



1

A comparative survey: German – V2 and partially OV

1.1 The V2 property of Germanic languages

A common feature of all Germanic languages,¹ except English, is the so-called *V2 property*: the *finite* verb is the *second* constituent (whence ‘V2’), following an *arbitrary, single, clause-initial constituent*. Pattern (1) is the general V2 pattern. Unless XP is a wh-phrase, the instantiations of (1) yield a declarative clause. If XP is a wh-phrase, the clause is interrogative.

(1) [XP_(i) [V_{fin} [... (e_i) ...]]]

The XP constituent in the V2 structure (1) of a declarative may be any phrase that is available for fronting into the XP position in the given language (see 2). As an alternative to fronting a constituent, the XP slot in (1) may be filled with an expletive (see 3). Just for this reason, the subscript ‘i’ on the XP and the trace ‘e_i’ are in brackets in the structure (1).

- (2) a. [*Eine Maus*_i [hat [heute e_i den Käse verschmäht]]]
[a mouse [has [today the cheese disdained]]]
b. [*Den Käse*_i [hat [heute eine Maus e_i verschmäht]]]
c. [*Heute*_i [hat [e_i eine Maus den Käse verschmäht]]]
d. [*Verschmäht*_i [hat [heute eine Maus den Käse e_i]]]
e. [[*Den Käse verschmäht*]_i [hat [heute eine Maus e_i]]]

¹ Present-day Germanic standardized languages: Afrikaans, Danish, Dutch, English, Faroese, Frisian, German, Icelandic, Norwegian, Swedish. English, a language of Germanic origin, is exceptional. It does not share the typical Germanic clause structure property, viz. V2. Note that this list of languages names just the ‘official’ languages. There are numerous so-called Germanic dialects, each of which is a language in itself.

2 A comparative survey: German – V2 and partially OV

- (3) [Es [hat [heute jede Maus den Käse verschmäht]]]²
 [it [has [today every mouse the cheese disdained]]]

In (2d), a single non-finite verb is the first constituent. It represents a verbal projection, though. In (2e), the fronted constituent is a verb phrase. The XP slot is a slot for phrasal constituents; the V_{fin} slot, however, is open only for *atomic* finite verbal elements.

Clauses with a particle verb provide a minimal pair context for illustrating this difference. In German, the particle + verb combination³ is split when the *finite* verb is placed into the fronted position. In this case, the particle is obligatorily stranded. In (4a), the finite verb strands the particle in the clause-final verb position as a consequence of fronting the *atomic* verbal element. The particle must be stranded (see 4c), because only an *atomic* verbal element is accepted in the fronted position of the finite verb. In (4b), an infinitival particle verb is ‘topicalized’, that is, fronted to the XP position. In this case, the particle must not be stranded (4d). The atomic verb is obviously not qualified for the XP as this is a position for a *phrasal* category. The XP slot is a phrasal one. Particle stranding is the result of splitting off the atomic verbal partner of the particle verb combination.

- (4) a. [Er [*stand*_i [nicht *auf-e*]]]
 he stood not up
 b. [*Aufstehen*_j [würde_i [er nicht e_j e_i]]]
 up-stand would he not
 c. * Er *auf*stand nicht
 d. * Stehen würde er nicht *auf*

The only context in which the initial XP in (1) may be preceded by another constituent is that of *left dislocation* (5a). The left-dislocated phrase precedes the XP position, is pre-adjoined to the clause, and is obligatorily associated with a resumptive element (R) that agrees with the left-dislocated constituent. The resumptive is a demonstrative pronoun. The resumptive appears in the spec position (5a,c)

² Note that German does not show a definiteness effect in this construction. Compare this with English:

- (i) There is a /*the /*every mouse in the kitchen

A definiteness effect is operative only in topicalized VPs that contain the subject, as noted by Kratzer (1984).

- (ii) [Ein /*der /*dieser /*jeder Generativist unterrichtet]_{VP} hat hier noch nie
 [a / the / this / every generativist taught] has here not ever

³ Note that in OV languages, the particle of particle verbs precedes the verb; in VO languages it follows.

unless this position is unavailable (5b). In this case, the resumptive occurs in its clause-internal (base) position (5d,e). In (5d), the *wh*-word occupies the spec C position, and in (5e), the position is unavailable, since yes-no questions require a structure with a phonetically empty spec C.

- (5) a. $[_{FP} XP^i [_{FP} R_i^j [_{V_{fin}} [\dots e_i \dots]]]]^4$
 b. $[_{FP} XP^i [_{FP} YP_{wh} [_{V_{fin}} [\dots R^j \dots]]]]^5$?
 c. (Den Käseⁱ), *denⁱ* hat die Maus gefressen
 (the-ACC cheese) that-ACC has the mouse eaten
 d. (Den Käseⁱ), *wann* hat die Maus *denⁱ* gefressen?
 (the-ACC cheese) when has the mouse that-ACC eaten
 e. (Den Käseⁱ), hat die Maus *denⁱ* gefressen?
 (the-ACC cheese) has the mouse that-ACC eaten

The contrast between English and German illustrated in (6) is one between a V2 clause and a clause without the V2 property (6a). The grammatical V2 variants for (6b) are given in (7).

- (6) a. Today, the mouse has disdained the cheese
 b. * Heute, die Maus hat den Käse verschmäht
 today the mouse has the cheese disdained

(6b) is ungrammatical. The two elements preceding the finite verb, namely *heute* and *die Maus* do not form a constituent. Hence only one of them yields a well-formed option for the XP position. What (6b) shows is that fronting an additional phrase to a position either preceding or immediately following the XP is not permitted in German.

The regular V2 variant with *heute* in the XP position is given under (7a). (7b) is the left-dislocation construction, with the resumptive *da* in the XP position.

- (7) a. Heute hat die Maus den Käse verschmäht
 today has the mouse the cheese disdained
 b. Heuteⁱ, daⁱ hat die Maus den Käse verschmäht
 today there has the mouse the cheese disdained

You may try on your own to estimate whether the V2 variant could be derived as a reduced left-dislocation (LD) variant (as was once suggested in the literature). Compare the examples in (8), and you will see easily how (un)successful this account would be.

⁴ Note the convention on sub- and superscripting applied in this book: a *subscripted index* is used for co-indexing a moved constituent with its trace(s); a *superscripted index* is used for co-indexing in binding or agreement relations.

- 4 A comparative survey: German – V2 and partially OV
- (8)
- a. Den Käse, (den) hat die Maus verschmäht
the-ACC cheese (that-ACC) has the mouse disdained
 - b. *Käse* (*den) hat die Maus fast *keinen* verschmäht
cheese (that-ACC) has the mouse almost none-ACC disdained
 - c. [*Käse* verschmäht] (*das) hat die Maus *nur meinen*
cheese disdained (that-ACC) has the mouse only my-one-ACC
 - d. Den Käse, (*den) hat die Maus verschmäht, mit dem ich sie lockte
the-ACC cheese (that-ACC) has the mouse disdained with which I her baited
 - e. Nichts (*das) hat die Maus verschmäht
nothing (that-ACC) has the mouse disdained
 - f. Jeder, *(der den Witz nicht kannte), *der* hat gelacht
everybody (who the joke not knew) this-one has laughed

First, split-NP constructions as in (8b,c) are ungrammatical for LD constructions. Interestingly, the split-NP construction is compatible with VP topicalization (8c). This is a hard nut for those who would like to analyse NP splitting in terms of movement plus stranding. Second, relative clause extraposition is incompatible with LD (8d). Third, quantifiers are no target for LD (8e), unless they are restricted (8f). For more data coverage see Haider (1990).

The V2 pattern alternates with the embedded C°-introduced clause pattern for the complements of a class of verbs and nouns. Keep in mind, however, that V2 is never allowed within C°-introduced clauses in German (9c,f) or Dutch, contrasting with Scandinavian languages, as in (10).

- (9)
- a. wenn du glaubst, [*dass* er sich geirrt *habe*]
if you believe [that he REFL erred has]
 - b. wenn du glaubst, [*er habe* sich geirrt]
if you believe [he has REFL erred]
 - c. * wenn du glaubst, [*dass* er *habe* sich geirrt]
 - d. die Annahme, [*dass* er sich geirrt *habe*]
the assumption [that he REFL erred has]
 - e. die Annahme, [*er habe* sich geirrt]
the assumption [he has REFL erred]
 - f. * die Annahme [*dass* er *habe* sich geirrt]

Note that the class of verbs that allows a V2 complement in German in place of a *dass*-CP is virtually identical with the verb class that allows the dropping of *that* for complements in English. For complements of N, however, English forbids dropping the complementizer in the complement clause in general, while German

allows the V2 variant (9e). The reason for this difference is unknown. After all, the NP is head initial in both languages.

CP-internal V2, however, is compatible with the Germanic V2 property (see Vikner 1995), as exemplified in the Scandinavian languages (10b, Danish). CP-internal V2 is strictly ruled out in German and Dutch. In English, you can observe CP-internal V2, but only with the type of topicalization that triggers auxiliary inversion. Note that in this case, *that* must not drop in English (10a).

- (10)
- a. He said *(that) [never before] *has* he read such a good article
 - b. Han sagde *(at) [aldrig før] *havde* han læst sådan en god artikel
Danish
he said (that) [never before] had he read such a good article
 - c. Er sagte, (*dass) [nie zuvor] *habe* er so einen guten Artikel gelesen
German
he said (that) [never before] had he such a good article read

The class of verbs that allows the CP-internal V2 variant in place of the standard CP variant in Danish (and other Scandinavian languages) is identical with the class that allows the V2 variant in place of the CP variant in German.⁵

1.2 The linearization of heads and complements: lexically OV and functionally VO

In terms of the familiar Greenbergian OV vs VO categorization, German (like Afrikaans, Dutch and Frisian) is classified as OV. But neither German nor the other languages mentioned above are ‘strict’ OV languages. They are OV only in the *narrow* construal of OV. It is OV in the literal reading, insofar as this refers to the structure of the verb phrase: the *verb* as the head of the VP follows its nominal complements.

