VO/OV-base ordering

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1. Introduction

The base order serialization of verbs in relation to their nominal objects partitions the contemporary Germanic languages into two major groups. The VO group consists of the North Germanic languages plus English and their regional varieties. The OV group comprises Afrikaans, Dutch, Frisian, German and their regional varieties.[1] Yiddish is the only Germanic language that does not neatly fit into this partitioning since objects may precede as well as follow a non-finite main verb. The assignment of Yiddish to one of the two base order types is controversial; see the examples (3) below.

With respect to the internal syntax of the verb phrase, the Scandinavian languages and English are fairly uniform. The objects follow the main verb, as exemplified by Swedish (1). For checking the VO characteristics of a given language, the relevant verb positions are the positions of *non-finite* verbs such as infinitives (1a,c) and supines (1b,d,e). Finite verbs (s. Vikner; ch.17, this vol.) are subject to superimposed ordering constraints since the Germanic languages, except English, are V2-languages, that is, languages in which finite verbs are fronted in main clauses and in certain embedded contexts.

(1) a. Jag ska *köpa* en bil / den. (Sw.) Lundquist (2014a).
I $\text{shall}_{\text{PRES}}$ buy_{INF} a car / it.
b. Jag har *gett* mannen boken. (Sw.) Lundquist (2014b).
I $\text{have given}_{\text{SUP}}$ man_{DEF} book_{DEF}
c.*Jag ska en bil / den *köpa*. (Sw.)
I $\text{shall}_{\text{PRES}}$ buy_{INF} a car / it.
d.*Jag har mannen boken *gett*. (Sw.)
e.*Jag har mannen *gett* boken. (Sw.)

In the Germanic OV languages, the non-finite verb follows its nominal objects. The relative order of the objects in VO and OV is identical (1b, 2b). The verb positions are different. The ungrammatical orders of VO, viz. (1c,d), are grammatical orders in OV languages (2a,b,d), except for (1e). The grammatical orders of Swedish are ungrammatical serializations in OV languages.

In the Germanic OV languages, nominal arguments obligatorily precede the VP-final base position of the main verb. The neutral order for two nominal objects of verbs with an experiencer role for the indirect object is IO-DO-V (2b,d). Pronominal objects, however, are subject to a separate ordering template. Their relative order is DO-IO-V (2c, e), that is, accusative before dative in German.

(2) a. Heute wird er das Auto / es *kaufen* (Ge.)
today he shall the car / it *buy*

[1] For the purpose of this chapter is not essential to decide whether Swiss German varieties or Luxembourgish, to name just two cases, ought to be filed as different languages or different varieties within the German language continuum since the base order characteristics of V relative to its objects is OV, just like in standard German.

b. Heute habe ich dem Mann das Buch *gegeben* (Ge.)
today have I the man$_{DAT}$ the book$_{AKK}$ given
c. Heute habe ich es ihm gegeben (Ge.)
today have I it$_{AKK}$ him$_{DAT}$ given
d. Vandaag heeft de man zijn broer een boek gegeven (Du.)
today has the man his brother$_{IO}$ a book$_{DO}$ given
e. De man heeft het hem niet gegeven (Du.)
the man has it$_{DO}$ him$_{IO}$ not given

The pattern with the non-finite main verb sandwiched by its objects (1e) is ungrammatical in OV as well as in VO, but not in Yiddish. According to Diesing (1997: 402), this word order is an acceptable order variant (3c,d). This is confirmed by Kroch & Santorini (2016) with corpus data.[2] Given the serialization properties illustrated in (3), Yiddish cannot be unequivocally filed as either VO or OV. In Haider (2014, 2015), it is argued that Yiddish has preserved word order properties common to all older stages of Germanic languages before the diachronic split into an OV and a VO group has become manifest, namely unspecified directionality of the verbal head in the VP.

(3) a. Maks hot Rifken dos bukh nit *gegebn* OV-like order
Max has Rebecca the book not given
b. Maks hot nit *gegebn* Rifken dos bukh VO-like order
c. Maks hot Rifken nit *gegebn* das bukh IO-V-DO order
d. Maks hot das bukh nit *gegebn* Rifken DO-V-IO order

These three word-order patterns of Germanic languages, namely VO, OV, and 'unspecified' can be synopsized as parametric variants of VP structuring. In North Germanic and English, the VP is *head-initial*; in the continental West-Germanic languages and in Afrikaans it is *head-final*, while it appears to be flexible in Yiddish.

The Germanic VO languages are head-initial across all categories. In the OV group, however, the head positioning co-varies with the lexical category of the head. Verb and adjective phrases are head final, while noun phrases and PPs are head initial. For NPs and VPs it is particularly easy to provide minimal pairs since infinitival verb forms can be converted into nominal forms without any morphological modifications. The direct object of the verb turns into an object of the noun, either as a PP object (4b) or as a genitive object (4d). The object precedes the verb (4a,c) but follows the noun (4b,d) and these are the only licit linearizations.

(4) a. [een container naar Madagascar *sturen*]$_{VP}$ (Du.)
a container to Madagascar send
b. het [*sturen* van een container naar Madagascar]$_{NP}$ (Du.)
the send$_{INF}$ of a container to Madagascar
c. [einen Container nach Madagaskar *transportieren*]$_{VP}$ (Ge.)
a container to Madagascar transport

[2] Based on a Yiddish Corpus of Santorini's, Kroch & Santorini (2016) report the following figures of a corpus search for double object patterns. The counts have considered only non-finite VPs.
After 1900: IO-V-DO: 6; DO-V-IO: 6; V-NP-NP: 25; NP-NP-V: 2.
1800-1900: IO-V-DO: 3; DO-V-IO: 1; V-NP-NP: 8; NP-NP-V: 10.

d. das [*Transportieren* eines Containers nach Madagaskar]$_{NP}$ (Ge.)
the transport$_{INF}$ a$_{GEN}$ container$_{GEN}$ to Madagascar

Functional lexical heads such as articles and complementizers precede their complements in all Germanic languages.

The position of the head in a phrase correlates with a number of syntactic properties that will be reviewed in the following section. Since the VP is a core constituent of a clause, its syntactic properties are reflected in the syntactic properties of clauses.

