver givet drengen
because ball.DEF is given boy.DEF
'because the ball is given to the boy'

[2]We follow Pollard & Sag (1992, p. 280) in using the terms primary and secondary object rather than direct and indirect object here. The primary object corresponds to the NP that is realized next to the verb in English and the secondary object to the other one. The primary object hence is what usually is called the indirect object, that is, the recipient, which is realized in the dative in German.

[3]Such passivizations are possible in some English dialects. We assume that these dialects can be analyzed in parallel to the analysis of Danish that we suggest below.

2 The Analysis

We analyze the passive crosslinguistically as the suppression of the most prominent argument with different possibilities of object promotion. The representation of arguments is discussed in Section 2.1, the lexical rule for argument suppression is discussed in Section 2.2, Section 2.3 deals with the promotion of objects, Section 2.4 with impersonal passives and expletive insertion, and Sections 2.5–2.8 with the passive auxiliary, the morphological passive, the expression of the agent, and the perfect, respectively.

2.1 Argument Structure and Valence

We follow Pollard & Sag (1994) in assuming a list-valued feature for the representation of valence information (here ARG-ST). For instance (18a,b) shows the ARG-ST values for the verb *dance* and the transitive verb *read*.

(18) ARG-ST

a. dance ⟨NP[*str*]⟩

b. read ⟨NP[*str*], NP[*str*]⟩

The values for the respective Danish and German lexical items are identical.

str is the abbreviation for structural case. We follow Haider (1986) in assuming that dative and genitive objects in German have lexical case while nominative and (most) accusative arguments of verbs get their case structurally.

The members of the ARG-ST list are mapped to valence features. For German finite verbs all arguments are mapped to the COMPS list (Pollard, 1996), for English and Danish the first element is mapped to the valence feature for the subject (SPR in our analysis) and the other elements are mapped to the COMPS list (see Pollard & Sag, 1994 on English, see Section 2.4 on impersonals in Danish). Danish and English are SVO languages and the respective dominance schemata will take care of the preverbal realization of the subject and the postverbal realization of the non-subjects. German is an SOV language and allows for the combination of the verb with its arguments in any order, that is, for a verb + subject and object the orders (subj (obj verb)) and (obj (subj verb)) are allowed. This is done by a version of the Head-Complement Schema that does not restrict the order of combination (see Müller, 2013c, p. 130; To appear).

2.2 Designated Argument Reduction

We follow the implementation of Haider's ideas (1986) by Heinz & Matiasek (1994) and Müller (2002, Section 3.2; 2003) in assuming a special list-valued feature DESIGNATED ARGUMENT (DA) that contains the designated argument of a verb. The designated argument is the subject of transitive and unergative verbs.

The DA value of unaccusative verbs is the empty list. Passive is analyzed as a lexical rule that applies to a verbal stem and subtracts the DA list from the argument structure list of the input verb or stem. Since we do not focus on the difference between unaccusative and unergative verbs in this paper, we will not discuss the designated argument any further and focus on transitive and unergative verbs instead.[4]

(19) shows the ARG-ST list for *tanzen* ('to dance'), *lesen* ('to read'), *schenken* ('to give as a present'), *helfen* ('to help'):

(19)

	ARG-ST	DA
a. tanzen ('dance', unerg):	⟨ 1 NP[*str*]⟩	⟨ 1 ⟩
b. lesen ('read', trans):	⟨ 1 NP[*str*], NP[*str*]⟩	⟨ 1 ⟩
c. schenken ('give', ditrans):	⟨ 1 NP[*str*], NP[*ldat*], NP[*str*]⟩	⟨ 1 ⟩
d. helfen ('help', unerg):	⟨ 1 NP[*str*], NP[*ldat*]⟩	⟨ 1 ⟩

We follow Meurers (1999) and Przepiórkowski (1999) in assuming that the first element in the ARG-ST list of a verbal head that has structural case gets nominative and all other elements in the ARG-ST list that have structural case get accusative (for a formalization of case assignment see Meurers, 1999; Przepiórkowski, 1999). Lexical case is not affected by passivization, so for instance the dative arguments of *schenken* and *helfen* stay in the dative even when the verb is passivized. (20) shows an example:

(20) a. weil der Mann ihm geholfen hat
because the man.NOM him.DAT helped has
'because the man has helped him'

b. weil ihm geholfen wurde
because him.DAT helped was
'because he was helped'

(22) shows the result of the application of the participle formation rule in (21):

(21) Lexical rule for the formation of the participle (preliminary):

$$\begin{bmatrix} \text{HEAD} & \begin{bmatrix} \text{DA } \boxed{1} \\ \textit{verb} \end{bmatrix} \\ \text{ARG-ST } \boxed{1} \oplus \boxed{2} & \\ \textit{stem} & \end{bmatrix} \mapsto \begin{bmatrix} \text{ARG-ST } \boxed{2} \\ \textit{word} \end{bmatrix}$$

The designated argument is blocked. The ARG-ST list of the participle is either empty or starts with a former object:

[4] But see Haider, 1986 and the other quoted literature on unaccusative verbs.