Strict OV languages are languages in which *any* phrasal head is a phrase-final one. Japanese, but not German, would qualify as a strict OV language. In strict VO languages, on the other hand, any head is head initial. English and the Scandinavian Germanic languages are strict VO languages.

In the Germanic OV languages, only V° and A° (plus a handful of exceptional postpositions) are head final; all other heads, lexical as well as functional ones (to be shown in chapter 2 on clause structure) are head initial.

⁵ Note the nice theoretical puzzle posed by this verb class restriction: what is it that enables a matrix verb to look deeply enough into the complement clause to allow/forbid V2 in the domain of the complements C°? In this case, the matrix verb has to be able to control a structure beyond the edge of the complement clause, inside the domain of the C° head. This is a challenge for present-day assumptions on category selection.

6 A comparative survey: German – V2 and partially OV

As for the VP, in a VO language like English and the North Germanic languages, the verb precedes its nominal complements (1a); in an OV language like German, the verb follows its nominal complements (1b).

- (1) a. [*ask* someone something]_{VP}
 b. [*jemanden etwas fragen*]_{VP}
 someone something ask

As for the other major lexical categories, phrases headed by A° are *head-final*, but the other phrases are *head-initial* in German.

- (2) head-*final* (V°, A°)
 a. [*jemandem etwas zeigen*_{V°}]_{VP}
 someone something show
 b. * [*zeigen jemandem etwas*]
 c. [*den Kindern / uns unangenehm*_{A°}]_{AP}
 (for) the children-DAT / us-DAT unpleasant
 d. * [*unangenehm uns / den Kindern*]

The two other major lexical categories (N°, P°) form head-*initial* phrases, namely NP (3a) and PP (3b–e), just as in English. Prepositions⁶ typically select noun phrases as complements (3b). There are only a small number of prepositions that may alternatively select a PP (see the preposition *bis* in 3c), or a clause (3d,e).

- (3) head-*initial* (N°, P°)
 a. [_{NP} *Nachrichten*_{N°} von mir an dich]
 messages from me to you
 b. [_{PP} *in*_{P°} [das Haus]]
 in the house
 c. [_{PP} *bis*_{P°} [_{PP} *in*_{P°} [das Haus]]]
 till (= up-to) into the house
 d. [_{PP} *ohne*_{P°} [dass sie es bemerkte]]
 without that she it noticed
 ‘without her noticing it’
 e. [_{PP} *ohne*_{P°} [es bemerkt zu haben]]
 without it noticed to have
 ‘without having noticed it’

⁶ There is a very small number of prepositions that alternatively may be used as postpositions, that is, as relation particles that *follow* their complements: *entlang* – along, *wegen* – because of, *zufolge* – according to, *gegenüber* – as against. Only *zufolge* is exclusively postpositional. The others may be used as post- or as prepositions.

1.3 German in comparison with other Germanic languages

The Germanic languages provide a well-structured space of parameter settings of grammars within a single language family. Table 1.1 lists some easily identifiable parametric differences for a sample of Germanic family members, namely, the so-called Germanic standard languages. Other Germanic languages are usually referred to as ‘dialects’, but this is a sociolinguistic rather than a grammar-based distinction. There is no grammar-theoretic basis for this distinction.⁷ A complete list would require entries for isolated varieties of German, for instance ‘Pennsylvania Dutch’ or the linguistic islands in Northern Italy (e.g. the ‘Dodici commune’ = the twelve communities). But there are many more German

Table 1.1 *Some conspicuous (morpho-)syntactic differences among Germanic languages*

Germanic languages	V2 declaratives	OV [-OV] = [+VO]	morphological case paradigm for NP	subject–verb agreement paradigm
English	–	–	–	–/+
Afrikaans	+	+	–	–
Dutch	+	+	–	+
Frisian	+	+	–	+
German	+	+	+	+
Faroese	+	–	+	+
Icelandic	+	–	+	+
Danish	+	–	–	–
Norwegian	+	–	–	–
Swedish	+	–	–	–
Yiddish ⁸	+	+ (flexible)	+	+

⁷ The grammar-based differences between Norwegian and Swedish, for instance, are minimal compared to the differences between standard German and a Swiss German ‘dialect’. The former varieties are acknowledged as different languages, the latter are filed as dialects. Similarly, standard Dutch and standard German are taken to be different ‘languages’, but ‘Plattddeutsch’ (literally: ‘flat German’; varieties spoken in North-West Germany) is called a dialect of German although it is much closer to Dutch than to standard German in its grammar.

⁸ Yiddish has conserved a property that all Germanic languages had in their historical ancestors’ grammars: they were neither strictly OV nor strictly VO. The position of the verb was ‘flexible’, not rigid, as in all modern Germanic languages. ‘Flexible’ means that the verb could be placed in the head-final position, or, alternatively, in intermediate positions, or, in the head-initial position. The underspecification of the directionality feature produces this flexibility (see Haider 2005b) that allows OV and VO patterns, plus VP-internal positions. For a detailed discussion of the OV/VO property of Yiddish see Vikner (2001).

speaking minorities, for instance in Eastern Europe, some of which still use a present-day version of the variety of German their ancestors spoke when they emigrated to the East in the eighteenth century (e.g. the Alemannian variety of the Donauschwaben = Danubian Swabians; in Romania, Hungary and Serbia). So, the table should just be taken as a representative sample of Germanic languages. All Germanic languages, except for English, share the V2 property.⁹ Outside the Germanic family, this property is presently confirmed only for Kashmiri (Wali and Koul 1997; Bhatt 1999).

A conspicuous but still not fully understood feature of the Germanic language family is its diachronic ‘dialect split’ into a VO group (North Germanic) and an OV group (West Germanic: Afrikaans,¹⁰ Dutch, Frisian, German). Contrary to popular wisdom, it clearly does not correlate with the ‘decay’ of the morphological paradigms for the nominal and verbal inflections. In both groups there are on the one hand languages with rich morphological inventories for case marking and verbal inflection for agreement, tense and mood, and on the other hand languages without or with just minimal and deficient inventories.

In the OV group, Afrikaans is the extreme case of lack of morphology (no case morphology, no verbal inflection for agreement), in contrast to German with a rich morphological case paradigm (notably for articles and pronouns).

In the VO group, the continental Scandinavian languages are morphologically poor, without any subject–verb agreement on the finite verb, whereas the insular Scandinavian languages (Icelandic, Faroese) are morphologically rich. Nevertheless, the OV vs VO characteristics are robust and persistent. What this tells us is that morphological change cannot have been a trigger for the syntactic changes that lead to the OV/VO distinction. In chapter 2, the dialect split that led to the OV/VO is argued to be a split in the development from a language with a *flexible* directionality (all Old Germanic varieties and present-day Yiddish) to languages with *rigid* directionality. The switch from ‘flexible’ to ‘rigid’ opened exactly two possible, alternative implementations for ‘rigid’, namely head-final or head-initial order. The choice of the parametric value apparently was a matter of chance. One dialect (group) ended up with the value ‘head initial’. This is the VO group. The other group is one that developed from a mother dialect with the directionality ‘head final’ for the V-projections. As for nouns, particles and (lexical) functional heads (complementizers, articles), all Germanic languages share the head-initial value.¹¹

⁹ English employs the V2 pattern only for *wh*-clauses and a special type of clause with fronted negative quantifiers: ‘With no job *would* he be happy.’ Contrast this with the English declarative pattern: ‘With no job, he would be happy.’

¹⁰ Language of Dutch origin, spoken in South Africa.

¹¹ As an alternative to the article, Scandinavian languages employ a definiteness marker as suffix of the noun. The alternation between article and definiteness marker is not free, though.

As for English, it is *the* exceptional language, not only within the Germanic language family. It is V2, but only for main clause wh-constructions (and topicalized negative operators). It requires V-to-'I' for the finite verb, but it allows this only for auxiliaries. So, it needs to employ an expletive auxiliary ('do-support') to compensate for the immobility of a finite main verb. It does not allow passivizing an intransitive verb because of the lack of a suitable subject expletive. It has a set of quasi-auxiliaries (modals) that cannot partake in infinitival constructions because they lack the finite vs infinitive distinction. It does not provide an infinitive morphology for the verb but uses the stem only. It has person + number agreement, but only in a highly deficient paradigm (only third person singular, in present tense, except for auxiliaries). Nevertheless, English still serves as *the* model language for grammar theory. This is not detrimental as long as the exceptional qualities of English are recognized and not mistaken as a model of a universal grammar.

1.4 The OV properties of German in contrast to VO properties of English

What do we know, if we know that a language is VO, or if we know it is OV, without knowing details about this language? In other words, what are reliable correlations between the OV vs VO organization of a clause and its grammatical properties? Present-day theorizing focuses primarily on a universal model of clause structure and emphasizes the *shared* properties. The ubiquitous differences between languages are disruptive rather than constitutive elements in this universal grammar account.

