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# Subjects in Fronted German VPs and the Problem of Case and Agreement: Shared Argument Structures for Discontinuous Predicates

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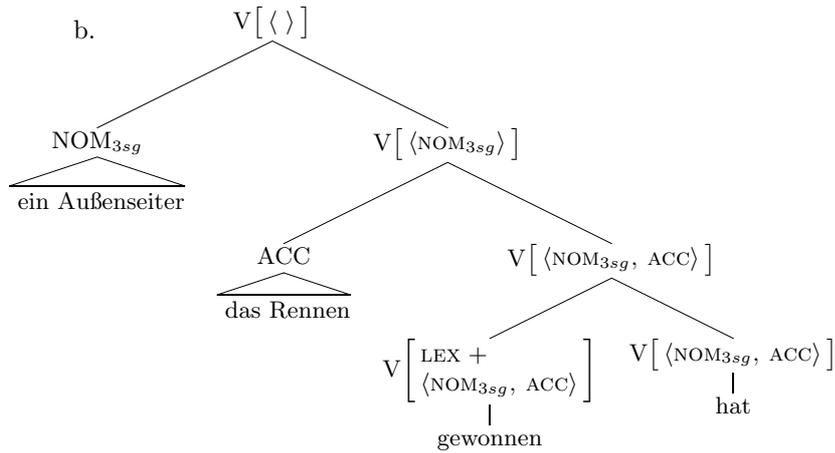
## 5.1 Introduction

Few ideas have proven as influential within the HPSG-based literature on German verb clusters as Hinrichs and Nakazawa's (1989) idea of argument composition. Its basic idea is that in verb clusters, the arguments of a main verb are realized as the dependents of the auxiliary which governs that main verb, and not directly as dependents of the main verb. Thus, for instance in (1a), the tense auxiliary *haben* governs the transitive main verb *gewinnen*. As the head of the cluster *gewonnen hat*, the auxiliary *haben* effectively takes over the arguments from the main verb. The resulting head-governee phrase then combines with the main verb's dependents, for instance in a structure along the lines illustrated in (1b):<sup>1</sup>

- (1) a. daß ein Außenseiter das Rennen gewonnen hat.  
that an outsider the race win will  
'that an outsider will win the race.'

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<sup>1</sup>Here,  $\langle \dots \rangle$  represents valence information (e.g., SUBCAT  $\langle \dots \rangle$ ), or some combination of SUBJ and COMPS). I ignore here the issue of how the governor selects its governee (for instance by means of a VCOMPL feature, see Kathol 1998).

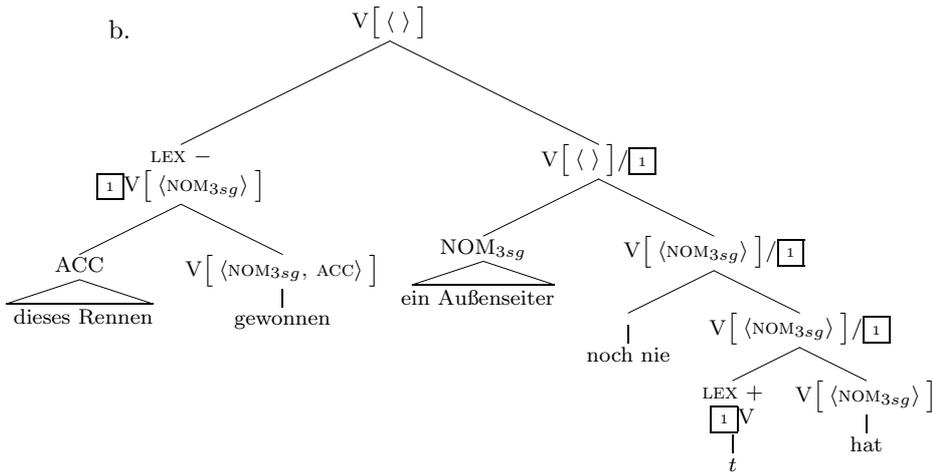


Another wide-spread assumption has been that nominative case marking and subject agreement are properties of finite verbs. That is, *ein Außenseiter* in (1) is nominative because it is a third singular valence element of the finite verb *hat*. This can be expressed in terms of a constraint along the lines listed in (2):

$$(2) \quad \left[ \begin{array}{l} V[\text{FINITE}] \\ \langle \text{NP}[\text{STR}], \dots \rangle \end{array} \right] \rightarrow \left[ \langle \text{NP}[\text{NOM}], \dots \rangle \right]$$

The phrase structure assumed under the argument composition analysis at first appears to be at odds with constructions in which the main verb is fronted together with some or all of its dependents, as for instance in (3a). However, as has been shown by Müller (1996) and Meurers (1999b), such constructions can be accommodated if the governor is allowed to take phrasal verbal dependents ([LEX –]) whenever such dependents are preposed by means of a filler-gap relation, as illustrated in (3b):

- (3) a. [Dieses Rennen gewonnen] hat ein Außenseiter noch nie.  
 this race won has an outsider yet never  
 ‘No outsider has ever won this race.’