(22) ARG-ST

a. getanzt ('danced', unerg): $\langle\rangle$

b. gelesen ('read', trans): $\langle$NP[*str*]$\rangle$

c. geschenkt ('given', ditrans): $\langle$NP[*ldat*], NP[*str*]$\rangle$

d. geholfen ('helped', unerg): $\langle$NP[*ldat*]$\rangle$

Since the first element on the ARG-ST list with structural case gets nominative, we have an explanation for the passive in (3b).

The respective argument structures for the English verbs are given in (23):

(23) ARG-ST

b. dance (unerg): $\langle$NP[*str*]$\rangle$

c. read (trans): $\langle$NP[*str*], NP[*str*]$\rangle$

d. give (ditrans): $\langle$NP[*str*], NP[*str*], NP[*lacc*]$\rangle$

e. help (trans): $\langle$NP[*str*], NP[*str*]$\rangle$

English differs from German in not having dative arguments. The object of *help* has structural case just like the object of *read*. This explains the contrast between (20b) and its translation. The NP *ihm* keeps its dative case, that is, it is not realized as a subject. (20b) is an impersonal passive. In English, by contrast, the NP *he* is realized as subject and is assigned nominative. The case of the secondary object of the ditransitive verb *give* is a lexical accusative. This will be explained in the following subsection.

2.3 Primary and Secondary Objects

Danish is similar to English in not having a dative case, but it is different from both German and English in allowing the promotion of both objects of ditransitive verbs. We assume that the difference is best captured by assuming that in Danish both objects have structural case while in German and English the secondary object has lexical case. (24) shows the ARG-ST values of the respective Danish verbs:

(24) ARG-ST

a. danse ('dance', unerg): $\langle$NP[*str*]$\rangle$

b. læse ('read', trans): $\langle$NP[*str*], NP[*str*]$\rangle$

c. give ('give', ditrans): $\langle$NP[*str*], NP[*str*], NP[*str*]$\rangle$

d. hjælpe ('help', trans): $\langle$NP[*str*], NP[*str*]$\rangle$

If the personal passive is seen as the promotion of an object that has structural case, the Danish facts and the differences between Danish and the other languages under consideration are explained: Danish has two objects with structural case and hence

both of them can be promoted to subject as in (17b) and (17c). German and English have only one object with structural case, the primary object and hence only the primary object can function as the subject in passives.

The lexical rule in (21) does not account for the passive variants in which a secondary object is promoted to subject. For such a promotion the second object with structural case has to be placed before the first object with structural case in the ARG-ST list. This can be achieved by non-deterministically deleting an NP with structural case from 2 in (21) and adding it at the beginning of 2. *delete* and *append* are standard relational constraints and their formulation will not be given here. However, it is possible that 2 does not contain any NPs with structural case at all. Passivization then results in impersonal passives. We therefore formulate (25) as the general lexical rule for passives, where *promote* is a relational constraint that identifies its arguments 2 and 3 if 2 does not contain an NP with structural case and otherwise deletes an NP with structural case from 2 and appends it at the beginning of 2 and returns 3:

(25) Passive lexical rule for Danish, English, and German:

$$\left[\begin{array}{ll}\text{HEAD} & \left[\begin{array}{l}\text{DA } \boxed{1}\\ \textit{verb}\end{array}\right]\\ \text{ARG-ST} & \boxed{1} \oplus \boxed{2}\end{array}\right] \mapsto \left[\text{ARG-ST } \boxed{3}\right] \wedge \text{promote}(\boxed{2}, \boxed{3})$$

Promote is defined as follows:

(26) promote(2, 3) := delete(4 NP[*str*], 2, 5) ∧
append(⟨4⟩, 5, 3).
promote(2, 3) := 2 = 3 otherwise.

In the case of (24c) 2 is $\langle$ NP[*str*]$_i$, NP[*str*]$_j$ $\rangle$. 4 can be either NP$_i$ or NP$_j$ and 5 can be $\langle$ NP$_j$ $\rangle$ or $\langle$ NP$_i$ $\rangle$, respectively. The result of appending a list with the deleted element 4 with the list 5 will be either $\langle$ NP[*str*]$_i$, NP[*str*]$_j$ $\rangle$ or $\langle$ NP[*str*]$_j$, NP[*str*]$_i$ $\rangle$.

2.4 Impersonal Passives

As was shown in (22), German has passive participles that have an empty ARG-ST list and participles with an ARG-ST that just contains an NP with lexical dative. Since German does not require a subject, these lexical items can be used in impersonal passive constructions. English does not allow impersonals due to the subject requirement.[5] Danish has a different strategy: It solves the subject problem by inserting an expletive.

[5] As was pointed out in the data section there are passives with an expletive *it* and an extraposed complement clause. Since there is no general ban on sentential subjects in English, these passives seem to be idiosyncratic and a special lexical rule that is a fusion of the passive lexical rule and the *it* extraposition lexical rule by Kim & Sag (2005) seems to be needed.

We assume that Danish differs from German and English in introducing an expletive into the SPR list in the mapping from ARG-ST to SPR and COMPS. German maps all arguments (of finite verbs) to the COMPS list, English and Danish map the first NP/VP/CP to SPR and the remaining arguments to COMPS, and Danish inserts an expletive, if there aren't any elements that could function as subjects. See also Bjerre & Bjerre, 2007, Section 4.3 on expletive insertion in Danish.