In the author's view, languages do not necessarily share a universal clause structure. What they share is a universal set of principles and processes that determine the organization of the grammar of a human language. Because of parameterization, two grammars might be minimally different, differing maybe only in a single parameter value. But if this parameterized principle interacts with enough other principles of grammar and triggers a cascade of effects, the two languages these two grammars account for may appear to be strongly different, depending on the parameter value. Here, we shall briefly analyse the grammatical properties that seem to correlate directly with a single parameter setting, namely the headedness value (head initial, head final), construed as a *directionality* factor of licensing a phrase by a phrasal head. Two premises, you are asked to grant. The rest will follow.

- The *first premise* (P1): positions in the projection of a phrasal head need to be licensed under the *canonical directionality* of the head. Canonical

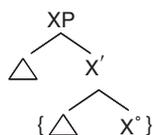
10 A comparative survey: German – V2 and partially OV

directionality is the basic parametric factor that produces head-final or head-initial structures, respectively.¹²

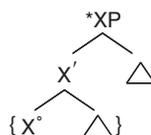
- The *second premise* (P2): the structural build-up (‘merger’) of phrases is *asymmetric*. It is universally *right branching*:

If a phrase α is merged¹³ to a phrase β , the resulting structure is $[\beta^n \alpha \beta]$. Hence, merger produces *right-branching structures only*. Left-branching merger structures $*[\beta^n \beta \alpha]$ are universally ruled out.¹⁴ This generalization on phrase structuring was originally suggested in Haider (1992/2000).

a. **right-branching**



b. **left-branching (ruled out)**



The curled brackets in the bottom line of the structures above are to signify that the branching restriction is independent of the order of head and complement, that is, head-final or head-initial order, or, as will be discussed later, in phrases with adjustable head positioning.

In combination, the premises P1 and P2 produce a set of corollaries that are characteristic of OV vs VO properties of clause structure. In the next subsection, the respective data are presented. Their relation to the premises above will be derived and discussed in the subsequent subsection.

1.4.1 The OV ‘fingerprints’ of German

The observations listed below are taken to be immediate effects of head-final vs head-initial phrase structure in combination with premise P2. Remember that the German NP is head initial. This provides a handy testing ground for some of the properties under discussion below, since it is easy to derive a deverbal noun: the infinitive can be used as a noun. So, we can inspect the head-initial vs head-final effects in a minimal pair setting within a single language, once we contrast a clause with the deverbal infinitival noun phrase. The following eight observations will be first described and then derived in section 1.4.2.

¹² The idea that directionality is a relevant parametric factor is not a new one. It has been under discussion since the advent of the Principles & Parameter model, for instance in the early work of Hilda Koopman.

¹³ ‘merge α with β ’ =_{def.} combine α with β into a phrase structure $[\gamma \alpha \beta]$, where γ is a projection of either α or β .

¹⁴ This premise applies to merger. It remains silent on the question as to whether there could be a transformational source of left-branching structures, as for instance, adjunction by movement to the right.

- Observation 1 Head-initial phrases are *compact*, head-final ones are not.
- Observation 2 Head-initial phrases are *strictly serialized*, head-final ones allow word order *variation* (scrambling).
- Observation 3 The *relative order* of the dependent phrases (i.e. arguments or selected adverbials) is *identical* in head-initial and in head-final phrases.
- Observation 4 Particle placement with particle verbs:
 - 4a The *particle* of particle verbs *precedes* the verb in the clause-internal position in OV, but it *follows* in VO.
 - 4b In VO, the *particle* of a particle verb may *intervene* between the objects of a double object construction, if the given language allows particle stranding. In OV, the particle is always in the clause-final, *V°-adjacent* position.
- Observation 5 In an OV clause structure, *verbs cluster* with clause union effects. In VO, verbs do not cluster.
- Observation 6 In a VO clause structure, the *subject position* must be lexicalized. In the absence of a subject argument, an expletive subject is mandatory (modulo¹⁵ pro-drop or topic-drop). In OV, structural subject expletives¹⁶ are not mandatory and do not occur, independently of pro-drop.
- Observation 7 A language with a VO clause structure and non-positional nominative checking may allow *quirky subjects*. In OV, quirky subject constructions cannot arise.
- Observation 8 *Subject–object asymmetries* widely attested in VO are absent in OV:
 - (i) no asymmetry for extraction out of subjects vs objects in OV,
 - (ii) no structure-triggered asymmetry for wh-in-situ in OV.

¹⁵ Pro-drop is a parametric property for unstressed *subject* pronouns. In cliticizing languages, the subject clitic is not lexically represented in the clause since the target of cliticization, the finite verb, already specifies the person–number matrix represented by the subject clitic. In topic-drop languages, a pronominal *topic* is not lexically represented in the clause. Topic-drop is not restricted to subjects, but applies to objects as well.

¹⁶ Structural expletives are elements that lexicalize the obligatory structural subject position in the absence of a subject argument. This function of an expletive must not be confused with the expletive argument function, that is, the function of a quasi argument. German has quasi-argument subjects, but not structurally expletive subjects. See the discussion of observation 6 below.

German and English differ in these respects. But this is not a peculiarity of German or English. In fact, the properties listed above are (just a subset of systematic) differences between an OV and a VO organization of clause structure. They all follow from a single structural difference in the organization of clause structure, namely the head position of V° in the VP.

Observation 1 – compactness

Compactness refers to a well-known property of head-*initial* phrases. They provide no room for adjuncts in between the head and the nominal arguments of the head (1a,b). This property is absent in head-final phrases (1c,d).

- (1)
- a. They will [investigate_{V^o} (**thoroughly*) this phenomenon /something]
 - b. They have [told their students (**enthusiastically*) boring stories]
 - c. Sie werden dieses Phänomen / (et)was (*gründlich*) untersuchen
they will this phenomenon / something (thoroughly) investigate
 - d. Sie haben ihren Studenten (*begeistert*) langweilige Geschichten erzählt
they have their students (enthusiastically) boring stories told

Compactness is a robust property of English VPs. Adverbials must not intervene between the verb and its nominal complement (1a) or between the nominal objects in a double object construction (1b). In German, this restriction does not apply. You might immediately feel tempted to heckle ‘Scrambling!’. But note, there are noun phrases that precede the adverbial in (1b) that do not partake in scrambling as for instance the indefinite pronoun *was* (something) or the indefinite noun *etwas* (something) in (1c). Second, German does obey the compactness restriction, but only in head-*initial* phrases, namely NPs, as expected.

The noun phrases in (2) are the nominal counterparts of the verbal heads in (1). German noun phrases are head initial and they are as compact as English VPs or NPs, with difference in the selectable complements.

In German, the direct object of the verb corresponds to the genitive complement of the noun. In many cases, the genitive DP may be replaced by a PP headed by *von* (of), as in (2d–f). In English this is the only option. This is a fairly direct correspondence to the English nominal complementation. Compactness shows in (2c). (2d, e) are not fully parallel to (1d) because the dative of the double object construction (1d) cannot be transferred into the NP since NPs allow only complements with structural case and this case is spelled out as genitive. Lexical case – in German, dative is a lexical case – cannot be converted and so dative arguments cannot be integrated. In (2d–f), the dative argument is replaced by a goal PP. As a PP it may be extraposed. This is the reason why (2e) is acceptable and why the compactness of double object constructions cannot be tested with NP complements. NPs do not allow double object complements. Note, however, that the object PP *von Geschichten* in (2d–f) is subject to compactness, too, just like the

genitive DP. The intervening adverbial *im Syntaxunterricht* makes the order ungrammatical.

- (2)
- a. [_{VP} das Problem gründlich untersuchen_{VP}]
the problem thoroughly investigate
 - b. das [Untersuchen des Problems *mit geeigneten Mitteln*]
the [investigat(ing) (of) the problem-GEN with suitable means]
 - c. * das [Untersuchen *mit geeigneten Mitteln* des Problems]
the [investigat(ing) with suitable means (of) the problem-GEN]
 - d. das Erzählen [von Geschichten] an Studenten *im Syntaxunterricht*
the telling [of stories] to students in-the syntax-class
 - e. das Erzählen [von Geschichten] *im Syntaxunterricht* an Studenten
the telling [of stories] in-the syntax-class to students
 - f. * das Erzählen *im Syntaxunterricht* [von Geschichten] an Studenten
the telling in-the syntax-class [of stories] to students

In sum, head-initial projections are compact. In English, this applies to VPs as well as NPs, since English is uniformly head initial. In German, NPs are compact, VPs are not. This correlates with the fact that the NP is head initial while the VP is head final.

Observation 2 – strict word order in head-initial phrases, variable word order in head-final phrases.

Note that this property is a subinstance of observation 1. If variable word order is a consequence of scrambling, the scrambled item should be regarded as an intervener (3b,d) just as an adverbial is an intervener (3c).

- (3)
- a. He [showed some students this problem]
 - b. * He [showed *this problem*_i some students e_i]
 - c. * He [showed *enthusiastically* some students this problem]
 - d. * He [showed to some students_i this problem e_i]

The scrambling structure (3b) is ruled out by whatever principle enforces compactness and the very same constraint rules out (3c). The deviance of (3b) is of a general nature and is not limited to DP objects. PP objects do not scramble either (3d).

In German, compactness obviously does not hold for the VP since adverbials may intervene (4a), and consequently scrambling is allowed, just as in (4c) and (5d). In NPs, scrambling is ruled out, as expected (5b).