Table 1: A synopsis of syntactic correlates of OV/VO

	OV	VO
i. particle verbs	particle ← V	V → particle
ii. resultatives	resultative ← V	V → resultative
iii. order of auxiliaries	... (XP) V ← Aux	... Aux → V (XP) ...
iv. VP-medial adverbs	☑ [DP adverb V]$_{VP}$	☒ [V adverb DP]$_{VP}$
v. left-adjoined adjuncts	unconstrained	head-adjacency
vi. VP-internal scrambling	☑ [DP$_i$ DP e$_i$ V]$_{VP}$	☒ [V DP$_i$ DP e$_i$]$_{VP}$
vii. V-V-complementation	... [... [V° V°]$_{verbal\ cluster}$]$_{VP}$[3]	... [V° [V° ...]$_{VP}$]$_{VP}$
viii. expletive or quirky subject	excluded	obligatory expletives

The first three properties (i.-iii.) are sub-instances of the directionality property that determines V-O and O-V order, respectively. The arrows symbolize the directionality relation between the head and the element it combines with. 'Particles' refers to those particles of particle verbs that are obligatorily stranded when the finite verb occurs in the fronted position, viz. in V2 and V1 clauses; see also Toivonen (ch.23, this vol.).

For auxiliaries, the directionality-sensitive property is their selection effect on the form of the dependent verb. A main verb selects category and case of its nominal complements; an auxiliary selects a verbal form[4] of the dependent verb such as a bare infinitive, an infinitive with infinitival particle, a participle or an aspectual form as for instance the English progressive form. Moreover, in VO languages, the relative order of auxiliaries is strict. Germanic OV languages, on the other hand, are known for order variations.

The second triplet (iv. - vi.) lists syntactic properties that are unique for head-*initial* VPs. These

[3] This two-verb cluster here merely serves as an example. Verb clusters may easily consist of up to five verbs.
i. da man ihn [liegen bleiben lassen können wird] Ge. (Bech 1957/1983:64)
since one him [lie remain let can will] ('since one shall be entitled to let him stay recumbent')
ii. dat hij de chauffeur [willen laten blijven wachten had] Du. (Augustinus 2015:8)
that he the driver want let stay wait had ('that he had wanted to keep the diver waiting')

[4] The analogy between case government and 'status' government' ("Statusrektion") has been emphasized first by Bech (1957; 1983:17): "*statusrektion und statuskongruenz [...] in genauer analogie mit der terminologie der kasuslehre*" (= status government and status agreement in precise analogy to the terminology of the case systems). The verbal status categories are bare infinitive, supine (past participle), and infinitive with particle '*to*'.

properties are absent in head-final (verb) phrases. Head-initial VPs (and NPs as well) are 'compact'. There is no room for interveners between the head and the nominal objects, neither for adverbials nor for scrambled arguments. Adjuncts to head-initial VPs that precede the verb are subject to an adjacency constraint. The head of the adjunct must be adjacent to the VP. This constraint is absent in head-final structures.

The final two properties concern follow-up properties of the head-initial vs. head-final structure of VPs. The Germanic languages with head-final VPs employ *verb clustering* instead of stacking VPs as in VO languages. In verb clusters, the main verb plus the auxiliaries and quasi auxiliaries of a simple clause form a syntactic unit. In VO languages, the auxiliaries and quasi-auxiliaries each select a VP, with the VP of the main verb as the most deeply embedded one.

The final property is the hallmark of the SVO type. There are two types of languages, in which the main verb precedes the objects, namely SVO and VSO. In the SVO type, the subject argument is assigned to a special position outside of the VP. This position *precedes* the main verb while the object positions *follow* the main verb. In OV language, any nominal argument precedes the main verb. The structural subject position is obligatory in SVO and it is obligatorily lexicalized. In the absence of a subject argument, an expletive element lexicalises this position. In OV languages, there is arguably no VP-external structural subject position and therefore no room for an expletive subject in an otherwise subjectless clause (Haider 2010:36; 2015).

2. Syntactic correlates of the base-ordering types

2.1 Particle verbs

Particle verbs are a highly productive combination of a particle and a verb in Germanic languages (see Dehé 2015). Particle verbs are syntactic units consisting of two head-level elements, namely a particle and a verb.[5] Most of these particles are homophonous with prepositions of the particular languages. The linearization of the particles relative to the verb matches the OV and VO order, respectively. In VO languages, the particles *follow* the verb; in OV languages they *precede*, unless they are stranded when the finite verb is in a displaced position, such as the V2-position. Here is an illustrative cross-linguistic sample.

(5)	look up (VO)		'up-look' (OV)	
a.	kig op	(Da.)	*op*kyk	(Af.)
b.	sláa upp	(Far.)	*op*zoeken	(Du.)
c.	fletta upp	(Icel.)	*op*sykje	(Fr.)
d.	slå opp	(Norw.)	*auf*schlagen	(Ge.)
e.	slå upp	(Sw.)	*oyf*zukhn	(Yi.)

In VO languages, the verb and the particle may occur in non-adjacent positions within the verb phrase. The Scandinavian languages display several distinct patterns, as illustrated by the examples (7) from Thraínsson (2007: 34, 142). Faroese, Icelandic, and Norwegian pattern like English (6). The particle *may* be stranded after an object unless the object is a pronoun. In

[5] Particle verbs are *syntactically* complex. The must be distinguished from *morphologically* complex verbs. In German, for instance, 'umfahren' (bypass vs. run sb. down) or 'übersetzen' (ferry across vs. translate) are ambiguous in their written form. Stress disambiguates. If the verb is the particle verb, the particle carries the main stress. If the initial morpheme is a prefix, the verbal root carries the stress. When the verb is finite and gets fronted, the particle is stranded. A prefix cannot be stranded.

Danish, the particle *must* be stranded behind an object (7a), while in Swedish it *must not* (7d). For more details see Svenonius (1996), Vikner (in press).

(6) a. He looked the number/it *up*
b. he looked *up* the number/*it
c. Hann gjørdi *upp* snøri/*ta. (Fa.)
he made up fishing-line$_{-DEF}$/*it
'He wound up the fishing line.'
d. Hann gjørdi snøri/ta *upp*.
e. Ég skrifaði *niður* símanúmerið/*það. (Ic.)
I wrote down phone-number$_{-DEF}$/it
f. Ég skrifaði símanúmeriðniður/það *niður*.
g. Han spiste *opp* tørrfisken/*den. (No.)
he ate up dryfish$_{-DEF}$/*it
h. Hann spiste tørrfisken/den *opp*.

(7) a. Jeg skrev nummeret/det *op*.
I wrote number$_{-DEF}$ /it down
b. Jeg skrev *op* *nummeret/*det. (Da.)
I wrote up *number$_{-DEF}$/*it
c. Hon kastade *ut* Johan/honum. (Sw.)
she threw out J./him
d. *Hon kastade Johan/honom *ut*.

In VO languages with optional particle stranding, but not in OV language, particles may appear in a position between two objects (8a,b). Such a particle position is ungrammatical in any OV language. Only within a verbal cluster could a particle be separated from its verb, as in Dutch (8c) in comparison with (8d,e). In this case, the only intervening items are verbs of the same verbal cluster.