I should note at this juncture that the structure in (3) ignores the issue of how the finite element *hat* takes second position in the declarative clause. One possible solution of this issue is offered within the linearization framework outlined in Kathol (2000).<sup>2</sup>

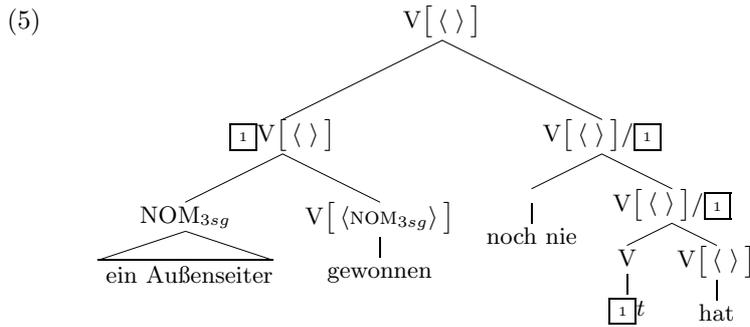
As has been pointed out by Grewendorf (1988), Haider (1990), and others,<sup>3</sup> fronted partial VPs in German may sometimes contain a subject, as illustrated in (4) with intransitive *gewinnen*.

- (4) [Ein Aussenseiter gewonnen] hat hier noch nie.  
 an outsider won has here still never  
 ‘No outsider has yet won here.’

Recent work by Meurers (1999c,a) has pointed out that such data present a severe challenge to HPSG analyses of the argument composition kind. Simply put, the problem is that the subject forms a phrase with the participle *gewonnen* and—due to ordinary HPSG valence saturation—disappears from the valence list of the phrase *ein Außenseiter gewonnen*, as is illustrated in (5).

<sup>2</sup>Note also that the use of a trace (*t*) in (3b) is entirely for expository convenience. Everything we state is fully compatible with a traceless implementation

<sup>3</sup>Grewendorf (1988, 295) credits unpublished work by Haider and Tappe from 1982 as being the first to point out such structures.



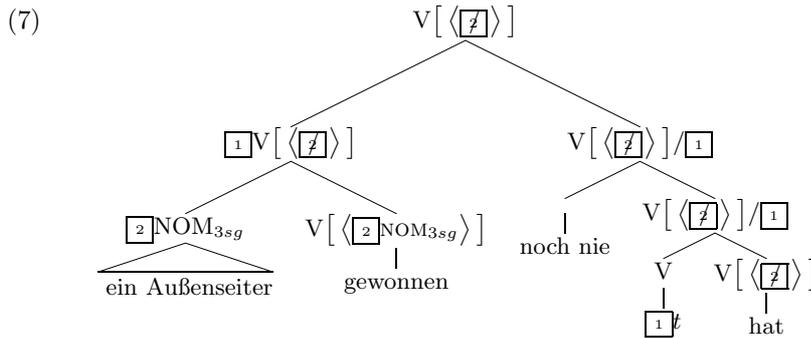
As a result, there is no “communication” between the governing auxiliary *hat* and the phrase-internal subject *ein Außenseiter*. The standard mechanisms for nominative case marking and agreement (cf. (2) above) cannot apply; yet the construction leaves no choice concerning nominative case on the subject (6a) or agreement with the auxiliary (6b):

- (6) a. \*Einen Außenseiter gewonnen hat hier noch nie.  
 an outsider.ACC won has here still never
- b. \*Außenseiter gewonnen hat hier noch nie.  
 outsider.PL won has here still never

The solution offered for this problem by Meurers (1999c, 1999a) is in terms of “raising spirits”. These are representations of dependents which remain on valence-related lists even though the valence requirements have been locally realized. As a result, raising spirits become “accessible” outside the fronted phrase for purposes of case assignment and agreement.

In (7), for instance, the subject requirement of *gewonnen* is satisfied within the fronted phrase, represented as “[2]”. Rather than being removed from the valence list, (as in (5) above), however, the subject remains part of the valence list of the mother node. To render raising spirits combinatorially inert, that is, to indicate at a higher node that an element has been “found” inside that phrase, Meurers assigns them a special marking. Thus in (7), “[1]” points toward the same informational content as “[2]”, except that in the former, the NP[NOM] bears a marking as “realized”.<sup>4</sup> The resulting structure is given in (7) (Meurers and De Kuthy 2001:28):

<sup>4</sup>Technically, this is achieved by means of a relational constraint that maps representations containing a LOCAL value of type *unrealized* into one that is of type *realized* (cf. Meurers 1999a:200).