So (27) shows the ARG-ST lists for the Danish morphological passives and the participle forms. For *danse* we get an empty ARG-ST list, but due to the mapping constraints we get an NP_{expl} in the SPR list of *danset/danses*. (27) shows the respective ARG-ST values and also the SPR and COMPS values:

(27)

	ARG-ST	SPR	COMPS
a. danset/danses (unerg):	$\langle\rangle$	$\langle\ \text{NP}_{expl}\ \rangle$	$\langle\rangle$
b. læst/læses (trans):	$\langle \text{NP}[str] \rangle$	$\langle \text{NP}[str] \rangle$	$\langle\rangle$
c. givet/gives (ditrans):	$\langle \text{NP}[str], \text{NP}[str] \rangle$	$\langle \text{NP}[str] \rangle$	$\langle \text{NP}[str] \rangle$
d. hjulpet/hjælpes (trans):	$\langle \text{NP}[str] \rangle$	$\langle \text{NP}[str] \rangle$	$\langle\rangle$

2.5 The Auxiliary

The lexical item for the passive auxiliary is similar for all three languages: The passive auxiliary is a raising verb:

(28) Passive auxiliary for Danish, German and English:

$$\left[\ \text{SYNSEM|LOC|CAT|ARG-ST}\ \boxed{1} \oplus \boxed{2} \oplus \left\langle \begin{bmatrix} \text{VFORM} & \textit{ppp} \\ \text{DA} & \langle\ \text{XP}_{ref}\ \rangle \\ \text{SPR} & \boxed{1} \\ \text{COMPS} & \boxed{2} \end{bmatrix} \right\rangle \ \right]$$

German forms a predicate complex, that is, a complex consisting of the participle and the passive auxiliary. The arguments of the participle (1 and 2) are attracted by the passive auxiliary (see Hinrichs & Nakazawa, 1994 on argument attraction). The formation of such predicate complexes is licensed by a special schema, the Head-Cluster Schema that allows non-head daughters to be unsaturated. Danish and English do not allow for complex formation. The respective grammars do not have a Head-Cluster Schema and hence the only way the passive auxiliary can be combined with the participle is via the Head-Complement Schema. Therefore the verbal argument has to have an empty COMPS list, that is, 2 in (28) is the empty list for Danish and English. Hence, we have explained how Danish and English embed a VP and German forms a verbal complex although the lexical item of the auxiliary does not require a VP complement.[6]

[6]To rule out VP complements in German, the lexical item for German has to be constrained further: the verbal complement is required to be LEX +.

The specification of the DA value of the participle excludes the embedding of unaccusatives, which have an empty DA value and of weather verbs, which have a non-referential element in the DA list.[7]

2.6 The Morphological Passive

We assume that the same lexical rule that accounts for the participle forms can be used for the morphological passives in Danish, modulo differences in the realizations of affixes of course. For the morphological passive it is assumed that the DA of the input to the lexical rule has to contain a referential XP. As was discussed in the previous section, this excludes morphological passives of unaccusatives and weather verbs.

2.7 Agent Expressions

We follow Höhle (1978, Chapter 7) and Müller (2003, Section 5) and treat the agent expressions (i.e. the *af*/*by*/*von* phrases, respectively) as adjuncts. See Müller, 2013c, Section 17.1.8 for references on this topic and further discussion.

2.8 Perfect

The highlight of the analyses for German is that only one participle is needed for both the analysis of the passive and the analysis of the perfect (Haider, 1986). The trick is that the designated argument is blocked but represented in the lexical item of the participle. The passive auxiliary leaves the designated argument blocked, while the perfect auxiliary unblocks it. So, in addition to the passive in (3b) we have the perfect in (29) and both sentences involve the same lexical item for *gelesen* ('read'):

(29) Er hat den Aufsatz gelesen.
he has the paper read
'He read the paper.'

If one wanted to apply the German analysis to Danish and English, one would have to assume a complex predicate analysis like the one depicted in (30a) for Danish and English perfect constructions, since otherwise one would know about the reactivated subject too late and only phrases like *given to Mary* in (30c) would be licensed.

(30) a. He [has given] the book to Mary.
b. He has [given the book to Mary].
c. The book was [given to Mary].

[7] The DA feature also plays a role for auxiliary selection (Heinz & Matiasek, 1994, Section 6.6.2). By default all verbs with a designated argument take *haben* ('have') and those without one take *sein* ('to be'). Since weather verbs take *haben* as auxiliary, we assume their DA list to contain their expletive subject.

However, the complex predicate analysis faces several problems for Danish and English. As was shown in Section 1.2, expletives are inserted in Danish impersonal constructions. These expletives are specific for the passive (and presentational constructions) and absent in perfect constructions as (31), that is outside presentational constructions:

(31) a. at der bliver arbejdet
that EXPL is worked
'that there is working'

b. * at Peter har arbejdet der
that Peter has worked EXPL

c. * at der har arbejdet Peter
that EXPL has worked Peter

(31b) would be expected if the deblocked element (the NP for *Peter*) were to be appended at the beginning of the ARG-ST list as in the analyses of German and (31c) would be expected if it were to be appended after the expletive. (31b) is grammatical with *der* as a locative adverbial, but not with an expletive. The pattern in (31c) is possible in presentational constructions, but not with definite NPs like Peter. In any case the problem would be that all perfect utterances are predicted to contain an expletive pronoun if this pronoun is part of the valence specification of the participle and if it is inherited by the auxiliary in a complex predicate analysis.