- (4)
- a. Er hat dieses Problem einigen Studenten *begeistert* erklärt *German*
he has this problem some students enthusiastically explained

- 14 A comparative survey: German – V2 and partially OV
- b. Er hat einigen Studenten dieses Problem erklärt
he has some students this problem explained
- c. Er hat *dieses Problem_i* einigen Studenten e_i erklärt
he has this problem some students explained
- (5) a. das [_{NP} Verteilen_{N°} von / der Decken an Obdachlose] *German*
the distribut(ing) of / the-GEN blankets to homeless
- b. * das [_{NP} Verteilen_{N°} an Obdachlose_i von / der Decken e_i]
the distributing to homeless of / the blankets
- c. Man hat [_{VP} Decken an Obdachlose verteilt]
one has blankets to homeless distributed
- d. Man hat [_{VP} an Obdachlose_i Decken e_i verteilt]
one has to homeless blankets distributed
- e. * Toen hebben de autoriteiten *het kind_i* de moeder e_i teruggegeven *Dutch*
then have the authorities the child the mother back-given
- f. Toen hebben de autoriteiten het kind *aan de moeder* teruggegeven
then have the authorities the child to the mother back-given
- g. Toen hebben de autoriteiten *aan de moeder_i* het kind e_i teruggegeven
then have the authorities to the mother the child back-given

The order in (5b) is ruled out since there is no way to derive it. Scrambling does not apply, nor does PP extraposition apply to the object PP *von Decken*. Note that the compactness restriction is stricter than the distinctness requirement that forbids scrambling of objects in Dutch. Dutch DPs are not distinguishable in terms of case since Dutch does not provide morphological case marking. This seems to be responsible for the restriction against scrambling DPs (5e). But, crucially, scrambling is allowed for PP objects in Dutch (5g) (Geerts *et al.* 1984: 989f.).

Neither in English VPs nor in German NPs, is a PP object allowed to scramble. What this shows is that compactness is a genuine property of head-initial structures and that scrambling is dependent on the head-final organization of the scrambling domain.

Observation 3 – *The relative order* of arguments in OV and VO is identical, and the *relative embedding* is identical, too (see quantifier-variable binding data in examples (7) in this section).

In Haider (1992/2000) a fact has been highlighted that had gone unremarked until then: the relative order of arguments in head-final and head-initial VPs is identical. This is clear counterevidence for head-initial/head-final as a symmetric property. The symmetry hypothesis would predict that in head-initial phrases merger

applies to the right, producing left-branching phrases (6a), while in head-final structures, merger applies to the left, producing right-branching structures (6b). If this symmetric organization modulo head position existed, the order of arguments in a head-final phrase would have to be linearized as the mirror image of the order in a head-initial phrase. However, (6a) does not exist in natural languages.

- (6) a. [[[h° A₁] A₂] A₃] head-*initial* phrase with three arguments merged to the right
 b. [A₃ [A₂ [A₁ h°]]] head-*final* phrase with three arguments merged to the left

Here are some examples of the uniform relative order in OV and in VO. The uniform relative order for a four-place verb like *send* is <subject – indirect object – direct object – directional PP>, corresponding to the semantic ranking of <agent – recipient – theme – goal>. German and Dutch represent the OV pattern; English and Danish are representative for VO. The obvious question is why left-branching VO structures (= merger to the right) are ruled out.

- (7) a. dass sie *jedem*ⁱ ein *Paket an seine*ⁱ *Privatadresse* schicken werden
 that they everybody a parcel to his private address send will
 b. omdat ze *iedereen*ⁱ een *pakje naar zijn*ⁱ *privaatadres* zullen opsturen
Dutch
 that they everybody a parcel to his private address will send
 c. that they will send *everybody*ⁱ a parcel to *his*ⁱ home address
 d. at de forklarede *hver deltager*ⁱ *problemet på hans*ⁱ *eget sprog*
Danish
 that they explained every participant problem-DEF in his own language

The fact that the relative order of arguments is identical in (7) follows immediately from the assumption that, both in OV and VO, the ranking of the arguments in the lexical argument structure is identical. This ranking determines the order of merger and since both in OV and VO the resulting structure is right-branching, the relative order of the arguments is necessarily identical.

Observation 4a – The position of verb particles relative to the verb in OV and VO: preverbal particle in OV, postverbal particle in VO (see Vikner 2001).

Germanic languages abound in ‘particle + verb’ combinations. The structure of the particle plus verb unit seems to be a head-to-head adjunction structure (see Wunderlich 1983; Stiebels and Wunderlich 1994). In all Germanic V2 languages, a particle is stranded when the particle verb is the finite verb fronted to the V2 position. Additionally, in some Germanic OV languages, a particle may be stranded in a VP-internal position (see chapter 7.2 and 7.5.3, for stranding in the verbal cluster).

- (8)
- a. Er wickelt es *ein*
he wraps it in
 - b. *Einwickeln* wird er es nicht
in-wrap will he it not
 - c. * Er *einwickelt* es
he in-wraps it
 - d. * *Wickeln* wird er es nicht *ein*
wrap will he it not in
 - e. dass er es *einwickelt*
that he it in-wraps
 - f. * dass er es *ein* gut wickelt
that he it *in* well wraps

The particle is obligatorily stranded, when the finite verb is fronted (8a,c). The particle obligatorily precedes, and is adjacent to the verb in the non-fronted position (8e,f). Topicalization of the verb must not strand the particle (8b,d), however.

The particle position follows immediately from the canonical licensing direction. The particle is selected by the verbal head. Hence it is merged to the left. In VO, the verb obligatorily moves to the left within the shell structure (see below), hence the particle ends up postverbally. In VO it is preverbal, unless the verb is moved to the left (as in V2).

Observation 4b – Particle stranding in between two objects in VO.

Germanic VO languages provide evidence for yet another source of stranding. In English, but also in Norwegian (and other Scandinavian varieties), particles may be serialized in several variants (Haider 1997d). One variant is the V-adjacent variant. In this variant, and in all other variants (including the stranding variant by V2) the particle follows. This is a robust difference between OV and VO. In OV, the particle precedes and is adjacent to the verb (except the stranding variant by V2). The second robust difference is the fact that there are VO languages with non-adjacent particle positions in the VP (9), but that there is no OV language with a particle position that is not adjacent (8f) to the base position of the verb.

- (9)
- a. The secretary sent the stockholders *out* a notice (Jacobson 1987: 32)
 - b. Valerie packed her daughter *up* a lunch (Dehé 2002: 3)
 - c. Susan poured the man *out* a drink

The intermediate particle position in (9) is a stranding position, that is, the position is a position of the verbal head whose surface position is higher up. It is immediate evidence for the shell structure of a head-initial VP.

A satisfactory account must cover the following generalizations: first, the cross-linguistic generalizations that particles precede in OV but follow in VO, and that only in VO may particles intervene between objects (9). Second, unlike adverbials, particles do not violate the compactness requirement of head-initial phrases. Unlike adverbials, they intervene between objects (9). However, they are themselves apparently not subject to compactness in the sense that no adjunct may intervene between an object and the particle that follows.¹⁷ Third, in double object constructions, a particle must not be clause final although it may be clause final in a simple transitive construction.

Observation 5 – In an OV clause structure, auxiliaries and semi-auxiliaries *cluster obligatorily*. In German, even verbs that select sentential infinitival complements may optionally cluster, with clause union effects.

In VO, each verb heads a VP, so there are as many VPs as there are verbs, and each VP is a possible site for adverbial modification, as illustrated in (10a). For OV, the situation is radically different. Any non-verbal item in ‘*’ positions in (10) is ungrammatical. First, the sequence of verbs in (10b) is a *compact* unit, indicated by ‘*’. Second, even if we do not expect the kind of adverbials we see in (10a) in these positions, since they avoid post-VP positions, there are post-VP elements that should be able to appear in these positions. But, they are strictly excluded.

- (10) a. The new law [*certainly* [may [*possibly* [have [*indeed* [been [*badly* formulated]]]]]]]]]
 (Quirk *et al.* 1985: § 8.20, 495)
- b. dass das neue Gesetz *wohl wirklich schlecht* formuliert (*) worden (*) sein (*) mag
 that the new law *possibly indeed badly* formulated been have may
 ‘that presumably the new law indeed may have been badly formulated’

Extraposition targets the right edge of the VP, as can be easily verified if there is a VP in a topicalized position, as in (11a). As noted in Haider (1990), topicalized VPs may have a structure that is incompatible with their alleged base position. If the topicalized VP in (11a) or (11d) is put back into its alleged site of extraction,

¹⁷ An example like ‘*He poured the whisky *slowly* out’ (Dehé 2002: 38) is misleading, however. As shown in (i), *out* can function like a PP pro-form, since it may be modified by *right*. The example in (ii) supports the correlation: if what looks like a particle can be modified, it is not treated as particle but as a PP pro-form. If, on the other hand, it cannot be modified, it must be a particle and then a compactness effect shows in (ii).

- (i) I poured it right out.
 (ii) The strike was called (*right/*finally) off

the resulting structures (11b) and (11e), respectively, are ungrammatical.¹⁸ The only grammatical extraposition variant is (11c).

- (11) a. [Gesprochen [_{pp} mit ihr]], kann_i er nicht e_j haben e_i
 [spoken [with her]] can he not have
 b. * dass er nicht [gesprochen [mit ihr]] haben kann
 that he not [spoken [with her]] have can
 c. dass er nicht gesprochen haben kann [mit ihr]
 d. [Gesprochen haben mit ihr] kann er nicht
 [spoken have with her] can he not
 e. * dass er nicht gesprochen haben [mit ihr] kann
 that he not spoken have [with her] can

This is not only a problem for a naive movement account of VP topicalization, it is evidence that the structure of the right edge of the clause is not simply a counterpart of English VP stacking. Why should extraposition that stops at a lower VP be excluded, if there is a higher VP available as target? English clearly shows that stacked VPs are VPs with all the privileges of VPs. (11b) and (11e), however, seem to be ruled out because there is no lower VP. The reason is this: the verbs are parts of a cluster in a *single* VP.