(8) a. John sent the stockholders *out* a schedule. (Neeleman 2002: 141)
b. Í gær hafa þeir sent strákunum *upp* peningana. (Collins & Thráinsson 1996: 435)
yesterday have they sent boys$_{-DEF}$ up money$_{-DEF}$
c. omdat de rapper niet *mee* heeft *gewerkt* aan het onderzoek (*De Telegraaf* Sept. 15, 2016)
since the rapper not *with* has *worked* at the investigation (*with-work = cooperate*)
d. dat hij aan die tweede inbraak niet heeft *meegewerkt* (*Het Laatste Nieuws* July 11,2016)
that he at the second break-in not has participated
e. Dokter Moser [...] die niet *meegewerkt* heeft aan de studie (*VRT Nieuws* July 9, 2015)
doctor Moser [...] who not collaborated has on the study

2.2 Resultatives

In all Germanic languages, particles, adjectives as well as PPs are employed for resultative readings, that is, for denoting a property of the resulting state. What Broekhuis (2013:135-136) affirms for Dutch is true for all Germanic OV languages: "*Both resultatives and particles must be left-adjacent to the verbs in clause-final position.*"

(9) a. als er es *auf*machte (Ge.)
when he it *up*-made ('up-make' = open)
b. als er es *sauber* machte
when he it *clean* made
c. als er es zu einem Problem machte
when he it to *a problem*$_{DAT}$ made
'when he turned it into a problem'

Broekhuis' statement applies not only to the base position of these items. Just like particles (10a), resultative PPs (10b,c), unlike locative PPs (10d) or prepositional objects (10e) do not extrapose and they cannot be stranded by V(P) topicalization (11).

(10) a. dat Jan het boek {*neer*} legde {*neer} (Du.; Broekhuis 2013: 136)
that Jan the book *down* put
b. dat Jan het boek {*op de tafel*} legde {*op de tafel}.[6]
that Jan the book *on the table* put
c. Jan hat alles {*in kleine Stücke*} geschnitten {*in kleine Stücke} Ge.
jan has everything *in small pieces* cut
d. Jan heeft op zijn vader gewacht *op het station*. (Du.; Broekhuis 2013: 368)
Jan has for his father waited at the station
e. Jan heeft *op het station* gewacht op zijn vader.

Participles or infinitival verbs may be topicalized (11a), but topicalization of the verb must not strand a directional or resultative PP (11b). These expressions are pied-piped (11c).

(11) a. *Gewartet* hat er auf sie. - *Warten* wird er auf sie. Ge.
waited has he for her - wait shall he for her
b.*Gestellt hat er es auf den Tisch. - *Getrunken hat er das Glas leer
put has he it on the table - drunk has he the glass empty$_{resultative}$
c. [Auf den Tisch gestellt] hat er es - [Leergetrunken] hat er das Glas
on the table put has he it empty-drunk has he the glass

In VO languages, resultatives of any category - particles, adjectives, PPs - *follow* the verb (12). The relation between the verb and these elements is tight. There is no room for intervening adverbs (12a-c). In languages with optional particle stranding, a parallel pattern is attested for resultative adjectives (12d,e). If the object is pronominal, it precedes the particle as well as a resultative.

(12) a. He wiped it (*yesterday) *up*
b. He wiped it (*yesterday) *clean*
c. He wiped it (*yesterday) *under the door handle*
d. Then they *cut* {*loose*} the craft {*loose*}

[6] In (i), the extraposed PP is not directional but locative. In German, this is reflected by dative (locative) instead of accusative (directional) case assigened by the preposition *'auf'* (on).
i. dat Jan het boek {op de tafel} neer legde {op de tafel}. Du.
that Jan the book on the table down put
ii. dass Jan das Buch auf den$_{AKK}$ Tisch legte - dass Jan das Buch {auf dem$_{DAT}$ Tisch} ablegte {auf dem Tisch}
that Jan the book on the table put - that Jan the book on the table down-put

e. Vi *vaska* {*reint*}golvet {*reint*} (No.; Åfarli 1985: 97)
we washed *clean* floor$_{\text{-DEF}}$

f. Þeir *dældu* hana *fulla* af lyfjum (Ic.; Whelpton 2007)
they *pumped* her$_{\text{-fem-ACC-sg}}$ *full*$_{\text{-fem-ACC-sg}}$ of drugs

2.3 The order of auxiliaries

In all Germanic VO languages, the relative order of auxiliaries and quasi-auxiliaries is uniform and invariant. The dependent verb *follows* the verb it is dependent on in terms of status selection (see fn. 4). In (13a), *'skulle'* selects an infinitival form which in turn selects a supine. The auxiliary order in (13a,b) is representative of the Germanic VO languages; see Thraínsson (2007: 459), Bentzen (2005:156). Frisian (13c) illustrates the OV order of verbs, which is a mirror image of the VO order. The most frequent order of verbs in a cluster in Dutch (13d) is the inverted order of the Frisian example. The German example (13e) appears like a mixture of the Dutch and the Frisian order. The first two verbs follow the Dutch order while the other four verbs are serialized as in Frisian. This is the effect of a special constraint that is operative in (13e), namely the IPP[7] constraint discussed below. In general, the verbs in German are serialized in the OV order, that is, the order illustrated be Frisian (13c).

(13) a. Du *skulle ha kunnet temme* løver nå. No. (Hauge 2003:63)
you should have can$_{\text{SUP}}$ tame lions now

b. Það *munu* aldrei margir *hafa lokið* verkefninu Ic. (Thraínsson 2007:56)
there will never many have$_{\text{INF}}$ finished$_{\text{SUP}}$ the assignment-$_{\text{DEF}}$

c. omdat ik dy dêr wol ris *stean bliuwen sjen wollen hawwe soe* Fr. (Hoekstra 1998:155)
that I you there MP MP stand stay see want$_{\text{-Participle}}$ have would

d. dat ik je daar wel eens zou hebben willen zien blijven staan Du. (Hoekstra 1998:155)
that I you there MP MP would have want see stay stand

e. dass ich dich da ja *würde haben stehen bleiben sehen wollen* Ge.
that I you there MP MP would have stand stay see want

Compared to the invariant relative order of auxiliaries in VO, the grammar of auxiliaries is more complex in the Germanic OV languages. First, there is order variation within a given language (14a,c), and second, there is cross-linguistic order variation (14c,d). In Dutch, there is a slight North-South gradient for the order (14a) over (14c), but both orders are frequent in The Netherlands and in Belgium.[8]