In addition Danish has the so-called *Complex Passive* in which a verb is allowed to govern a participle as part of a passive construction, but not as part of an active construction. (32) illustrates.

(32) at Bilen blev forsøgt repareret
that car.DEF was tried repaired
'that an attempt was made to repair the car'

The verb *forsøgt* ('to try') takes an infinitive in the active and not a particple as in (33b):

(33) a. at Peter har forsøgt at reparere bilen
that Peter has tried to repair car.DEF
'that Peter tried to repair the car'

b. * at Peter har forsøgt repareret bilen
that Peter has tried repaired car.DEF

If one wants to find a solution with just one lexical item for the participle, one needs a way to distinguish participle items that can appear both in the perfect and in the passive from those forms that can appear in the passive only when they select a participle (like the *forsøgt* in (32)). This could be achieved by using a VOICE feature. The value of the VOICE feature would be *passive* for all those lexical items that can appear in the passive only and underspecified for all other participle items. The perfect auxiliary would require the VOICE value to be *perfect*

and hence it would be explained why the respective lexical item for *forsøgt* could not be embedded under *har* ('to have').

The problem with the expletives could be solved by stipulating that the perfect auxiliary attracts arguments from the ARG-ST list rather than from the SPR and COMPS list. Since expletives are not on the ARG-ST list, they would not get in the way.

There is a remaining problem for the complex predicate analysis: VP fronting. VP fronting is possible in German as well and the case assignment in the fronted VP depends on whether the VP is embedded under a passive or a perfect auxiliary. (34) shows examples of partial frontings. (34b) involves VP fronting in a passive sentence and (34c) is an example of VP fronting in an active sentence. As the glosses show, the underlying object is nominative in the passive and accusative in the perfect.

(34) a. Gelesen wurde der Aufsatz schon oft.
read was the paper.NOM yet often
'The paper was read often.'

b. Der Aufsatz gelesen wurde schon oft.
the paper.NOM read was yet often
'The paper was read often.'

c. Den Aufsatz gelesen hat er schon oft.
the paper.ACC read has he yet often
'He read the paper often.'

Meurers (1999) found a way to deal with case assignment into fronted VPs, so this data is not a problem for German. See also Meurers, 2000 and Meurers & De Kuthy, 2001. However, this approach does not extend to English/Danish, since it is not just the case assignment that is different in active and passive sentences but rather the configuration, that is, the position in which objects and subjects are realized: for instance, in (35b) it is clear that *the book* is an object since it is realized in object position, whereas *der Aufsatz*/*den Aufsatz* in (34b,c) is part of the fronted VP independent of its case/grammatical function.

(35) a. The book should have been given to Mary and
[given to Mary] it was.

b. He wanted to give the book to Mary and
[given the book to Mary] he has.

the book is a member of the COMPS list of *given* in (35b) while the correponding *it* in (35a) is on the SPR list of *given*. In comparison the NP *der Aufsatz* is a member of the COMPS list of *gelesen* in both (34b) and (34c).

So, unless we find a clever way to underspecify the different mappings to SPR and COMPS, we have to assume two lexical entries for the particple forms in SVO languages like Danish and English.[8]

[8] An alternative that assumes just one lexical item and does a remapping of arguments in the syntax is discussed in Section 3.

However, as was discussed above, the analysis of the German passive and perfect can be maintained and is compatible with a more general analysis that also captures the passive in Danish and English.

3 Alternatives

There are several different passive analyses in the framework of HPSG by now. Those that were around before 2001 are discussed in Müller, 2002, Section 3.3 and the discussion will not be repeated here. However, there are two interesting new proposals. We will discuss the one by Tseng (2007) about passives in English, which makes fundamental aussumptions differing significantly from standard assumptions in lexicalist theories like HPSG. The second approach is by Bjerre & Bjerre (2007) and deals explicitly with Danish. This proposal differs from previous proposals by including a representation of semantic facts that are relevant for the passive in Danish. Due to space limitations we will not discuss this proposal here but refer the reader to Müller & Ørsnes (In Preparation). We now turn to Tseng's suggestion.

While passive is usually analyzed as a lexical operation in the framework of HPSG, Tseng (2007, Section 3.1) suggests an analysis in which the valence information is reorganized in syntax. For the personal passive in English he suggests the schema in Figure 1. This construction takes a word or phrase that selects for

$$\left[\begin{array}{l} \textsc{vform}\ \textit{passive} \\ \textsc{subj}\ \left\langle \textsc{np}_{\boxed{1}} \right\rangle \\ \textsc{comps}\ \left\langle (\textsc{pp}[\textit{by}]_{\boxed{2}}) \right\rangle \\ \textit{np-passive-cx} \end{array}\right] \\ \Big| \\ \left[\begin{array}{l} \textsc{vform}\ \textit{psp} \\ \textsc{subj}\ \left\langle \textsc{np}_{\boxed{2}} \right\rangle \\ \textsc{comps}\ \left\langle \textsc{np}_{\boxed{1}} \right\rangle \end{array}\right]$$

Figure 1: Schema for passive according to Tseng (2007)

a subject and an object and changes the valence properties of the word or phrase in such a way that the new subject is linked to the former object and a *by*-PP is selected as a complement that is coindexed with the subject of the dominated word or phrase. The schema would apply to the word *read* in (36a) and to the phrase *given the ball* in (36b).