Compactness is just one out of several indicators of a structural difference between a VO and an OV organization. The second property is the *variable verb order* in all Germanic OV languages in the sequence of clause-final verbs. There is no VO language with a similar variation in the order of auxiliaries and semi-auxiliaries. In other words, if these verbs may optionally serialize in different orders, the language is an OV language.

- (12) a. dass er mit ihr sprechen müssen *wird* *German*
 that he with her speak must will
 ‘that he will have to speak with her’
 b. dass er mit ihr sprechen *wird* müssen
 c. dass er mit ihr *wird* sprechen müssen
 d. dass er mit ihr *würde haben* sprechen müssen
 that he with her would have speak must
 ‘that he would have had to speak with her’

The principles that govern the distribution of the verbs in the verbal cluster will be discussed in chapter 7. Note that German and Dutch differ with respect to the

¹⁸ For a copy-theory of movement the problem is evident, too. The moved phrase is clearly not identical with the alleged copy.

variant patterns. In German, the order (13b,d) is not available. On the other hand, the order (12a) is ungrammatical in Dutch.

- (13) a. dat hij met haar gesproken *heeft* *Dutch*
 that he with her spoken has
 b. dat hij met haar *heeft* gesproken
 that he with her has spoken
 c. dat hij met haar gesproken *zou* hebben
 d. dat hij met haar *zou* hebben gesproken

One of the clause union properties was first noticed by Gunnar Bech (1955). He pointed out that the scope of negation is ambiguous if the infinitival complement is not extraposed ('coherent infinitive' in his terminology). An example is given in (14a). For non-extraposed infinitival complements (of a class) of control verbs – *versuchen* (try) is a member of this verb class – two alternative constructions are available. One construction is the familiar clausal complement (14d), the other construction is the verb cluster construction. This construction is monoclausal, that is, a clause union construction (14e). One of many differences between the biclausal and the monoclausal structure shows in the scope of sentence negation. Since the scope of sentence negation is clause bound, the scope in (14d) is the complement clause. In (14e), the scope is the simple clause. (14a) is ambiguous since it may be structured as (14d) or (14e), with the reading of (14c) or (14b), respectively. The extraposed infinitival clause (14b) is a variant of (14d), and hence the scope is unambiguously determined. Analogously, the scope of negation in (14c) is clearly identifiable as the matrix clause. (14f) illustrates that the cluster constituent is a syntactic unit and therefore it may be topicalized.

- (14) a. Sie hat ihn *nicht* zu beunruhigen versucht *ambiguous scope of negation*
 she has him not to alarm tried
 'She has not tried to alarm him'/'She has tried not to alarm him'
 b. Sie hat versucht, [_{clause} ihn *nicht* zu beunruhigen] *unambiguous scope*
 'She has tried not to alarm him'
 c. Sie hat *nicht* versucht, [_{clause} ihn zu beunruhigen] *unambiguous matrix scope*
 'She has not tried to alarm him'
 d. Sie hat [_{clause} ihn *nicht* zu beunruhigen] versucht
 e. Sie hat ihn *nicht* [_{cluster} zu beunruhigen versucht]
 f. [_{cluster} Zu beunruhigen versucht] hat sie ihn *nicht*

A particularly clear case of a clause union effect was first noticed by Höhle (1978). Passivizing the matrix verb may turn the object of the complement verb into the passive subject. Object-to-subject conversion in passive is clause bound in German. The nominative DP in (15a) is the very same DP that is the nominative DP of the clause-union variant (15c). The accusative (as alternative to the nominative) in (15a) is the standard accusative object of the embedded infinitival clause (15b). If the clustering variant is forced by topicalizing the cluster, nominative is the only option (15d).

- (15) a. Vergeblich wurde der / den Hund zu beruhigen versucht
 in-vain was the-NOM / the dog-ACC to calm-down tried
 ‘In vain, it was tried to calm down the dog’
- b. dass [_{clause} den Hund zu beruhigen] vergeblich versucht wurde
 that [the dog-ACC to calm down] in-vain tried was
- c. dass der Hund vergeblich [_{cluster} zu beruhigen versucht wurde]
 that the dog-NOM in-vain [to calm-down tried was]
- d. [_{cluster} Zu beruhigen versucht] wurde der-NOM /*den-ACC Hund
 vergeblich
 [to calm down tried] was the dog in vain

The optional choice of case in (15a) appears to be bizarre, at first glance, but it becomes fully understandable once you recognize the structural difference between a clausal infinitival complement and a clustering construction. In chapter 7, more evidence for the clause union nature will be presented. A comparison with transparency phenomena in VO infinitival complementation will show a crucial difference: compact verb clusters are an OV phenomenon.

Observation 6 – *Obligatory structural* subject position only in VO (EPP property), but not in OV. Generalization: OV languages do not require/allow structural subject expletives.

In SVO languages, as suggested already by the acronym S-V-O, the position of the subject is structurally unique. It is the only argument that precedes the verbal head, while all other arguments follow. In clause structure, the subject position is the spec of a functional head. The subject phrase is raised from its VP-internal base position into the obligatory surface position. The position is both an *obligatory structural position* and a position that is *obligatorily lexicalized*. In Generative terminology, this is referred to as the EPP property (EPP = extended projection principle =_{def.} clauses have (overt/covert) subjects) (Chomsky 1982: 9–10).

A good indicator of a syntactically mandatory position is the obligatoriness of an expletive. An expletive is semantically void. Its presence is owed to syntactic

requirements only. The Scandinavian languages are good models for this property. If an intransitive verb is used in the passive construction, the subject position is obligatorily lexicalized with an expletive.¹⁹

- (16) a. Ofte vart *det* telefonert
often was *it* telephoned Norwegian
- b. Ofte telefoneres *det*
often telephones-PASS *it*
- c. Oft wurde (**es*) telephoniert
often was (*it*) telephoned German
- d. *Es* wurde oft telephoniert

(16a,b) illustrate the two syntactic options for passive in Scandinavian languages. One option is the familiar one, namely the combination of a participle plus a *be*-type auxiliary. The other option is a passive affix (namely *-s*). This developed from a middle construction with a cliticized reflexive. In both cases (16a,b), the subject position is obligatorily lexicalized with the expletive. The subject expletive in Scandinavian languages is a cognate of either the English *there* or *it*.

German, however, does not allow a clause-internal expletive in intransitive passives (16c), although it employs an expletive for the clause-initial functional spec position in those instances of declaratives in which no phrase is fronted (16d). The clause-initial position is an obligatory functional spec position, so it provides room for an expletive. However, there is no room for an expletive in what would be the clause-internal structural subject position. There is no room because there is no position that needs to be lexically filled.

Another case for an expletive in the functional subject position is the *there*-construction (17a). Faroese is representative for a Scandinavian language in this respect, with an expletive corresponding to the *there* in (17a). In Faroese, the expletive is mandatory (17b). German, however, does not allow a subject expletive in this construction (17c).

- (17) a. Today, *there* has arrived a boy
- b. Í dag er **(það)* komin ein drongur
today is (there) arrived a boy Faroese
- c. Heute ist (**es*) ein Junge gekommen
today is (there) a boy arrived German

¹⁹ English, once more, is an exception. It does not allow a passive of an intransitive simply because English lacks a syntactically adequate expletive. *There* is always associated with a postverbal nominative.

As a critical reader you may be prepared to object. Could it be that (17c) contains an expletive subject after all, but only in a covert form? The answer is: highly unlikely.

First, German is just a well-behaved OV language in this respect. There is no strict OV language that requires subject expletives. Second, if there existed a covert variant of *es*, it should optionally show, as in other constructions (18). For instance, the ‘place holder’ for an extraposed clausal subject (18a) or object (18b) is principally optional. In passives and in the *there*-construction, an overt expletive is always ungrammatical in German.

- (18) a. Mich hat (es) nicht überrascht, dass das so ist
 me has (it) not wondered that this so is
 ‘It has not surprised me that this is so’
 b. Ich habe (es) geahnt, dass das so ist
 I have (it) sensed that this so is
 ‘I have sensed that this is so’

In Dutch, the behaviour of *er* is intriguing. In a clause without an argument, the *er* is optional if the verbs in the cluster are ordered in the ‘OV style’ (19a), that is, the dependent one preceding the governing one. However, it is obligatory if the cluster is serialized in the ‘VO style’, namely, with the governing verb preceding the dependent verb (19b), according to Richards and Biberauer (2005: 142), who credit Hans Bennis for this observation.

- (19) a. Ik weet, dat (er) gedanst *wordt* *Dutch*
 I know that (there) danced is
 b. Ik weet dat *(er)²⁰ *wordt* gedanst

Why is there not the slightest evidence for an expletive subject in German? And why is this a general property of OV languages? A satisfactory grammar model should provide a straightforward account (see chapter 2). An account in terms of a language-specific null-subject expletive is both ad hoc and too weak.

Observation 7 – VO languages, but not OV ones, with non-positional (i.e. relational) nominative checking allow for quirky subjects.

²⁰ *Er* becomes optional even in this context once there is an adverbial, e.g. a locative adverbial.

- (i) dat (er) in deze hoek werd gedanst
 that (there) in this corner was danced

Note that this is similar to the English locative-inversion construction (ii). But, in English, locative inversion is not licit for intransitive passive (iii).