Since [2] and [z̄] both contain the same information content as far as case and agreement features are concerned, the puzzle of how to get the finite verb to communicate with the phrase-internal subject appears solved.

However, I believe the solution comes at a steep price. The notion of a “spirit” is antithetical to the overall design of the HPSG theory, in which, as I noted above, syntactic combination is primarily driven by the notion of saturation level. Thus, valence lists with spirits are burdened with information that they were not originally designed to bear. Furthermore, it is not clear whether there is any independent evidence for the notion of spirit apart from the problematic VP fronting construction with subjects in German.

Thus it seems highly desirable to eliminate the notion of spirits from the HPSG theory if the problem of phrase-internal subjects can be solved by means that do not require an extension of the basic theory. As I will show in Section 5.2, this is indeed the case once the independently motivated notion of argument structure is used to link the various components of a periphrastic predicate.

## 5.2 Argument sharing and periphrastic predicates

### 5.2.1 Valence vs. argument structure

The idea of a single representation of all the dependents of some predicator has recently been revived in the form of the ARG-ST feature on lexical elements. By default, the elements of the ARG-ST list are identical with the valence elements given by SUBCAT<sup>5</sup> at the lexical level. The two lists do not always line up in this fashion and the possibility of mismatches has given rise to a number of analyses of otherwise puzzling phenomena, such as “*pro*-drop”.

The standard approach to missing subjects in finite environments

<sup>5</sup>Or SUBJ/COMPS, cf. footnote 1 above.

has been to posit a null pronoun (*pro*) that instantiates the syntactic subject position. In keeping with HPSG's general avoidance of unpronounced syntactic material, we can instead analyze the unexpressed subject as an ARG-ST element that does not have a corresponding valence expression. The example in (8a) from Italian and the corresponding lexical description of the verb *mangia* in (8b) illustrate this idea:

- (8) a. Mangia un gelato.  
 eat.3SG a ice cream  
 'S/he is eating an ice cream.'
- b.  $\left[ \begin{array}{l} \text{ARG-ST} \langle \boxed{1} \text{NP}[3\text{SG}], \boxed{2} \text{NP} \rangle \\ \text{SUBCAT} \langle \boxed{2} \rangle \end{array} \right]$

Dependencies in which the subject participates, such as binding or agreement, can be accommodated straightforwardly if we assume that their description references the first ARG-ST element, rather than the first member of the SUBCAT list.

While SUBCAT as a valence feature records the level of syntactic saturation for each higher phrase in the tree, ARG-ST is usually taken to be a static representation of the dependents of the lexical head and does not project to higher nodes in the structure (cf. for instance Sag and Wasow 1999:387 on this point). The rationale behind this assumption is that non-projecting ARG-ST information gives rise to a stronger notion of syntactic locality. That is, if a phrase retains no record of its internal dependents by means of ARG-ST, then selectional dependencies are severely restricted. Thus many nonexisting dependencies are accounted for because the grammatical framework gives us no way to express them. Examples of such nonexisting dependencies are verbs that require finite complement clauses with ditransitive heads.

The idea that ARG-ST is limited to word-level expressions has recently been challenged by Przepiórkowski (2001, 268–271). He cites evidence from Polish constructions showing that argument structure needs to be projected to the phrasal level. His arguments involve the visibility of the subject on the embedded ARG-ST list. This could be taken to mean that only subject information is passed to the mother level, while other ARG-ST information is non-projective, as originally proposed. However, there is suggestive evidence from ergative languages that this conclusion does not hold up either.

One such piece of evidence comes from light verb constructions in Urdu, discussed by Andrews and Manning (1999, 68) and shown here in (9):

- (9) Anjum ne **d-ii** Saddaf ko [**ciṭṭ<sup>h</sup>ii** lik<sup>h</sup>-ne].  
 Anjum ERG give-PERF.F.SG Saddaf DAT letter.F.NOM write-INF  
 ‘Anjum let Saddaf write a letter.’