(36) a. The book was read by Mary.
b. The boy was given the ball.

Tseng provides two further schemata to deal with prepositional passives: one for complement prepositions and one for adjunct prepositions.

There are two major problems with his proposal: first, the status of intermediate phrases is unclear, and second the interaction of the argument structure change in the passive and derivational morphology cannot be explained. We will discuss these points in the following subsections.

3.1 The Status of Intermediate Phrases

In order for the passive schema to be applicable, it must be possible to derive a phrase *given the ball* with a verb that selects two complements as in (37):

(37) He has given the boy the ball.

The analysis of (36b) is shown in Figure 2: The phrase *given the ball* is formed and

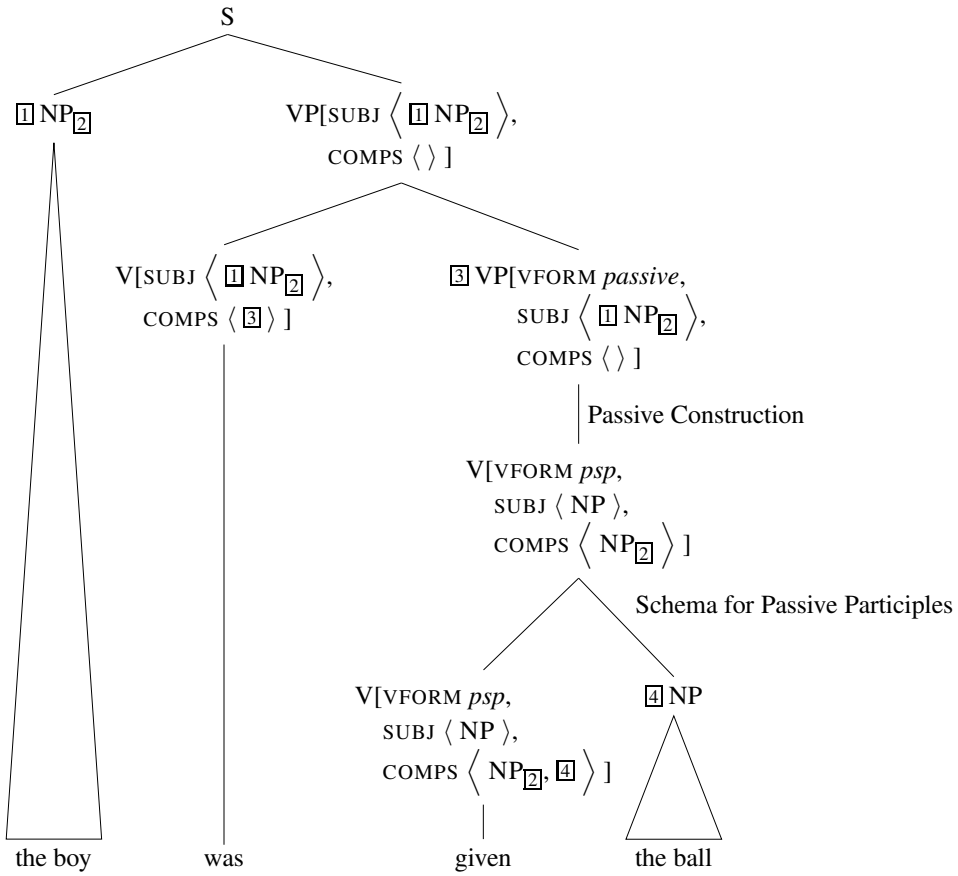

Figure 2: Analysis of *The boy was given the ball* according to Tseng (2007)

then the remaining object ($NP_{\boxed{2}}$) is mapped to subject by the NP Passive Construction. The auxiliary combines with the licensed passive VP. The subject is raised by

the auxiliary and then combined with the VP *was given the ball*.

The problem now is that the phrase *given the ball* is usually not licensed by any grammar for English. Pollard & Sag (1994) and most subsequent work assume flat structures in which a V^0 is combined with all its complements and even if one assumes binary branching structures as we do, *given the ball* would never be licensed as a constituent. So in order to license this constituent one would need a separate schema that basically combines an active item with its arguments as if it were a passive item. This schema would behave like a combination of our passive lexical rule (argument reducing) plus the normal combinatory schemata. To see this compare Figure 2 with Figure 3. The Passive Lexical Rule applies to