- (ii) that on this spot (there) will stand a huge tower
 (iii) * that on this spot (there) must not be danced

In Icelandic, just as in German, a nominative argument may stay in a VP-internal position. Nominative checking is not a function of a unique structural position but a *relational* property, namely agreement. In Icelandic, in passive, or for unaccusative verbs, the nominative argument may stay in situ, and the higher-ranked oblique argument is raised to the functional subject position and thereby turned into a ‘quirky subject’. Note that this shows that there is a structural subject position, that it must be lexicalized, but that it is not exclusively reserved for the nominative. In the following example, the quirky subject is a dative.

- (20) a. að *hennilstelpunum* líkuðu hestarnir *Icelandic*
 that *her-DAT / girls-the-DAT* liked-3.PL horses-the-NOM
 ‘that she/the girls liked the horses’ (Sigurðsson 2004)
- b. dass *ihr/lden Mädchen* die Pferde gefielen *German*
 that *her-DAT / the-DAT girls* the horses pleased
 ‘that the horses pleased her / the girls’

How do we know that the preverbal dative in (20a) is a subject? A dative in the functional subject position displays clear subject properties. First, the word order indicates that the dative in (20a) is not in an object position but in the preverbal position reserved for the subject. Second, the dative partakes in many of the subject-specific grammatical alternations. For instance, a quirky subject of a finite clause is regularly turned into a PRO subject in the infinitival variant of the clause.²¹

- (21) Ég vonast til að [PRO líka hestarnir] *Icelandic*
 I hope for to [PRO-DAT please-INF horses-the-NOM]
 ‘I hope that the horses will please me’

For German in particular, and for OV language in general, quirky subject constructions have not been attested, for principled reasons (Zaenen *et al.* 1985; Haider 2005b), as will be discussed in section 1.4.2.

Observation 8 – Subject–object asymmetries (opacity for extraction out of phrases in the functional subject position or out of fronted phrases; wh-in-situ) in VO but not in OV.

The sentences in (22) illustrate the aforesaid contrasts between English and German. The source of the ungrammaticality in English is clearly a structural one: a phrase in a (preverbal) functional subject position is opaque for extraction.

²¹ Note that this is in conflict with the ‘pro-theorem’ that postulates that the subject of an infinitive cannot be lexicalized because of the lack of case. This restricts pro to potential nominative subject. The quirky subject in (20a) and (21) is not nominative. It is dative, in both constructions.

The German examples are grammatical, hence the structural source that rules out the English examples must be absent in German.

- (22) a. Mit wem_i hätte denn [e_i speisen zu dürfen] dich mehr gefreut?
with whom had PRT [dine to be-allowed] you-ACC more pleased
- b. * Whom_i would [to have dinner with e_i] please you more?
- c. Whom_i would it please you more [to have dinner with e_i]?

The contrast between (22a) and the ungrammatical English construction (22b) is sharp and detrimental for analyses that situate the infinitival subject clause in German in a pre-VP functional spec position. A clause in a functional spec position corresponding to the English subject position, or in a higher one, is opaque for extraction. The straightforward alternative is a subject-in-situ analysis. The infinitival clause in (22b) has not left its VP-internal position and extraction is unproblematic. The contrast between (22b) and (22c) is one between a clausal subject in a preverbal functional phrase and one in a VP-internal position, respectively.

Given that the subject position is a functional spec position, a phrase preceding this position is either in a functional spec position as well, or it is adjoined to a functional phrase. In each case, the result is ungrammatical, as English testifies (23b). German puts no restriction on extraction in the corresponding clauses (24).

- (23) a. He said that [eating eels] he dislikes
- b. * What_i did he say that [eating e_i] he dislikes?
- c. What_i did he say that he dislikes eating e_i?

In (24a), the extraction site is in a fronted (i.e. scrambled) object clause. In (24b), the object clause is clearly sandwiched by the fronted reflexive and the subject and it remains transparent for extraction.

- (24) a. Wen_i hat [damit e_i zu konfrontieren] keiner versucht?
whom has [it-with to confront] nobody tried
- b. Was_i hat sich [ihr e_i zu schenken] Fritz denn vorgenommen?
what has himself [her to present] Fritz PRT decided
'What did Fritz decide to present to her?'

Examples such as the above are robust evidence for a systematic difference between a VO and an OV structure. The 'subject condition' was studied in great detail for English from the 1980s to 1990s (key term: ECP). The source of the restriction is clear, even though it tends to be ignored in the present-day models of grammar: phrases in spec positions are domains that block extraction. In the following section, the source of the OV–VO contrast will be ascribed to a principled

difference of clause structure that directly relates to the directionality property of the verbal head.

Wh-in-situ patterns are another reliable source of VO–OV contrasts. For a detailed discussion see chapter 3. Here, it is sufficient to point to the contrast in (25) and to emphasize that this contrast is representative for VO and OV languages in general. The generalization that covers this data is this: in VO, wh-subjects are ungrammatical if dependent on a higher wh-element. This generalization calls for a principled explanation.

- (25)
- a. * Whom did *what* impress?
 - b. * It is unclear whom *what* impressed
 - c. * *Who* said that *what* impressed her?
 - d. Wen hat *was* beeindruckt?
whom has what impressed
 - e. Es ist unklar wen *was* beeindruckt hat
it is unclear whom what impressed has
 - f. *Wer* hat gesagt, dass mich *was* beeindruckt hat?
who has said that me what impressed has

If *what* in (25a–c) is in a functional spec position, and *was* (what) in (25d–f) is in a functional spec position as well, why are the German examples grammatical but not the English ones? The solution will be simple: their structural position is not identical, for principled reasons. The German subject stays in its VP-internal position, hence the absence of a structural subject–object asymmetry. The English subject moves to a functional spec position. The principled reason for this contrast will be discussed in the following section.

1.4.2 The structural source of the OV–VO contrasts

In the previous section, the following properties have been presented, together with a claim.

- compactness of head-initial phrases
- rigid serialization vs scrambling
- uniform relative order of arguments
- order and distribution of verbal particles
- verb clusters with verb order variation and clause union effects
- mandatory functional subject position; obligatory subject expletives in VO.
- quirky subjects only in VO but not in OV
- (missing) subject–object asymmetries (opacity of extraction domains)

The claim is this: these properties directly correlate with the OV vs VO organization of a clause. These properties follow from just two premises:

Premise 1: universal right-branching merger. In other words, merger operates in a directionally restricted manner. The merged phrase *precedes* rather than follows its host.

Premise 2: the merged phrase is licensed under the (parameterized) *canonical directionality* by the (projection of the) head.

Let us reflect briefly on the plausibility of the premises. The advantage of right-branching merger structures becomes evident once we take into consideration the fact that structures need to be processed (first, in the acquisition process, and second, in each and every instance of speaking/listening) and that processing is bidirectional, namely input-driven (reception) or output-driven (production). Moreover, production involves simultaneous self-reception (self-monitoring).

The *input* is a one-dimensional array, namely a sound chain that strongly corresponds to a chain of morphemes. The fact that we are able to represent speech in lines on a sheet of paper is a reflex of this one-dimensional organization. Grammar is an algorithm for mapping these one-dimensional arrays on hierarchically organized box-in-box structures. These are at least *two-dimensional* structures, and syntacticians therefore employ phrase structure graphs for representing the properties of linear order in a hierarchy.

The input-driven aspect is the mapping of the one-dimensional array on a two-dimensional hierarchical structure. The output-driven aspect is the converse: the *two-dimensional* phrase structures are ‘compressed’, that is, mapped on the *one-dimensional* arrays. In other words, they are *linearized* in a sequence of terminals.

Which of these two aspects is more economy-driven? Obviously, it is the processing of the input. My limited resource as a listener is the processing time I need. For generating the output, I can reserve as much time as I need, but the input must be processed as fast as it arrives otherwise an overflow of my working memory buffer will cut off my online processing activity before I have succeeded.

What does this imply for the processing strategy and the data structures? Evidently, processing should start immediately and not be delayed. That implies that I have to guess the final structure of the phrase I am processing before I have reached the end of the phrase. Otherwise I would be unable to integrate the incoming elements of the phrases.

So, the best type of structure is one that allows an optimal fit between top-down information (i.e. knowledge-driven, by the application of grammar knowledge) and bottom-up information (i.e. data-driven, by the incoming data). With this in mind, let us compare two simple structures, namely a right-branching one and a left-branching one.

- (1) a. [[[h° A] B] C] left-branching (= merger to the right)
 b. [A [B [C h°]]] right-branching (= merger to the left)

The representation as bracketed strings best reveals the crucial difference. When the processor meets the first element in a structure like (1a), it is unable to predict how deeply embedded the element is, or, in other words, how many brackets it needs to open. In a structure like (1b), however, the first element will inevitably be the highest one, that is, it will be dominated by the root of the phrase. So, independent of the complexity of the phrase, the root is always the first bracket. Complexity is a matter of the number of closing brackets. But at this point, all elements already have been processed. For (1a), on the other hand, the root bracket must be guessed and revised, with backtracking.

The parser prefers early commitment and little to no revision of decisions. So, (1b) clearly is more parser-friendly than (1a). However, (1a) has a valuable feature, too. The head of the phrase is presented early, and the head contains information on the structure since it contains the information on arguments and their grammatically selected properties (category, case, semantic relations). So, in the best of all worlds, we would like to combine the ‘early head’ advantage of (1a) and the ‘who is first is higher’ property of (1b).