(14) a. dat niemand iets *gedaan heeft* Du.
that nobody anything *done has*

b. dass niemand etwas *getan hat* Ge.
that nobody anything *done has*

[7] IPP (*Infinitivus pro participio* = infinitive for a participle; "Ersatzinfinitiv") refers to the following phenomenon: An auxiliary that selects a participial form on the dependent verb is fronted across the verb in the verb cluster and the verb switches into the infinitival form. In German, IPP is triggered by modal verbs and other quasi-auxiliaries like 'lassen' (let), 'brauchen' (need) and perceptions verbs like sehen ('see') and hören ('hear'). In Dutch and Afrikaans, the set of IPP triggers comprises more kinds of verbs than in German.

i. *dass er es essen *gemusst hat* $\Rightarrow_{\text{IPP}}$ dass er es *hat* essen *müssen* / dass er das essen *hat müssen*
that he it eat must$_{\text{Participle}}$ has $\Rightarrow_{\text{IPP}}$ that he it *has* eat *must*$_{\text{INF}}$ / that he it eat *has must*$_{\text{INF}}$ (= 'that he had to eat it')

[8] A google search for "gedaan heeft" produced 662.000 hits, and 13.700 for news sites; "heeft gedaan" 565,000 and 43.800, respectively.

c. dat niemand iets *heeft gedaan* Du.
d.*dass niemand etwas *hat getan* Ge.
e. dat hy later *sou/moet gekom het* Af. (Donaldson 1993: 366)
that he later *would/must come have*
f. of hy miskien *sou kan kom help* Af.
whether he perhaps would can come help

A complicating factor is the IPP phenomenon. In German (15a), 'würde haben' precedes the main verb in the verbal cluster because of the IPP effect triggered by 'können'. In Dutch, (15b), all auxiliaries are in the inverted order, which would be ungrammatical in German. Afrikaans[9] optionally allows an in situ switch to the infinitival form (15c,d).

(15) a. dass er jetzt Löwen *würde haben zähmen können* Ge.
b. dat hij nu leeuwen *zou hebben kunnen temmen* Du.
c. Ons het *kom kuier.* Af. (Augustinus & Dirix 2013:221)
we have come$_{INF}$ visit$_{INF}$
d. 'n vragmotor wat aangery gekom$_{Participle}$ het Af.
a lorry which driving-along come has

But even without IPP, there is variation in the order of verbs in the cluster as (16) illustrates for Dutch and (17) for German four-verb clusters. The numbers are the google hits with the filter 'news' followed by the number of google hits in toto. The variant (16d) is ungrammatical in Dutch. All variants are synonymous.

(16) a. gebeurd *zou* kunnen zijn (111; 24.000)
happened$_{Participle}$ *would* can$_{INF}$ be$_{INF}$
'would be possible to have happened'
b. *zou* kunnen gebeurd zijn (32; 3.000)
c. *zou* kunnen zijn gebeurd (4; 60.000)
d.**zou* gebeurd zijn kunnen (0; 0)

(17a) is ungrammatical, because the modal is a trigger of IPP. Therefore, the auxiliary *'have'* gets fronted, but there are several alternative positions, namely (17b-d).

(17) a.*passiert sein gekonnt *hätte* (0; 0)
happened be can$_{Participle}$ had$_{Past\text{-}SUBJ}$
'could have had happened'
b. passiert sein *hätte* können (0; 508)
c. passiert *hätte* sein können (2; 1030)
d. *hätte* passiert sein können (8; 2350)

2.4 VP-medial adverbs

The positioning of adverbs sharply differentiates between VO and OV. In VO, adverbs either

[9] An in-situ switch is characteristic of Eastern Austrian vernacular (i). The standard versions are as in (ii).
i. dass sie nicht nachgeben *müssen/dürfen*$_{INF}$ hätte
that she not give-in must/may had
ii. dass sie nicht *hätte* nachgeben müssen/dürfen - dass sie nicht nachgeben *hätte* müssen/dürfen

precede the VP or follow the verb plus its nominal arguments, but they do not intervene. The pattern (18a), which Engdahl et. als (2003:43) provide for Swedish, is representative of North Germanic languages and English, modulo V2. The Icelandic example (18c) illustrates the general pattern (Traínsson 2007:37). In OV, however, adverbs may intervene between the verb and nominal objects (18d, e).

(18) a. XP V_{FIN} Subj *S-ADV* $V_{NON\text{-}FIN}$ Obj_{IND} Obj_{DIR} *ADV*
b. She had {*often*} read {**often*} the instructions {*often*}.
c. Hún hafði {*oft*} lesið {**oft*} leiðbeiningarnar {*oft*}. Ic.
she had {*often*} read {*often*} instructions$_{\text{-DEF}}$ {*often*}
d. wenn man jemandem *absichtlich* etwas *mehrmals* erklärt Ge.
if one somebody$_{DAT}$ *intentionally* something$_{ACC}$ *repeatedly* explains
e. of iemand {*toevallig*} iets {toevallig} gezien heeft Du.
whether someone {*accidentally*}something {*accidentally*}seen has

If an adverb appears to intervene between nominal objects in a North Germanic language, this is the effect of an interfering condition, namely *'object shift*'; for details see Thraínsson (2010) and Broekhuis (ch.19, this vol.). Object shift applies only if the VP is headless, that is, the verb is in a fronted position (19a,b). In addition, no lexical material must precede the shifted item in the VP, that is neither verb (19c) nor a stranded particle nor any other VP-internal item. Fronting a pronominal object across an adverbial or a negation particle is ungrammatical in all these instances; see Engdahl et als. (2003:45) on Swedish.

(19) a. Bo gav_i $hende_j$ *aldrig* [e_i e_j bogen]$_{VP}$ Da.
Bo gave her *never* book$_{\text{-DEF}}$
b. Eva gav_i $honom_j$ *förmodligen inte* [e_i e_j några pengar]$_{VP}$ Sw.
Eva gave him$_{ACC}$ probably not any money
c.*Eva har $honom_i$ *förmodligen inte* [gett e_i några pengar]$_{VP}$
Eva has him *probably not* [given any money]

In OV, the availability of the VP-medial positions as in (18d,e) for adverbs is a cross-linguistically valid property. It is available in a language with DP scrambling such as German but also in Dutch, which forbids the scrambling of DP objects.

2.5 A constraint on phrases *left*-adjoined to head-*initial* phrases

Adjunction to head-initial phrases is constrained in a way that adjunction to head-final phrases is not. The head of the adjunct must be adjacent to the phrase the adjunct is adjoined to. This is true for adjunction to VPs as well as for adjunction to NPs. English is representative of the Germanic VO languages in this respect. Since VP and NP are head-initial, the effect shows in each case, as (20) exemplifies.

(20) a. They [[much *more often* (*than the controls)] guessed the result correctly]$_{VP}$
b. a [[extremely *happy* (*with his score)] candidate]$_{NP}$

In the Germanic OV languages, the VP is head final and the NP head initial. So, adjunction to the VP is unconstrained (21a,b), while adjunction the NP (21c,d) is subject to the very same adjacency constraint as in English and the North-Germanic languages.