Andrews and Manning present convincing evidence for the constituent status of *lik<sup>h</sup>-ne* (‘write’) and its object *ciṭṭ<sup>h</sup>ii* (‘letter’). At the same time, since this particular construction displays an ergative case and agreement pattern, the light verb *d-ii* agrees in gender with the object *ciṭṭ<sup>h</sup>ii* (‘letter’). As Andrews and Manning point out, on an analysis based solely on argument composition, the light verb has no access to the embedded object by means of a valence list, hence there is no way to effect the agreement between the light verb and the embedded object. One possible objection may be that, according to Manning’s (1996) “inverse linking” hypothesis, the embedded object *ciṭṭ<sup>h</sup>ii* (‘letter’) may actually be linked to the grammatical function of subject. If subject information is projected, then this element should be visible at the phrasal level. However, Manning’s idea of inverse linking only applies in cases of syntactic ergativity, for which there is no evidence in a language such as Urdu. Hence, even under Manning’s approach to ergativity, the phrase *ciṭṭ<sup>h</sup>ii* (‘letter’) would count as a grammatical object.

On the analysis proposed here, the entire ARG-ST list of the dependent predicate *lik<sup>h</sup>-ne* (‘write’), including both subject and object, is projected to the phrasal level, and thus the agreement marking facts can be readily accommodated.

A similar argument comes from long-distance agreement in Tsez, reported by Polinsky and Comrie (1999). As the following examples show, the matrix predicate (‘know’) agrees in gender class, not with the matrix dative subject (*enir*), but rather with the absolutive-marked element of the embedded clause. In (10a), this element is the subject, but in (10b), it is the notional object that is marked absolutive.

- (10) a. Eni-r [**uži** āy-ru-λi] **iy-xo**.  
 mother-DAT boy.ABS I.arrive-PT.PART-NMLZ I-know-PRES  
 ‘The mother knows that the boy arrived.’  
 b. Eni-r [už-ā **magalu** b-āc’-ru=λi]  
 mother-DAT boy-ERG bread.III.ABS III-eat-PT.PART-NMLZ  
**b-iy-xo**.  
 III-know-PRES  
 ‘The mother knows that the boy ate the bread.’

As before with Urdu, one may think that Manning’s (1996) inverse mapping analysis would treat the notional object as a grammatical subject and hence predict visibility, but this proposal has the obvious drawback that it would posit an inverse linking structure for a language

that does not elsewhere show any signs of syntactic ergativity (Maria Polinsky, p.c.).

I will show in Section 5.2.2, projecting entire argument structures to the phrasal level also allows us to establish a tighter link among the elements of a verb cluster. In turn, this will allow the agreement and case marking facts involving subjects in fronted verbal constituents to fall out naturally.

### 5.2.2 Predicates

Ackerman and Webelhuth (1998) develop a unified theory in which *predicates* are treated as unitary elements of syntactic description regardless of their morpho-syntactic realization. That is, depending on the (sometimes idiosyncratic) details of morphological realization, a given lexeme may be mapped onto a single word or a periphrastic construction involving auxiliaries or other elements. Applied to a concrete example, this means that, in addition to the synthetic tense forms, the German verb *gewinnen* also possesses a number of complex realizations involving tense and other auxiliaries, sketched here in (11):

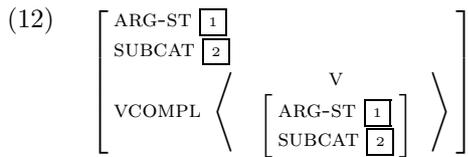
(11) **Extended paradigm for *gewinnen***

	present indicative	past indicative	...	present perfect	...
1sg	gewinne	gewann		gewonnen habe	
...					
3sg	gewinnt	gewann		gewonnen hat	
...					

Ackerman and Webelhuth (1998) propose that the main verb is the basis for the predicate with accompanying elements selected by means of features such as “AUX”. This, however, is at odds with standard HPSG assumptions about the governor–governee relationships holding in such constructions, for instance the fact that the auxiliaries determine the particular form of a main verb, but not the other way round. If the auxiliary is considered the governor, then this situation is fully in line with other head–dependent relationships, such as prepositions governing particular cases on their NP complements.

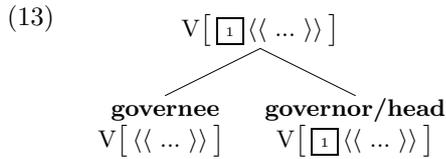
Despite these implementational differences, however, the thrust of Ackerman and Webelhuth’s (1998) idea can be preserved if we assume that a predicate in its periphrastic realization is the domain of a common argument structure list (ARG-ST). That is, in addition to linkages among its parts that are based on valence, the integrity of a predicate is manifested in terms of a common argument structure shared among all of its parts. This is achieved first by assuming that—in valence-

preserving cases—the governing element has the same ARG-ST value as its governee (i.e.,  $\boxed{1}$ ), as shown in (12):