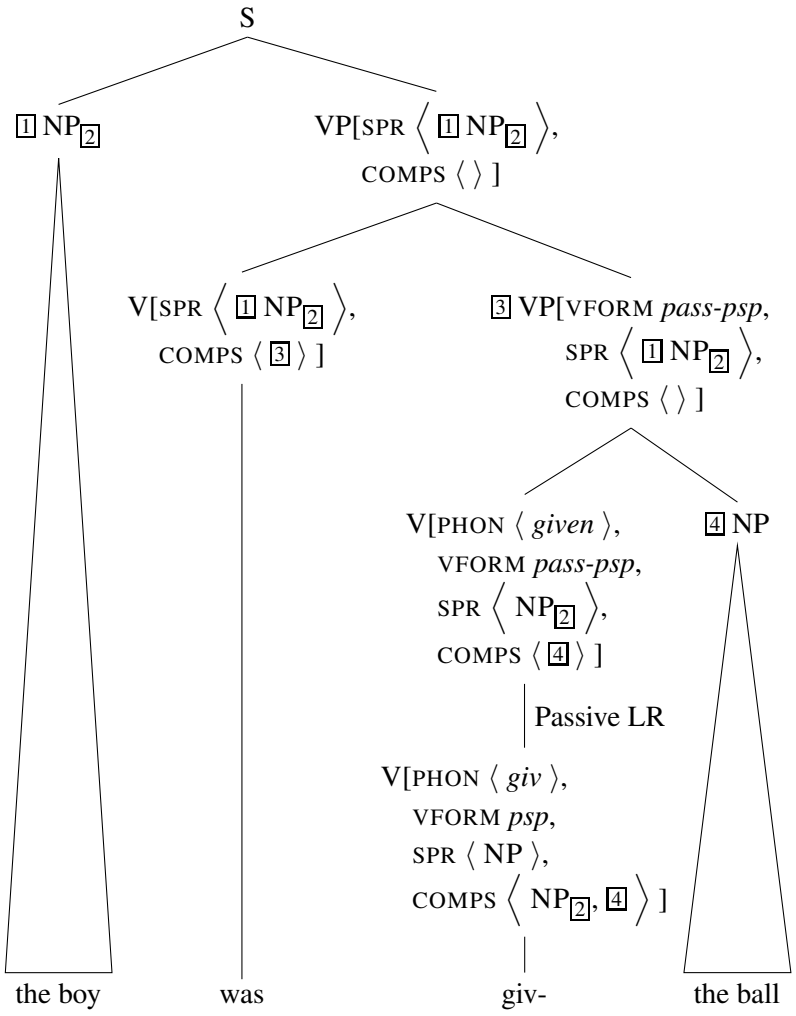

Figure 3: Lexical analysis of *The boy was given the ball*

the verbal stem *giv-* and adds the inflectional affix. The subject is suppressed and the former object being the first element on the ARG-ST list of the licensed sign

is mapped to SPR. The lexical item for *given* is combined with the object via the usual head complement schema and the rest of the analysis is parallel to Tseng's analysis that was discussed above.

To sum up: Since Tseng's analysis requires special mechanisms to license partial constituents that are not needed anywhere else, the analysis is more complex than the lexical one.

3.2 Interaction with Derivational Morphology

A very old argument for a lexical analysis of the passive was provided by Dowty (1978, p. 412) and Bresnan (1982, p. 21). It is a classical level ordering argument. If certain processes are known or assumed to apply at a certain level and it can be shown that another process feeds such processes, than the latter process has to be ordered before the others. Bresnan and Dowty noted that passive participles can also be used prenominally:

(38) a. The toy is being broken (by the child).
b. the broken toy

That theses forms are adjectives, not verbs, is shown by a host of properties, including negative *un-* prefixation: *unbroken* means 'not broken', just as *unkind* means 'not kind', while the *un-* appearing on verbs indicates, not negation, but action reversal, as in *untie* (Bresnan, 1982, p. 21). The situation is even clearer in languages with adjectival inflection: for instance in German, prenominal adjectives are inflected and prenominal participles inflect like adjectives rather than verbs.

Predicate adjectives preserve the subject of predication of the verb and for prenominal adjectives the rule is simply that the role that would be assigned to the subject goes to the modified noun instead (*The toy remained (un-)broken.*; *the broken toy*).

In the phrasal account the passive variant of *broken* would be formed in syntax and would not be available for the morphological process of *un-* prefixation. See also Müller, 2006 and Müller & Wechsler, 2014 for discussion of problems with derivational morphology that result for phrasal analyses of valence changing processes.

So, concluding the discussion, it must be said that the constructional analysis has no account of the morphological data, it cannot account for sentential subjects in passive constructions without duplicating or considerably complicating the schemata and it needs additional schemata to license constituents that are usually not assumed in grammars of English. Hence, lexical analyses along the lines described here are formally simpler and empirically more adequate than phrasal analyses of the kind discussed above.

4 Further Research

A reviewer pointed us to a possible problem for our assumption that passivization of ditransitive verbs involves permutation of the two objects on the ARG-ST list. In Norwegian the binding properties of reflexives are the same as in the active no matter what object is promoted so subject. This is unexpected if binding is defined over the ARG-ST list. In that case passive must be handled in the mapping from ARG-ST to the valence features. However, Lars Hellan (p. c. 2013) argues that the data in Hellan, 1988, p. 162 cannot be accounted for with respect to the ARG-ST list at all. Therefore Hellan (2005) developed an account for pronoun binding that does not rely on ARG-ST prominence.