(21) a. als hij [*verder dan vijv kilometer*] had moeten rijden Du.[10]
when he [more-far than five kilometers] had have-to ride
b. So kann man Züge [viel *genauer* als bisher] lokalisieren Ge.[11]
that-way can one trains [much more-*precisely* than to-date] localize
c. eine [viel genauere (*als bisher)]$_{AP}$ Lokalisierung Ge.
a much more-precise (than to-date) localisation
d. een [minder intelligente (*dan/als Els]$_{AP}$ persoon Du.
a less intelligent (than Els) person

This phenomenon has an immediate impact on the theoretical modelling of structures with adverbial or attribute phrases. It is a genuine effect of adjunction and it is absent with phrases in spec positions, be it a subject or a phrase fronted to the clause initial-position. Hence, any claim that situates adverbial phrases or attributive APs in spec-positions of functional heads fails to capture this effect (Haider 2015).

2.6 VP-internal scrambling

Variable ordering of argumental DPs (viz. 'scrambling') is a property of the containing phrases, namely head-*final* phrases. This is a necessary but not sufficient property. In addition, the scrambled DPs must be morphologically identifiable, either by case or by relational particles. German meets both preconditions. As a consequence, the order of nominal arguments, subject included, is variable in head-final phrases, that is, in VPs (22a,b) and APs. On the other hand, head-initial phrases such as NPs (22c,d) are as rigidly serialized as in all Germanic VO languages.

(22) a. [Siegern$_{DAT}$ Pokale$_{AKK}$ überreichen]$_{VP}$ Ge.
winners cups hand-over
b. [Pokale$_{AKK}$ Siegern$_{DAT}$ überreichen]$_{VP}$
c. das [Überreichen von Pokalen/der Pokale$_{GEN}$ an Sieger]$_{NP}$
the hand-over$_{INF}$ of cups/the cups' to winners
d.*das [Überreichen an Sieger der Pokale$_{GEN}$/von Pokalen]$_{NP}$
the hand-over$_{INF}$ to winners of cups/the cups'

In Dutch, non-pronominal DPs are morphologically indistinct with respect to subject vs. object case and so they do not scramble. Unlike German, neither the nouns nor the head of the attributes nor the articles signal case distinctions and unlike in German "*direct objects must appear to the right of indirect objects, while both of them must appear to the right of the subject*" (Neeleman 1994a:416). The German counterparts of (23b,c) are fully grammatical.

(23) a. dat Jan de mannen deze film toont (Neeleman 1994a:416)
that John the men this movie shows
b.??dat Jan deze film de mannen toont
c.*Dat de mannen Jan deze film toont

The only distinctly marked arguments in Dutch are prepositional objects and these objects may be scrambled, as ANS (Geerts et als. 1984: 989f.), the standard grammar of Dutch, witnesses

[10] Stephen King, De duistere kant.
[11] Deutschlandfunk (web site); Dec. 13, 2016.

(24c). This is an essential difference between OV and VO in languages without morphological case-marking. In VO languages, prepositional objects cannot be scrambled (24d) although their grammatical function would be easily detectable.

(24) a.*Toen hebben de autoriteiten *het kind* de moeder teruggegeven. Du.
then have the authorities the child the mother back-given
b. Toen hebben de autoriteiten *het kind* aan de moeder teruggegeven
then have the authorities the child to the mother back-given
c. Toen hebben de autoriteiten aan de moeder *het kind* teruggegeven
d.*Then, the authorities returned to the mother the child

Icelandic and Faroese are testimonies for the rigidity of word order in VO even in the presence of morphologically clearly distinguishable objects. The Germanic languages provide immediate counterevidence for a popular generalization, namely the direct correlation between explicit case-marking and 'free' word order. Icelandic confirms insights already gained from German NP-internal word order (23d): The word order in head-initial phrases is strict and this is independent of rich case marking, which would guarantee clearly recoverable grammatical relations under any order.

Dehé (2004) sums up her experimental study[12] as follows: "*The order of the objects in Icelandic double object constructions is much more restricted than one would expect. The unmarked order is by far the preferred one even in contexts where the inverted order is expected to be equally acceptable*."

Thraínsson (2007:98) indicates "*For a relatively small number of ditransitive verbs it is possible to reverse the ordering of the indirect and direct object*" and these verbs "*correspond roughly to the English variants where the goal follows the direct object, except that in English the goal would be prepositional (to the king, to the parents)*."

The last observation is particularly instructive since there exists a corresponding set of facts in German. For a small class of double-object verbs in German, ACC-DAT is the neutral order. The dative object of these verbs is a goal relation and not an experiencer relation as with the majority class of DAT-ACC verbs, and in addition, this goal-relation cannot be alternatively expressed by means of a PP object. However, in the majority class of DAT-ACC verbs, there is a subset of verbs whose dative object can be construed as an experiencer or a goal relation (25c-e).

(25) a. Sie setzten Kandidaten$_{ACC}$ Temparaturen$_{DAT}$ über 45° aus Ge.
they exposed candidates temperatures above 45°
'They exposed candidates to temperatures above 45°'
b.??Sie setzten Temperaturen über 45° Kandidaten aus
c. Er übergab alle Dokumente an die Polizei
he over-gave all documents to the police
d. Er übergab alle Dokumente$_{ACC}$ der Polizei$_{DAT}$
he over-gave all documents the police
e. Er übergab der Polizei$_{DAT}$ alle Dokumente$_{ACC}$

[12] 18 participants; 36 target items plus 25 filler items; acceptability judgements on a 1-4 scale.

The prepositional object variant (25c) is reserved for pure goal relations. The Dative alternates with the PP option when the relation can be construed either as goal or experiencer-like relation. If the verb provides only an experiencer relation (26a), the PP option is not available (26b).

(26) a. Sie erklärte ihm$_{DAT}$ das Problem$_{ACC}$ Ge.
she explained him the problem
b.*Sie erklärte das Problem$_{ACC}$ an ihn$_{ACC}$
she explained the problem to him

In Dutch, however, the alternation between indirect object and a prepositional object with *'aan'* (to) is available for a much large class of verbs than in German, as the contrast between (26b) and (27) illustrates. This larger class of double-object verbs is congruent with the English class of verbs that display the so-called dative-alternation, viz. an alternation between the indirect object variant and a prepositional object with the preposition 'to'.

(27) Hij verklaarde het aan Constantijn Huygens.
he explained it to C. H.