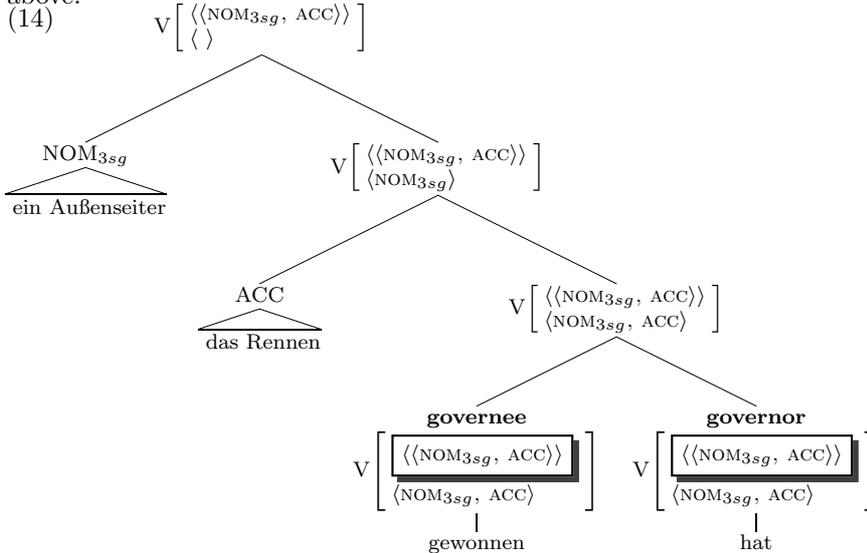


Valence information continues to be shared between governee and governor (here:  $\boxed{2}$ ). If there is no extraction from a verb cluster, ARG-ST and SUBCAT are identical at the lexical level, but, as we will see below, they crucially do not always have to be.

Second, I follow Przepiórkowski (2001) in assuming that the argument structure of the phrasal mother is the same as that of the head, as shown in (13). (For ease of readability, I will from now on abbreviate “[ARG-ST ⟨...⟩]” as “⟨⟨...⟩⟩”.)



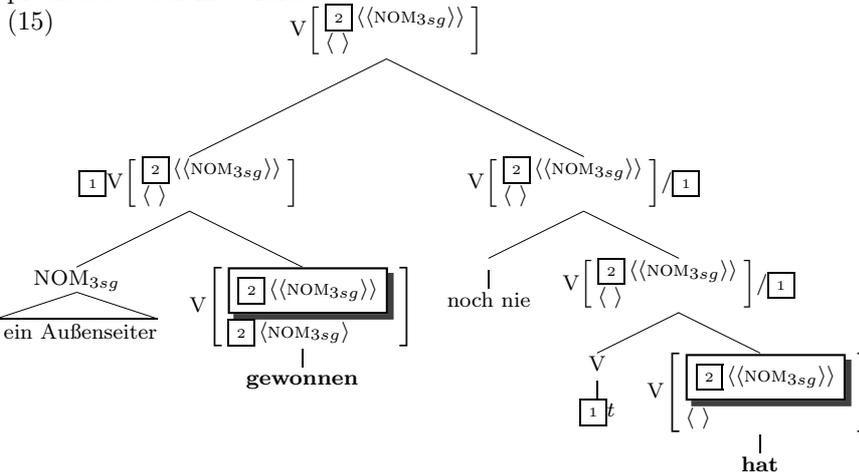
As a result, we obtain the analysis in (14) for the structure in (1b) above:



Once the various elements of a predicate are seen as linked via argument sharing, a new perspective on subjects in fronted VPs becomes

available. Such constructions can now be understood as involving a single predicate (e.g., *gewonnen hat*). Rather than being contained in a single constituent, as in (14), they occur discontinuously in structures such as (4) above. In (14), the finite exponent of this predicate is directly involved in nominative case marking and subject agreement. In the discontinuous case in (4), by comparison, case marking and agreement is mediated by the nonfinite exponent (i.e., the participle *gewonnen*).

Applied to the problem of subjects in fronted VPs, this yields the analysis outlined in (15), in which the two elements of the periphrastic predicate occur in boldface:



In the lexical representation for the main verb *gewonnen*, the ARG-ST value is identical with its valence list(s), indicated by means of [2]. The main verb combines with its sole dependent inside the fronted verbal projection, saturating its valence requirement. While there is no phrasal element on the valence list(s) of the finite auxiliary *hat*, it does have a nonempty ARG-ST list, which is identical to that of its gapped governee ([2]). Thus, while in both (14) and (15), the argument structure of the governor is identical to that of the governee, only in (14) does the governor also inherit all of the valence elements of the governee. In (15), only those are inherited by the governor (from the gap of the fronted phrase) that have not already been cancelled within the fronted phrase—in this case, this means an empty list of dependents inherited from the main verb part.