There have been proposals by Manning & Sag (1998) for a more elaborate representation of the ARG-ST list. In Manning and Sag's analysis the ARG-ST list contains sublists and PRO elements that are not realized as arguments at the surface.

We do not take a stand on whether mechanisms like the one suggested by Hellan or complex representations in the ARG-ST list are the way to go. We noted in Müller, 1999, Chapter 20 that the Binding Theory of Pollard & Sag (1994) could not be applied to German data successfully and hence put binding data aside.

Another point that needs further work is the order of elements in the ARG-ST list. We deviated from earlier work by assuming the order nom, dat, acc for German and the corresponding orders for Danish and English, that is, agent, recipient, theme/transferred object. While this order corresponds to the surface order of arguments in Danish and English and to the unmarked order in German other areas of grammar seem to suggest a different ordering. For instance, datives seem to be more oblique as far as the formation of non-matching free relatives are concerned, they do not participate in topic drop structures as easily, datives are dispreferred as antecedents of depictive predicates (Müller, 2008) and so on. On the other hand Kiss (2001) argued that the order nom, dat, acc is relevant for scope determination. So, it may be the case that two different orderings have to be reflected in grammars of natural languages.

5 Conclusion

We have provided an account of the Danish, English and German passive that assumes that both morphological and analytical passives are analyzed with a lexical rule suppressing the first argument on the ARG-ST list of the input lexical item. Danish differs from German and English by inserting an expletive into the SPR list if there is no other element that could fill the subject position. German differs from both Danish and English in having a lexical dative as object of verbs like *helfen* ('to help'), which results in an impersonal passive as compared to the personal passive in Danish and English. The possibility to promote both the primary and the secondary object in Danish is accounted for by an analysis that allows all objects with

structural case to be promoted to subject. The respective passives in German and English are ruled out by the assumption that the case of the secondary objects in these languages is lexical.

The analyses have been implemented in the TRALE system (Meurers, Penn & Richter, 2002; Penn, 2004; Müller, 2007) as part of grammar fragments of German (Müller, 2013c), Danish (Müller & Ørsnes, In Preparation), and English. These grammars are developed in the CoreGram project[9] (Müller, 2013a,b) and share a core grammar with grammars for Persian, Mandarin Chinese, Maltese, and Yiddish.

6 Acknowledgments

We thank the reviewers of the HPSG conference for helpful comments and Emily M. Bender, Lars Hellan and the participants of the conference for discussion. We thank Frank Van Eynde for comments on an earlier version of this paper and Philippa Cook for discussion and proofreading.

References

Bjerre, Anne & Tavs Bjerre. 2007. Perfect and periphrastic passive constructions in Danish. *Nordic Journal of Linguistics* 30(1). 5–53.

Bresnan, Joan. 1982. The passive in lexical theory. In Joan Bresnan (ed.), *The mental representation of grammatical relations*, 3–86. Cambridge, MA/London: MIT Press.

Dalrymple, Mary & Helge Lødrup. 2000. The grammatical functions of complement clauses. In Miriam Butt & Tracy Holloway King (eds.), *Proceedings of the LFG 2000 conference*, Stanford: CSLI Publications.

Dowty, David R. 1978. Governed transformations as lexical rules in a Montague Grammar. *Linguistic Inquiry* 9(3). 393–426.

Engdahl, Elisabet. 2001. Scandinavian passives in hpsg. In Arthur J. Holmer, Jan-Olof Svantesson & Åke Viberg (eds.), *Proceedings of the 18th scandinavian conference of linguistics*, 23–36. Lund: Department of Linguistics.

Haider, Hubert. 1986. Fehlende Argumente: vom Passiv zu kohärenten Infinitiven. *Linguistische Berichte* 101. 3–33.

Heinz, Wolfgang & Johannes Matiasek. 1994. Argument structure and case assignment in German. In Nerbonne et al. (1994) 199–236.

Hellan, Lars. 1988. *Anaphora in Norwegian and the theory of grammar*. Berlin: Walter de Gruyter.

Hellan, Lars. 2005. Implementing Norwegian reflexives in an HPSG grammar. In Müller (2005) 519–539.

[9] http://hpsg.fu-berlin.de/Projects/CoreGram.html

Hinrichs, Erhard W. & Tsuneko Nakazawa. 1994. Linearizing AUXs in German verbal complexes. In Nerbonne et al. (1994) 11–38.

Höhle, Tilman N. 1978. *Lexikalische Syntax: Die Aktiv-Passiv-Relation und andere Infinitkonstruktionen im Deutschen*. Tübingen: Niemeyer.

Kim, Jong-Bok & Ivan A. Sag. 2005. English object extraposition: A constraint-based approach. In Müller (2005) 192–212.

Kiss, Tibor. 2001. Configurational and relational scope determination in German. In Walt Detmar Meurers & Tibor Kiss (eds.), *Constraint-based approaches to Germanic syntax*, 141–175. Stanford: CSLI Publications.

Manning, Christopher D. & Ivan A. Sag. 1998. Argument structure, valance, and binding. *Nordic Journal of Linguistics* 21(2). 107–144.