In Icelandic, the class of verbs that allow an ACC-DAT order is highly restricted. It is worthwhile pointing out that Dehé's (2004) findings call for a reassessment of frequently cited examples for a DO$_{ACC}$-IO$_{DAT}$ order in Icelandic. Thraínsson (2007:131) approvingly follows Rögnvaldsson's (1990) judgements of (28a,b): "*Some double object verbs in Icelandic allow a DO–IO order of their arguments in addition to the normal IO–DO order.*" Dehé (2004:94), however, reports for the very same stimuli (28a,b) that "*the inverted order was rejected*" by all her informants.

(28) a. Hann gaf konunginum ambáttina.
He gave king-$_{DEF\text{-}DAT}$ maidservant-$_{DEF\text{-}ACC}$
b. Þau sýndu foreldrunum krakkana.
They showed parents-$_{DEF\text{-}DAT}$ kids-$_{DEF\text{-}ACC}$

In sum, even distinctly case-marked objects do not scramble in head-initial languages such as in Icelandic while morphologically poorly case-marked arguments may be scrambled in OV languages such as German. In the following example, only the dative of the indirect object is morphologically coded. The other two arguments in (29) can only be identified as non-datives. In principle, they could either be nominative or accusative. Nevertheless, scrambling is available.

(29) dass solche Spiele$_{NOM/ACC}$ Kindern$_{DAT}$ alle Eltern$_{NOM/ACC}$ verbieten sollten Ge.
that such games children all parents forbid should
'that all parents should forbid children such games'

The crucial difference between German and Dutch seems to be the following. In Dutch, the Grammar does not provide any case distinctions for non-pronominal subjects. In German, there are morphologically coded case distinctions in all four cases, especially for articles and the heads of attributes. Even if these distinctions are morphologically neutralized in quite a few contexts, this does not preclude scrambling. What seems to bar scrambling is the *principled* morphological indistinctness of DPs in an OV language with respect to their grammatical functions, as in Afrikaans or Dutch.

That scrambling must not change the linear order of object noun phrases in Dutch is standard wisdom. Nevertheless, 'scrambling' has been invoked for Dutch in another respect, namely the serialization of adverbials relative to objects. The analysis rests on a doubtful premise, though, namely the premise of an exact parallel between adverbial placement in VO and OV. Adverbials are assumed to either precede or follow the VP. If the adverbial *'gisteren'* in (30) precedes the VP just like in English, the objects have to be assigned to positions outside of the VP, as indicated in (30b). This is 'Dutch scrambling'. This analysis has originally been proposed by Kerstens (1975). It has gained broad reception in Generative accounts of Dutch clause structuring, but it has not reached full acceptance. Substantive counterarguments have been put forward in Neeleman & Van de Koot (2008), Neeleman & Weerman (1999), and Neeleman (1994a,b), In the analysis they argue for, the objects in (30a,b) are in their base-positions and the adverb in (30b) intervenes.

(30) a. dat Jan de mannen de film *gisteren* toonde
that Jan the men the movie yesterday showed
b. dat Jan de mannen_i de film$_j$ *gisteren* [e_i e_j toonde]

The fact that the relative order of nominal arguments is rigid in Dutch prompted researchers to equate the Dutch phenomenon with Scandinavian object shift, as for instance Broekhuis (2008). Vikner (2007: 411) has listed seven independent syntactic contexts in which scrambling and Scandinavian object shift differ. The overarching difference is the fact that object shift must not cross any VP-internal material such as a verb, a stranded particle or a co-argument. "*Only object shift requires verb movement, and only object shift is restricted to DPs*." (Vikner 2007: 393). This is not true of the OV-kind of scrambling, and it is not true for the alleged equation of scrambling and object shifting in Dutch. A clear case of scrambling in Dutch that differs crucially from Object shift is the scrambling of PP objects. PP objects may be scrambled across an object in Dutch[13] just like in German, but they cannot be object-shifted across an object in Scandinavian languages and they cannot be scrambled within a head-initial VP, as exemplified by English (Haider 2010:14) or in a head-intial NP, as illustrated in (22). Finally, resultative PPs are not extraposed in OV. They are obligatorily preverbal in OV, and they do not shift in VO.

2.7 Verbal clusters in OV - stacked VPs in VO

If in a VO-language a single clause contains more than one verb, then each verb heads a VP and so the VPs are stacked (31a). Each auxiliary is head of a VP, with another VP serving as its complement (31a). Stacking is the source of the rigid relative order of the auxiliaries in VO. In the Germanic OV-languages, the verbs of a simple clause form a verb cluster (31b), as illustrated by Frisian (13c, in sect. 2.3) or German; see Wurmbrand (2017 and ch.18, this vol.). The variable verb order in verb clusters is the topic of section 2.3. The verb order *variations* as well as the *impenetrability* for non-verbal material[14] are characteristic properties of verbal clusters.

[13] i. Toen hebben de autoriteiten aan de moeder$_i$ het kind e_i teruggegeven (Geerts et als. 1984: 989)
then have the authorities to the mother the child back-given
ii.* Toen hebben de autoriteiten het kind$_i$ de moeder e_i teruggegeven
then have the authorities the child the mother back-given

[14] The term 'verbal material' includes particles of particle verbs (i) and resultative adjectives as in (ii.):
i. dat hij haar had *op* moeten bellen. (Haeseryn et al. 1997, p.1357)

(31) a. ... [$_{VP\text{-}1}$ V_1 [$_{VP\text{-}2}$ V_2 [$_{VP\text{-}3}$ V_3 ...]]] e.g. *'shall*$_{V1}$ *have*$_{V2}$ *answered*$_{V3}$*'*
b. ... [$_{VP}$ ... [$_{V\text{-}cluster}$ V_3 V_2 V_1]] e.g. *'beantwortet*$_{V3}$ *haben*$_{V2}$ *wird*$_{V1}$' Ge.

The following example (32a) with an adverbial left-adjoined to each VP illustrates the stacked V-VP complementation structure of English. The Dutch examples (32b,c) illustrate the clustering phenomenon and one of its order variations; see section 2.3. for verb order variation.

(32) a. It [certainly [$_{VP}$ *may* [possibly [$_{VP}$ *have* [indeed [$_{VP}$ *been* [badly [$_{VP}$ *formulated*]]]]]]]]
(Quirk et al. 1985: § 8.20, 495)

b. Hij zei dat hij de chauffeur [had willen laten blijven wachten] (Augustinus 2015:8)
he said that he the driver has want$_{INF}$ let$_{INF}$ stay$_{INF}$ wait$_{INF}$
'He said that h wanted to let the driver wait'

c. Hij zei dat hij de chauffeur [willen laten blijven wachten had] (Augustinus 2015:8)

Clustering is not restricted to auxiliaries and quasi-auxiliaries. For a subset of control verbs, a clustering variant (33a,b) optionally alternates with the clausal infinitival complementation (33c). A serialization as in (33b) is a particularly unequivocal indication of a cluster since the infinitival main verb that otherwise heads the VP of the infinitival complement clause (33c) is flanked by the main verb and the auxiliary of the finite clause. The clustering variants (33a,b) entail clause union. The clause structure in the clustering variant is *mono-clausal* while the control construction is *bi-clausal*, that is, it consists of a matrix clause with an *embedded* infinitival clause (33c). Obviously, this structural difference is the source of numerous predictable follow-up effects. As for German, Haider (2010: 211-213) lists and discusses sixteen syntactic side-effects of clustering, confirming this basic structural difference.