If we assume that case and agreement properties of a finite element are linked to the first element on its ARG-ST list, then the singular marking on *hat* is immediately predicted, as is the nominative

case marking on the non-locally realized NP *ein Außenseiter*. This is straightforwardly achieved if case marking is seen not as a constraint on valence representations, but instead on argument structure, as is shown in (16):

$$(16) \quad \left[ \begin{array}{l} \text{V}[\text{FINITE}] \\ \langle \langle \text{NP}[\text{STR}], \dots \rangle \rangle \end{array} \right] \rightarrow [ \langle \langle \text{NP}[\text{NOM}], \dots \rangle \rangle ]$$

Once case assignment (and agreement) are understood as constraints on ARG-ST, the observed facts fall out without any further stipulation. Thus the analysis proposed here shares with Meurers' solution the idea that information about internal composition needs to remain accessible phrase-externally. However, it approaches the problem from a very different conceptual angle. Instead of seeing the behavior of phrase-internal subjects as a special case that requires modification of the fundamental notion of valence saturation, we can understand it as the result of the convergence of independently justified assumptions about syntactic composition: Przepiórkowski's projectivity of ARG-ST lists and Ackerman & Webelhuth's conception of "predicate" as unitary element in syntactic description.

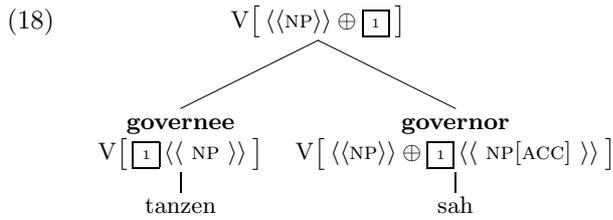
### 5.2.3 Valence increasing constructions

The same proposal can be straightforwardly extended to valence increasing environments, such as embeddings under AcI verbs (*accusativus cum infinitivo*, essentially object-raising verbs) such as *sehen*, as seen in the example in (17) from Meurers (1999a, 293):

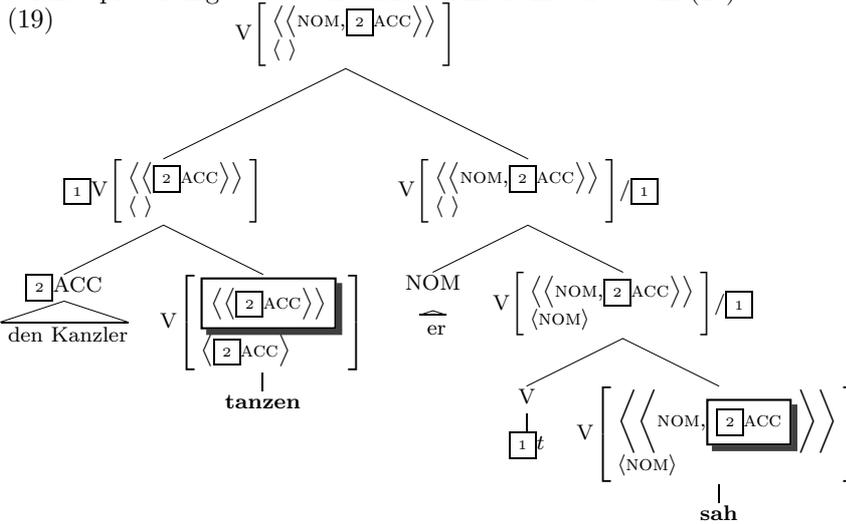
$$(17) \quad \begin{array}{llll} [\text{Den Kanzler}/*\text{der Kanzler} & \text{tanzen}] & \text{sah} & \text{Oskar.} \\ \text{the Chancellor.ACC/the Chancellor.NOM} & \text{dance} & \text{saw} & \text{Oskar} \\ \text{'Oskar saw the Chancellor dance.'} \end{array}$$

The problem posed by these constructions is quite similar to the ones seen earlier, except that here it is the accusative case on *den Kanzler* which cannot be predicted on the basis of information that is locally available within the fronted phrase.