But there is a problem that we have to solve before we can successfully combine the two properties. It is the endocentricity property. Phrases contain a head, and since merger starts with the head, the head is in the most deeply embedded position. This seems to make it impossible to add to (1b) the ‘early head’ property. Grammars have found a way out, though. Here it is:

- (2) a. [V° C] *read letters*
 b. [V° [B [V° C]]] [*send_i [friends [e, letters]]*]
 c. [A [V° [B [V° C]]]] (*make*) [*her [send_i [friends [e, letters]]*]]

The solution to the apparently incompatible desires (have the head first and have a right-branching = left-merging structure) is the shell structure of complex head-initial phrases. The head is instantiated in each shell and lexicalized ultimately in the highest position. The lower positions are empty heads, co-indexed with the lexical head. The structure is a structure with a head chain.

(2b) and (2c) is the SVO solution for complex VPs. All arguments follow the head, except for the highest one. This one is local to the head, but it precedes. If all arguments were to follow the head, the structure would be that of a VSO language. Please keep in mind this exceptional property of the highest element. It is the seed of the exceptional property of the subject in comparison to the objects.

Let us recapitulate briefly. First, *premise 1* is the description of a property of Universal Grammar. It guarantees parser-friendly phrase structures. A phrase structure is parser friendly if it allows the immediate combination of

top-down (= grammar-driven) and bottom-up (= data-driven) information. This is the case in right-branching (= left-merging) structures since the active node in bottom-up processing is at the same time the highest node in the processed subtree.

Second, head-initial phrases require a more complex structure than head-final ones, since the head cannot simultaneously be in the lowest position and precede the dependent elements with the phrase as a right-branching structure. The solution for combining the two apparently incompatible requirements (head first, head in lowest position) provided by UG is the shell structure of head-initial VPs, with a V chain that relates the initial V position to the foot position.

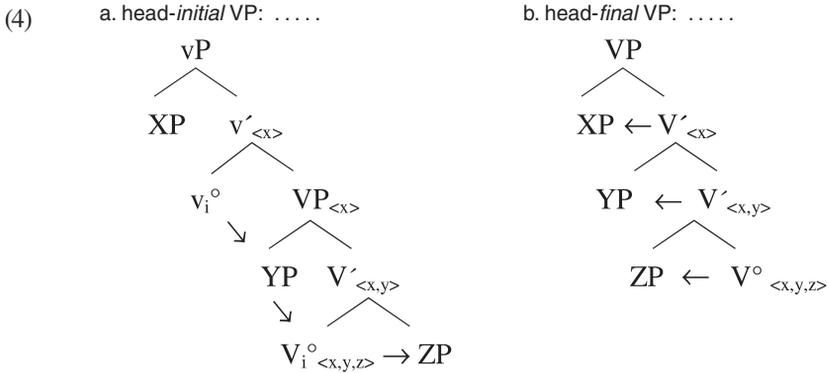
Where does *directionality* come into play? The directionality value (progressive/regressive = right/left = forward/backward = \Leftarrow / \Rightarrow) is the grammatical feature that governs the application of merger. Let me illustrate this with a three place verb, and three arguments (XP, YP, ZP) with the ranking of the arguments indicated in (3a).

(3)	a. $\{h^\circ; XP > YP > ZP\}$		
	\Leftarrow		\Rightarrow
Step 1:	b. $[ZP h^\circ]$		b'. $[h^\circ ZP]$
Step 2	c. $[YP [ZP h^\circ]]$		c'. $[YP [h^\circ ZP]]$
Step 3	d. $[YP [ZP h^\circ]]$		d'. $[h^\circ [YP [h^\circ ZP]]]$
Step 4	e. $[XP [YP [ZP h^\circ]]]$		e'. $[XP [h^\circ [YP [h^\circ ZP]]]]$

First, the head is merged with the lowest-ranked argument, according to the directionality requirement. This is step 1. Then the next argument is merged, according to the universal restriction on merger, that is, it is merged as a *left* sister. This is step 2. Here, the crucial difference between OV and VO becomes visible. The YP in (3c') is not in the directionality domain of h° . So, the structure is merged again with h° . This is step 3 and the result is a VP-shell structure. Note that for (3c), in contrast with (3c'), this problem does not arise. Each left sister is in the directionality domain of h° or a projection thereof. In step 4, finally, the highest-ranked argument is merged (3e'). It ends up in a VP-internal position, but this position is once more not in the directionality domain. Here the 'SVO measure' applies. It is treated as the subject and eventually receives its directionality-dependent licence from a *preceding* functional head. This is the very head that attracts the verb that agrees with the subject. In OV, the need for a functional licenser does not arise. Like all other arguments, the highest argument in (3e) is in the same directionality domain as all the other arguments.

The structures in (4) are the result of the building steps in (3). The arrows indicate the directional licensing relation. The notation for the shells in (4a) just follows the notational convention in the Generative literature, with a 'VP' as the

complement of a ‘little v’. However, it should be clear that ‘vP’ and ‘VP’ are just two instantiations of projecting a VP. You should bear in mind that the need for having two VPs in (4a) is a purely structural one, following from the two universal requirements (directional licensing, right-branching merger). There are no inherent semantic features associated with the distinction between V° and v° . The vP is just the re-application of building up a VP.



Now, we are in the position to derive an essential differentiating property of head-final and head-initial structures, namely the *compactness* property of head-initial structures. The source of this property is a *locality* condition on directional licensing that applies universally.

The merged phrases must be in a local relation to the head in order to be identified by the head. This locality relation is defined as the *Principle of Directional Identification* (PDI):

Principle of Directional Identification (PDI): A merged phrase P must be properly identified.

A merged phrase P is properly identified by the head of the host phrase h° iff

- (i) P is in the directionality domain of h° , and
- (ii) P and an extension of h° *minimally, mutually c-command* each other.
(extension of $h^\circ =_{\text{def.}} h^\circ$ or a projection of h°)

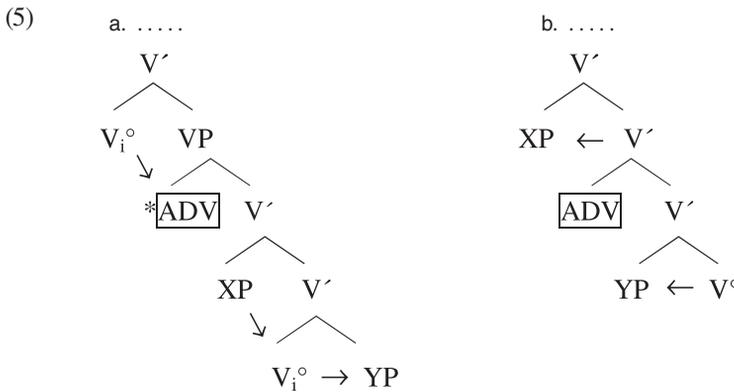
Let us check (4b) for its PDI obedience. First, each of the three phrases (XP, YP, ZP) precedes V° , hence each one is in the proper canonical directionality domain for a head-final structure. Second, each one of the three complement phrases is in a sister position of V° or an extension of V° (namely V'). Since sister nodes minimally and mutually c-command each other, the condition (ii) of the PDI is fulfilled.

How does (4a) meet the PDI? ZP is a sister of, and follows, the verbal head. Hence PDI is clearly fulfilled. The position for YP is not in the directionality

domain of the lowest V°-position, but it is in the directionality domain of the higher V-position in the shell structure. Since the two V-positions are links in a VP-internal V-chain, the YP is in the canonical directionality domain of a link of this chain. Hence, each of the two phrases is in the directionality domain of at least one chain link. Finally, we have to consider the XP in (4a). It is not in the directionality domain of a verbal, VP-internal head. Its identification domain is VP-external. The identifying head is a functional head.

Second, how is minimal, mutual c-command fulfilled in (4a)? V° and ZP are sisters, so condition (ii) of PDI is met for ZP, but what about YP? YP c-commands V°, and v° c-commands YP, and there is no phrase that intervenes between either v° and YP, or between YP and V°. So v° minimally c-commands YP and YP minimally c-commands V°. ‘Mutuality’ is a chain effect. Since YP c-commands V°, it c-commands a link of the V-chain. v° on the other hand c-commands YP. Hence YP c-commands, and is c-commanded by, a chain link of the V-chain. Taken together, this satisfies the *mutual c-command* requirement.

Now, we have all ingredients at our disposal for deriving **compactness**: note first that in VO, the mutual c-command requirement in the VP shell structure needs to be defined relative to the V-chain. Second, the *minimality* requirement is the crucial source for the *compactness* property of head-initial structures because interveners destroy minimality and thus destroy the identification relation. Let us compare the two cases:



Note that the compactness property of head-initial structures like (5a) follows immediately from the requirement of *minimal, mutual, directional c-command* in a universally right-branching merger structure. In the head-initial VP (5a), the verb cannot c-command its arguments unless it is re-instantiated in a VP-shell structure. In (5a), an intervener like the boxed adverbial ‘ADV’ would break minimality and therefore destroy the minimality relation between V° and XP. V° would minimally c-command ‘ADV’, but not the XP. Analogously, a scrambled

intervener between XP and the lower V° would block the minimality relation between XP and the lower empty V° position since XP would be unable to *minimally* c-command V°. It would minimally c-command the intervener, but not the V° head.

In (5b), however, interveners like the boxed adverbial ‘ADV’ do not affect the identification relation of either XP or YP since both have their identifier in the sister position, namely a projection of the verb on the right-hand side, that matches the directionality requirement. The corresponding sister positions in (5a), on the other hand, are unable to function as identifiers because of the directionality mismatch. So, for head-initial phrases, identification rests exclusively on the head chain in the shell structure.