In Dutch, the IPP effect applies to these clustering control verbs as well,[15] whence the infinitive *'proberen'* in the clustering variant instead of the participle *'geprobeerd'* in the clausal complementation variant (33c), that is, the familiar infinitival control construction.

(33) a. dat Jan Marie [heeft proberen te kussen]$_{cluster}$ (Augustinus 2015:25) Du.
that Jan Marie has try$_{INF}$ to kiss

b. dat Jan Marie [proberen te kussen heeft]$_{cluster}$ (Augustinus 2015:25)

c. dat Jan geprobeerd$_{Participle}$ heeft [Marie te kussen]$_{clause}$

The clustering variant is restricted to a subclass of control verbs in the Germanic OV language. (34a,b) illustrates the parallel construction in Frisan and German. In the cluster (34b) the infinitival main verb of the clausal variant (34c) is sandwiched in the cluster, similar to Dutch (33b), due to the IPP effect triggered by the modal 'können' (can).

(34) a. omdat er har mei har wurk [besocht te helpen]$_{cluster}$ (Hoekstra 2016) Fr.
because he her with her work tried to help

b. dass Jan Marie [hätte zu küssen versuchen können]$_{cluster}$ Ge.
that Jan Marie had to kiss try$_{INF}$ can$_{INF}$
'that Jan could have tried to kiss Marie'

---

that he her had up must ring - 'that he had to ring her up' (opbellen = ring up)

ii. dat hij zich niet [zal laten *bang* maken] (Haeseryn et al. 1997: 1358)
that he himself not will let afraid make - 'that he will not let (somebody/something) frighten him'

[15] In German, the domain of IPP effects is more restricted than in Dutch. For instance, IPP does not affect these alternatively clustering control verbs.

c. dass Jan hätte versuchen können [Marie zu küssen]$_{clause}$ Ge.
that Jan had try$_{INF}$ can$_{INF}$ Marie to kiss

2.8 Subject expletives and quirky subjects

The following examples (35) of passivized intransitive verbs illustrate a crucial contrast between Germanic OV and VO languages with respect to subjectless clauses. In the VO group, in the absence of a subject argument, the subject position is obligatorily lexicalized by means of an expletive element (Vikner 1995:209). The Germanic OV languages do not require or admit an expletive subject.

(35) a. at *der* er blevet danset Da.
that EXPL has been danced
b. att *det* arbetades Sw.
that EXPL works$_{Pass}$
c. dat wordt gewerkt Du.
that is worked
d. dass gearbeitet wird Ge.
that worked is

Without an expletive, (35a,b) would be ungrammatical. German, on the other hand, clearly demonstrates that an expletive is not admitted. The candidate for serving as expletive is '*es*' (it), which is homophonous with the third person neuter pronoun. (36a) is unacceptable. The appreciation of Dutch is complicated by the fact that the candidate for the very same expletive function is '*er*', which is homophonous with the locative adverbial particle, corresponding to English *'there'*. So, 'er' in (36b) could be an expletive or an adverbial.

(36) a.*dass es getanzt/gearbeitet wird Ge.
that it danced/worked is
b. dat er wordt gewerkt Du.
that there is worked

The test case is obvious. If it is an adverbial, it may be absent. If it is an expletive subject, it must be present, just as in (35a,b). The research literature on this issue is controversial. For Dutch syntacticians such as Hoekstra & Mulder (1990), Neeleman and Weerman (1999: 210-213) or Koeneman (2000:192), '*er*' in (36b) does not qualify as an expletive subject. Nowadays, such judgements are easy to confirm by corpus searches. A Google search for the strings in (37), restricted to news sites, produced the following results. The numbers in brackets are the results for the unrestricted search.[16]

(37) a. "dat wordt gewerkt" 594 (345.000)
b. "dat *er* wordt gewerkt" 1780 (819.000)

[16] A search for the following German string on news sites produced the following results; the unrestricted search hits (Feb 21, 2017) are in brackets.
i. "dass gearbeitet wird" 77 (4.780) (that worked is)
ii.* "dass *es* gearbeitet wird" 0 (7) (that *it* worked is)
iii. "dass *da* gearbeitet wird" 1 (3.000) (that *there* worked is)

c. "dat wordt gesproken over" 176 (162.900)[17]
d. "dat *er* wordt gesproken over" 800 (312.000)

Backed by such easily reproducible results, it is safe to agree with the above-mentioned grammarians and arrive at the following generalization, which is not restricted to Germanic languages. Germanic VO languages obligatorily lexicalize a VP-external structural subject position. No such requirement holds in the Germanic OV languages. Arguably, there is no VP-external subject position in OV languages, for principled reasons (see sect. 3), because of the following structural difference.

In the SOV clause structure (38a), the head of the VP follows all of its arguments. They are allocated within the same directionality domain. In SVO, there is a mismatch (38b). One argument of the verb is not within the canonical directionality of the verbal head, namely the would-be subject. This argument gets re-assigned to the pre-VP functional subject position, which is obligatory. Expletive subjects are a reflex of the need of lexicalizing it. The arrows in (38) indicate the directional licensing requirement that holds between a head and its dependents; see section3; for sufficient details, you may want to consult Haider (2010:36; 2015:86).

(38) a. $[_{VP}\ XP_{Subj} \leftarrow [_{V'}\ ZP \leftarrow V°]]$
b. $[_{FP}\ XP_j\ [_{F'}\ F° \rightarrow [_{VP}\ e_j\ [V° \rightarrow ZP]]]]$

If, as in the case of Icelandic, a non-nominative DP may occur in the VP-external subject position, viz. the position of XP in (38b), it gains the subject properties that are correlated with this position (Thraínsson 2007:161-165). Typical instances involve verbs whose highest-ranking argument in the argument structure is a dative (39a). Passive is another source for an argument structures in which a dative argument is ranked higher than the derived nominative candidate (39b).

(39) a. Öllum líkar þessi forseti. Ic. (Thraínsson 2007:258)
everybody$_{\text{-DAT-PL}}$ likes$_{\text{-3-SG}}$ president$_{\text{-DEF-NOM-SG}}$
b. Hafa *henni* verið sendir peningarnir? (Thraínsson 2007:162)
have$_{PL}$ her$_{\text{-DAT}}$ been sent$_{\text{-NOM-PL-m}}$ money$_{\text{-DEF-NOM-PL-m}}$
'Has the money been sent to her?'