Since we think of the argument structure of a predicate as being projected from its syntactic head, all that is required to account for such examples is a proper understanding of the ARG-ST properties of valence-increasing heads such as *sehen*. In the valence-preserving case discussed earlier, this entails total identity in ARG-ST values across governor and governee. In valence-increasing cases, the two are linked only by partial identity, outlined in (18), where " $\oplus$ " stands for list concatenation:



As a result, the subject requirement of *tanzen* now corresponds to the second element of *sehen*'s ARG-ST list. As the second (structurally case-marked) element on the ARG-ST list of the finite verb *sah*, that NP is marked with accusative case, rather than nominative case, as in the valence-preserving cases seen earlier. This is illustrated in (19):



In order to ensure that the fronted NP be properly marked with accusative case, we only need to make sure that the constraint on case assignment is defined on ARG-ST, as shown in (20).<sup>6</sup>

(20) 
$$\left[ \begin{array}{c} V \\ \langle\langle NP[STR], NP[STR] \dots \rangle\rangle \end{array} \right] \rightarrow \left[ \langle\langle NP[STR], NP[ACC], \dots \rangle\rangle \right]$$

### 5.2.4 An exceptional construction

Verbs such as *anfangen* ('begin') can occur either in so-called "coher-

<sup>6</sup>Again, the more formally precise version of this constraint is as follows:

(i) 
$$\left[ \begin{array}{c} \text{HEAD } verb \\ \text{ARG-ST } \langle NP[STR], NP[STR] \dots \rangle \end{array} \right] \rightarrow \left[ \text{ARG-ST } \langle NP[STR], NP[ACC], \dots \rangle \right]$$

Note also that the only way to get two structural cases in a row on an ARG-ST list is for both dependents to be subjects of different predicates which have been combined by means of a valence-increasing predicate.

ent” or “incoherent” constructions. The first, shown in (21a), is generally treated as on a par with verb cluster construction involving auxiliaries, seen above in (1b), see, e.g., Kiss (1995). The second, shown in (21b) involves a dependent VP, which in turn occurs after the verbal complex in *Nachfeld* position.<sup>7</sup>

- (21) a. daß der Mond zu scheinen anfang.  
 that the moon to shine began  
 ‘that the moon began to shine.’  
 b. daß der Mond anfang [zu scheinen].  
 that the moon began to shine  
 ‘that the moon began to shine.’

Meurers (1999a, 291) observes that, in addition to the constructions above, *anfangen* may also cooccur with a postposed verbal projection that contains a nominative subject, as illustrated in (22):

- (22) obwohl damals anfang [der Mond zu scheinen].  
 although then began the moon.NOM to shine  
 ‘although the moon began to shine then.’

This construction type thus constitutes the mirror image of the preposed subject+V phrases discussed earlier.

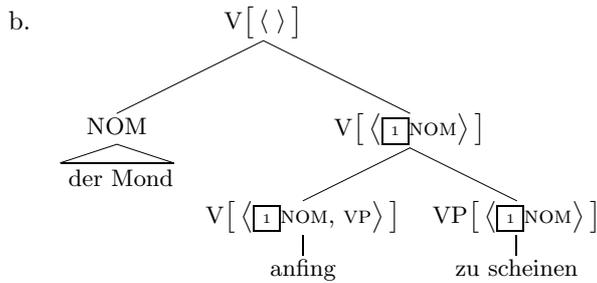
Meurers does not discuss the range of possibilities further and I find such cases are slightly marginal in comparison to the fronted partial VPs containing subjects.<sup>8</sup> Nonetheless, I would like to offer a very simple way of accommodating such cases within the approach pursued here. First, in (23), I present the lexical description for *anfangen* as a VP-embedding predicate, as it occurs in (21b) above.

- (23) *anfang* (VP-embedding)  
 a.  $\left[ \text{SUBCAT} \left\langle \boxed{1}, \text{VP[ZU-INF]} \left[ \text{SUBCAT} \left\langle \boxed{1}, \dots \right\rangle \right] \right\rangle \right]$

<sup>7</sup>There are well-known complications arising in the form of the “Third Construction”, which I will ignore here. See Kathol (2000, 243–250) and Hinrichs and Nakazawa (1998), among others, for some discussion.

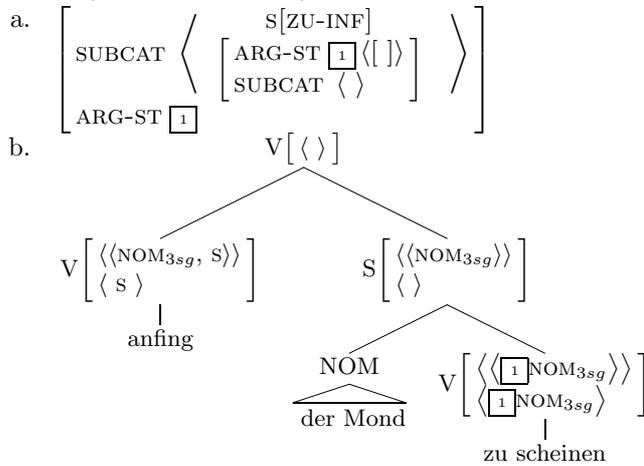
<sup>8</sup>In particular, it seems that there is a rather strong requirement that predicates occurring in such constructions take non-agentive subjects, cf. the ungrammaticality of the examples in (i):