Meurers, Detmar. 1999. Raising spirits (and assigning them case). *Groninger Arbeiten zur Germanistischen Linguistik (GAGL)* 43. 173–226.

Meurers, Detmar. 2000. Lexical generalizations in the syntax of German non-finite constructions. Arbeitspapiere des SFB 340 No. 145 Universität Tübingen.

Meurers, Detmar & Kordula De Kuthy. 2001. Case assignment in partially fronted constituents. In Christian Rohrer, Antje Roßdeutscher & Hans Kamp (eds.), *Linguistic form and its computation*, 29–63. Stanford: CSLI Publications.

Meurers, Detmar, Gerald Penn & Frank Richter. 2002. A web-based instructional platform for constraint-based grammar formalisms and parsing. In Dragomir Radev & Chris Brew (eds.), *Effective tools and methodologies for teaching NLP and CL*, 18–25.

Müller, Stefan. 1999. *Deutsche Syntax deklarativ. Head-Driven Phrase Structure Grammar für das Deutsche*. Tübingen: Niemeyer.

Müller, Stefan. 2002. *Complex predicates: Verbal complexes, resultative constructions, and particle verbs in German*. Stanford: CSLI Publications.

Müller, Stefan. 2003. Object-to-subject-raising and lexical rule. an analysis of the German passive. In Stefan Müller (ed.), *Proceedings of the 10th international conference on Head-Driven Phrase Structure Grammar, michigan state university, east lansing*, vol. 4, 278–297. Stanford: CSLI Publications.

Müller, Stefan (ed.). 2005. *Proceedings of the 12th international conference on Head-Driven Phrase Structure Grammar, department of informatics, university of lisbon*. Stanford: CSLI Publications.

Müller, Stefan. 2006. Phrasal or lexical constructions? *Language* 82(4). 850–883.

Müller, Stefan. 2007. The Grammix CD Rom. a software collection for developing typed feature structure grammars. In Tracy Holloway King & Emily M. Bender (eds.), *Grammar engineering across frameworks 2007*, Stanford: CSLI Publications.

Müller, Stefan. 2008. Depictive secondary predicates in German and English. In Christoph Schroeder, Gerd Hentschel & Winfried Boeder (eds.), *Secondary predicates in Eastern European languages and beyond*, 255–273. Oldenburg: BIS-Verlag.

Müller, Stefan. 2013a. The CoreGram project: A brief overview and motivation. In Denys Duchier & Yannick Parmentier (eds.), *Proceedings of the workshop on*

high-level methodologies for grammar engineering (HMGE 2013), Düsseldorf, 93–104.

Müller, Stefan. 2013b. The CoreGram project: Theoretical linguistics, theory development and verification. Ms. Freie Universität Berlin. http://hpsg.fu-berlin.de/~stefan/Pub/coregram.html.

Müller, Stefan. 2013c. *Head-Driven Phrase Structure Grammar: Eine Einführung*. Tübingen: Stauffenburg Verlag 3rd edn.

Müller, Stefan. To appear. HPSG – a synopsis. In Artemis Alexiadou & Tibor Kiss (eds.), *Syntax – Ein internationales Handbuch zeitgenössischer Forschung*, Berlin: Walter de Gruyter 2nd edn.

Müller, Stefan & Bjarne Ørsnes. 2011. Positional expletives in Danish, German, and Yiddish. In Stefan Müller (ed.), *Proceedings of the 18th international conference on Head-Driven Phrase Structure Grammar, University of Washington, U.S.A.*, 167–187. Stanford: CSLI Publications.

Müller, Stefan & Bjarne Ørsnes. In Preparation. *Danish in Head-Driven Phrase Structure Grammar*. Berlin: Language Science Press.

Müller, Stefan & Stephen Mark Wechsler. 2014. Lexical approaches to argument structure. *Theoretical Linguistics* 40(1–2). In Print.

Nerbonne, John, Klaus Netter & Carl J. Pollard (eds.). 1994. *German in Head-Driven Phrase Structure Grammar*. Stanford: CSLI Publications.

Penn, Gerald. 2004. Balancing clarity and efficiency in typed feature logic through delaying. In Donia Scott (ed.), *Proceedings of the 42nd meeting of the association for computational linguistics (acl'04), main volume*, 239–246. Barcelona, Spain.

Pollard, Carl J. 1996. On head non-movement. In Harry Bunt & Arthur van Horck (eds.), *Discontinuous constituency*, 279–305. Berlin, New York: Mouton de Gruyter.

Pollard, Carl J. & Ivan A. Sag. 1992. Anaphors in English and the scope of binding theory. *Linguistic Inquiry* 23(2). 261–303.

Pollard, Carl J. & Ivan A. Sag. 1994. *Head-Driven Phrase Structure Grammar*. Chicago, IL and London: University of Chicago Press.

Przepiórkowski, Adam. 1999. *Case assignment and the complement-adjunct dichotomy: A non-configurational constraint-based approach*: Universität Tübingen dissertation.

Tseng, Jesse L. 2007. English prepositional passive constructions. In Stefan Müller (ed.), *Proceedings of the 14th international conference on Head-Driven Phrase Structure Grammar*, 271–286. Stanford: CSLI Publications.