In (39b), passive turns the direct object into nominative in situ. This shows that nominative assignment is not restricted to the VP-external subject position. The dative argument as the highest ranking argument is placed into the XP position of (38b).

In German, the closest OV-counterpart of Icelandic, the relative order of arguments is the same as in Icelandic, but the preceding dative does not acquire any unequivocal subject properties. (40a) illustrates verbs with a Dative-Nominative base order. (40b) shows that the passive nominative stays in situ, which is confirmed by VP-topicalization (40c).

(40) a. dass Journalisten dieser Präsident gefällt/missfällt Ge.
that journalists$_{\text{-DAT}}$ this president-NOM pleases/displeases
b. dass dem Angestellten das Geld überwiesen wurde

[17] Note that Dutch does not strand prepositions except for combinations of *er*+P°. So, the examples without 'er' are genuine cases of subjectless clauses:
i. dat wordt gesproken over een nieuwe crisis (that is talked about a new crisis)
ii. de eerste keer dat wordt gesproken over een fusie (the first time that is spoken over a fusion)

that the employee$_{DAT}$ the money$_{-NOM}$ sent was

c. [Gelder überwiesen]$_{VP}$ wurden dem Angestellten.
money$_{-NOM-PL}$ transferred were$_{-PL}$ the employee$_{-DAT}$

The grammatical contrast between Icelandic and German with respect to non-nominative subjects is an immediate collateral effect of the OV- vs. VO-based clause structure. Only in the VO-clause structure (38b), there is a VP-external structural subject position which awards subject properties to any phrase in this position.[18]

3. Coming to a theoretical end

What are the regulating grammatical principles responsible for the contrasting patterns reviewed above? The first subset - 2.1 to 2.3 - merely reflects the directional implementation of the head-dependent relation. Any dependent element of the head has to appear in the canonical direction. Therefore, in the base order, nominal objects, particles, resultatives, and dependent verbal projections either precede (OV) or follow (VO) the verbal head they depend on.

The second subset - 2.4 to 2.6 plus 2.8 - is the challenging set for any theoretical modelling. Why should these properties cluster in correlation with the canonical head-complement order? Space limitations forbid a broader discussion. Here is a directionality-based account of licensing based on Haider (2010, 2013, 2015). This account covers the compactness properties of head-initial structures as well as the mandatory raising of a subject to the VP-external structural subject position in SVO languages. The theoretical core assumptions are as follows (Haider 2010:26; 2013:3f.).

(41) a. Projection lines are universally *right-branching*[19] and endocentric.
b. A dependent phrase is licensed in the *canonical direction*.
c. The position of a dependent phrase P is *licensed* $=_{Def.}$ a (projection of the) phrase head h and P *minimally* and *mutually* c-command each other.

It is the *minimal & mutual* c-command condition (41c) that is directly causal for compactness, scrambling, and the need of a functional subject position in VO. In order to directionally license YP in (42b), the verb must be re-instantiated. Note that the empty verb position between YP and ZP is a position for a stranded particle. The resulting shell structure is compact (42c), because of the minimality condition (41c). Any intervening item, be it an adjunct or a scrambled object, would destroy the minimality requirement of the licensing relation (41c).

(42) a. … [YP [$_{V'}$ V°$_{\rightarrow}$ ZP]]$_{VP}$
b. … [V$_i$ $\rightarrow$ [YP [$_{V'}$ e$_i$ $\rightarrow$ ZP]]]
c. … [V$_i$ $\rightarrow$ [(*π) [YP [(*π) [$_{V'}$ e$_i$ $\rightarrow$ ZP]]]]]

In OV, the situation is different because the canonical directionality of licensing is congruent with the directionality of merger (43). Hence not only the head but any projection node on the

[18] Even English displays specimens of non-nominative subjects. The absence of *do*-support in locative-inversion constructions such as (ii) indicates that the PP *'into the valley'* occupies the structural position of the XP in (38b).
i. *Into the valley of death* rode the six hundred - *The six hundred* rode into the valley of death.
ii. *Into which valley rode the six hundred*? - Into which valley did *the six hundred* ride?

[19] In other words, the direction of merger *within* a phrase is universally to the left.

projection line can serve as a licensing node. As a consequence, interveners do not matter. This opens rooms for VP-internal adverbs and for scrambled objects.

(43) a. … [… [YP ← [$_{V'}$ ZP ←V°]]]
b. … [… [YP ← [$_{V'}$ π ← [$_{V'}$ ZP ← [$_{V'}$ π V°]]]]]

The hallmark of SVO languages is the VP-external *functional subject position*. In SVO, the highest argument in the VP is not in the directionality domain of the verbal head. Neither the verb nor a projection node can provide directional licensing. Therefore, a functional head has to do it. The mutual c-command condition (41c) is the trigger for raising the subject to the spec position. The functional head c-commands the position of the trace of the subject, and the raised subject c-commands the functional head.

The adjacency effect for adjuncts on the left of a head-initial phrase is directionality-triggered, too. The pre-VP adjuncts are not directionally licensed in VO. The only available licensing mechanism for these adjuncts is a version of the head-complement mechanism. The head of the adjunct selects the phrase it is adjoined to as its complement. The head-complement structure is reflected by adjacency. In OV, the adjunct is in the licensing domain of the head.

The last property - clustering in OV - is an indirect effect of directionality. In OV, directional embedding by VP-stacking would result in central embedding, which is strongly disfavoured by any parser (44a). Clustering opens an alternative way and reduces the unbounded domain of left-branching structures to a local domain of clustered verbs (44b). Even in this domain, left-branching structures may get reordered into right-branching ones (44c). In VO, the stacked VPs yield a right-branching structure rightaway which does not pose the parsing problems the unpredictable number of opening brackets in (44a) would create.

(44) a.*... [$_{VP}$ [$_{VP}$ [$_{VP}$ XP V_3] V_2] V_1]
b. ... [$_{VP}$ XP [[V_3 V_2]$_{V°}$ V_1]$_{V°\text{-cluster}}$] e.g. Frisian, German
c. ... [$_{VP}$ XP [V_1 [V_2 V_3]$_{V°}$]$_{V°\text{-cluster}}$] e.g. Dutch
c. ... [$_{VP}$ V_1 [$_{VP}$ V_2 [$_{VP}$ V_3 XP]]] e.g. English

In sum, the set of contrasting grammatical properties between OV and VO can be reduced to a single major factor, namely the directionality of the head within a universally right-branching phrasal architecture.

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