- (i) a. \*weil anfang, [ein Außenseiter zu gewinnen].  
 because began an outsider to win  
 b. \*weil anfang, [ein Kind zu lachen].  
 because began a child to laugh



Turning now to the description that is responsible for the unexpected construction in (22), it seems that such cases involve the verb taking a fully saturated (“clausal”) verbal projection ( $[SUBCAT \langle \rangle]$ ) whose ARG-ST list is shared with that of clausal dependent. Since the subject of the clausal dependent (*der Mond* in (22)) is now also the subject of the finite predicate *anfing*, nominative case marking on *der Mond* and agreement between *anfing* and *der Mond* are correctly accounted for, as illustrated in (24):

(24) *anfing* (clause-embedding)



To be sure, the account developed earlier for subjects occurring in fronted verbal phrases does not immediately lead us to expect that sentences such as (22) should be possible as well. This is a property shared by Meurers’ raising spirits account. Given that the acceptability of (22) is somewhat marginal, this probably is a desired result. Whatever the proper understanding of the constraints exhibited by such constructions, the present proposal provides the proper tools to account for the linkage between the phrase-internal subject and the finite matrix predicate.

### 5.3 Summary and final remarks

The proposal advanced in this study may appear at first sight to be just a technical variation of Meurers' original proposal for phrase-internal fronted subjects—specifically the idea that information about the internal dependents of the fronted phrase need to become part of the informational content represented on the fronted phrase itself. However, as I have argued above, this result is achieved here in a way that ties a number of strands in recent research together in a natural way. The first is the idea that information about argument structure needs to be projected to the phrasal level, as argued by Przepiórkowski and further supported here on the basis of evidence from ergative languages. The second is the idea that multiple predicate constructions may be linked by a common argument structure, which allows us to give content to Ackerman & Webelhuth's idea of “predicate” as a unit of syntactic description above the word level.

As a result, we are able to solve the puzzle of how to get the finite auxiliary to agree with and assign nominative to the subject in the fronted constituent. In fact under the present proposal, the required dependencies fall out for free, as the nonfinite fronted verb and the finite auxiliary are really, in a sense, different lexical exponents of the same predicate. Unlike in the case of Meurers' analysis, these results could be achieved without changing the fundamental saturation-driven character of syntactic combination in HPSG.

One of the consequences of this proposal, which does not come out as clearly in Meurers' approach is the fact that any approach to syntax that is entirely driven by saturation appears to be inadequate to deal with the data discussed here. For instance, early HPSG (Pollard and Sag 1987) or standard Categorical Grammar appear to supply no means recording subject-related information on the fronted constituent.

In fact, it may seem that the present proposal is too unconstrained in making phrase-internal information “visible” to phrase-external elements. In particular, our proposal may have the drawback of not ruling out a number of potential selectional relations that become available once phrases contain a record of their internal composition in the form of the ARG-ST list. This is indeed a valid concern and I wish to address it in a somewhat new way.

While previously the notion of restrictiveness has been thought of entirely in terms of the grammatical relations that are or are not projected to the phrase level, another possibility is to restrict ARG-ST projection to **nonfinite** environments. That is, only nonfinite heads project their ARG-ST information, while ARG-ST is not an appropriate attribute for

finite phrases. Such a move would severely limit the kinds of selectional possibilities involving dependents within finite clauses. I will leave it for further study to determine whether this proposal makes the right predictions concerning the locality of dependent information in finite contexts.<sup>9</sup>

### Acknowledgments

I would like to thank the audience of the Ninth International conference on HPSG for helpful comments and discussion, in particular Ivan Sag. All remaining errors are mine. See Kathol (forthcoming) for an expanded version of this article.

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<sup>9</sup>There is some evidence suggesting that, at least in English, subject information must be projected to the clausal level in finite contexts. However, in proposals such as Bender and Flickinger (1999), this has been achieved by accessing the verb's argument information by means of Kathol's (1999) AGR head feature. This still leaves as an open question whether selectional dependencies ever require access to nonsubject dependents of finite clauses.

Further, as Ivan Sag has reminded me, all of the known cases in which information about phrase-internal elements needs to be "visible" outside that phrase appear to involve a single element. This is also the case in the ergative languages discussed in (9) and (10) above. Among the questions that this observation raises is (1) whether this is empirically correct and (2) if so, whether this is a fact that the grammatical framework should account for in a principled way (for instance by channeling all information about phrase-internal dependents through the AGR feature). Such questions will have to be left for further research.

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