In sum, compactness is a VO effect (5a), because only in head-initial structures is the identification relation a matter of the head positions in the shell structure of a complex head-initial phrase. Compactness is not at issue for OV (5b), on the other hand, since here, identification employs the sister positions because these are projections of the head and positions in the required directionality. Note that the German NP is head initial and compact. The VP is head final and is not subject to compactness. This shows that ‘OV’ is not a global property but a property of the headedness of phrases. If there is a unique directionality value, you perceive a strict OV or a strict VO language. If it is not unique, you see a ‘mixed’ system like in German or Dutch.

Rigid serialization in VO vs variable word order (*scrambling*) in OV is just another instance of the compactness property. In (5a), the boxed ‘ADV’ could be an adjunct or it could be a scrambled object. Imagine a situation where YP is scrambled in front of XP, as in the examples in (6):

- (6) a. * [_{VP} show *the picture*_i children e_i]
 b. [_{VP} das *Bild*_i Kindern e_i zeigen]
 the picture children show
 ‘show children the picture’

In (6), the position of the scrambled direct object intervenes between the position of the verb and the position of the indirect object. This blocks the identification relation between the verb and the indirect object in (6a), just as an intervening adjunct would do. Note that this explanation of the absence of scrambling in head-initial phrases presupposes that scrambling is the result of re-merging a phrase and thereby generating a chain between its base position and the scrambling position. The object *the picture* is theta identified²² in its base position.

²² Theta-identification is the identification of a phrase by the head as the argument of the head, according to its status in the lexical argument grid.

The **uniform relative order of arguments** in OV and VO is a straightforward consequence of the fact that both in the VO structure as well as in the OV structure, merger operates on a right-branching structure. So the element merged ‘earlier’ will be lower and will follow the element merged ‘later’ because the lower one necessarily follows the higher one. If merger, contrary to empirical evidence, were to follow directionality, head-initial phrases would merge to the right and head-final phrases would merge to the left, and the result would be mirror image orders.

Order and distribution of verbal particles is a valuable source of evidence for the identification of chain links in the shell structure in languages with particle stranding. The stranding position is a verb position. So, a stranded particle signals a verb position. The shell structure of a head-initial phrase is a structure with *more than one* verb position (7a). The head-final structure, on the other hand, is a structure with a *single* verb position within the V-projection, hence there is only a single particle position, namely the position adjacent to the head (7b).

Second, the position of the particle relative to the verb is an indicator of the directionality. The particle is selected by the head in the canonical directionality. In OV, without exception, the particle immediately precedes the verb, and in VO, the particle follows.²³

Why is there no clause-final particle position in English for double object constructions? The answer seems to be simple: there is no clause-final verb position and hence no stranding position in (7c).²⁴ Things get complicated, however, by the fact that a clause-final position for the particle of intransitive constructions, as in (7d), is grammatical.

- (7) a. The secretary [sent_i [the stockholders [e_i out a notice]]]
 b. dass der Sekretär den Aktionären eine Mitteilung *aushändigte*
 that the secretary the stockholders a notice out-handed (‘handed over’)

²³ Note that in nominalizations of particle verbs, the particle order of OV is congruent with the order in compounds, namely head-final. In German, the particle order is identical for verbs as well as for nominalizations. In English, however, there are two patterns for nominalized particle verbs. One is the verb + particle pattern, as in (i), and the other is the compounding pattern (the modifier precedes the head of the compound), as in (ii).

- (i) the make up, the fall out, the sit in, the count down, ...
 (ii) the uprising, the output, the income, the downpour, ...

The examples in (i) are nominalized verb + particle structures; the examples in (ii) are regular compounds.

²⁴ Johnson (1991) assumes that clause-final particles in double object constructions are acceptable if and only if both objects are weak pronouns. Den Dikken (1992: 163) claims that the adequate generalization is that clause-final particles are possible only if they are predicative.

- (i) Gary poured me some out
 (ii) Will you sew me a new one on?

- c. * The secretary sent_i the stockholders e_i a notice e_i *out*
- d. The secretary sent_i a notice / it e_i *out*
- e. The secretary sent *out* a notice /*it

If what has been assumed above is correct, the absolute clause-final position in VO is not a base position for a transitive verb. The base position of the object would follow and the stranded particle would precede the object. Therefore, in (7d), the object must have moved to the left, as indicated in (8). Pronouns move obligatorily (7e).

(8) sent_i [a notice_j [e_i out e_j]]

Note that the structure in (8) is the structure normally found with double object construction. It seems as if the object of the transitive verb may alternatively use either position of the objects in a double object construction.²⁵ For weak pronouns, the fronted position is the only licit position (7d) because in all Germanic languages, weak pronouns are fronted to the left edge of their domain (see chapter 4.1).

Verb clustering is an OV phenomenon. Verb clusters are by no means a peculiarity of Germanic OV languages. Sells (1990) discusses clustering properties for Japanese and McCawley and Momoi (1986) for Korean. Han *et al.* (2007) discuss transparency phenomena in Korean that are typical of the clause union effect that correlates with V-clustering. The peculiarity of Germanic OV languages is the fact that clustering is accompanied by verb order variation in the cluster.²⁶ Why should UG provide or require clustering in OV grammars, but not in VO ones?²⁷

The UG ‘motive’ for granting clustering to OV becomes evident once we look at the structures from the point of view of their processing implications. OV complementation produces *centre-embedding* structures, as in (9a); VO complementation does not (9b). Centre-embedding is a processing obstacle. This becomes evident if you look at the labelled bracketing structure in (9). In (9a), the parser has to guess how many brackets to open in order to instantiate the root VP node.

²⁵ For a different analysis see den Dikken (1992) or Johnson (1991). They argue for an analysis in which the particle is the head of a phrase selected by the verb, namely a ‘small clause’.

²⁶ A correlating feature of this difference seems to be the following: all Germanic languages, except English, are V-movement languages (V2), with V-movement to a head-initial functional head. Japanese and Korean do not move verbs and they do not have overt head-initial functional heads. All Germanic OV languages show verb order variation in the cluster; Japanese and Korean do not. We may conclude that verb order variation in the cluster is absent if the verbs are immobile in the given language. This distinguishes strict OV from the Germanic OV languages.

²⁷ Apparent counterevidence – namely Romance restructuring – will be discussed at the end of this subsection.

In (9b), each of the VP complements is introduced by the head and immediately dominated by its phrase node. For the structure in (9b), the *least* embedded element *comes first*. In (9a), the *most deeply* embedded element comes first, followed in turn by the elements with a more shallow embedding.

- (9) a. [[[... diese Strukturen verarbeiten]_{VP} können]_{VP} müssen]_{VP} würde]_{VP}
 these structures process be-able-to have-to would
 ‘would have to be able to process these structures’
- b. [_{VP} could [_{VP} have [_{VP} been [_{VP} processing these structures]]]]

By admitting clustering, UG provides grammatical means for circumventing this obstacle. Instead of projecting a cascade of centre-embedded VPs, a single VP is projected and the verbs are clustered (10a). The cluster is a syntactic structure resulting from head-to-head merger. It is the (complex) head of the VP. The structure above the cluster in (10a) is identical with the structure of a VP with a simple head (10b). Clustering avoids phrasal centre embedding and reduces the centre-embedding property to the strictly local area of the complex head, that is, the verb cluster. The clustering structure groups the verbs into a single, compact, head-to-head adjoined structure (10c).

Dutch grammar goes one step further. It allows the full elimination of centre embedding and also the structuring of the cluster in a right-branching manner. The result is a mirror image order for Dutch (10d) compared to German (10c). As will be shown in detail in the chapter on infinitival complementation (chapter 7), (10d) is a cluster. It is as compact as the German cluster (10c).

- (10) a. [... diese Strukturen [^{v°-cluster} verarbeiten können müssen würde]_{V°}]_{VP}
 these structures process be-able-to have-to would
 ‘would have to be able to process these structures’
- b. [... diese Strukturen [verarbeiten]_{V°}]_{VP}
 these structures process
 ‘process these structures’
- c. [[[verarbeiten können]_{V°} müssen]_{V°} würde]_{V°}
 process be-able-to have-to would
 ‘would have to be able to process’
- d. [zou [moeten [kunnen verwerken]_{V°}]_{V°}]_{V°} *Dutch*
 would have-to be-able-to process

Compactness is a key property of clustering. So-called restructuring constructions in Romance (especially in Italian) show transparency phenomena like the Germanic clustering constructions, but the verbs are not clustered. This becomes evident from

the fact that adverbials may freely intervene.²⁸ This shows that the verbs are projecting their own VP and are not partners in a cluster. The transparency phenomena in Romance are explicable in terms of alternative subcategorizations: an infinitival complement may either be a VP, and thus monoclausal, or an infinitival clause, and thus bi-clausal (see Roberts (1997) and Cinque (2004), for a technical implementation in terms of the ‘lexical’ vs ‘functional’ category of verbs).

A **mandatory functional subject position**, that is, an obligatorily lexicalized functional spec position exclusively reserved for the subject (EPP property),²⁹ is an SVO effect. An immediate effect of this requirement is the need of a subject expletive in order to avoid an empty spec position. SVO languages require subject expletives, while OV languages, Dutch notwithstanding, do not. They not only do not require them but they arguably do not allow them. This is a generalization that needs to be captured by an empirically adequate model of human grammar systems.

What is special about SVO in comparison to SOV with respect to the subject? It is the argument position of the subject in the structure of the VP. In OV, all arguments of the verb are merged within the same directionality domain (11b). If the subject argument of an unergative verb is merged in the highest possible argument position, this position precedes the *verbal* head, both in VO and of course in OV. In VO, however, this position is not within the directionality domain of the head. In (11a), this is exemplified by a VP in an ECM construction with a non-nominative subject. The subject of the VP precedes the verbal head *precede*, the object follows. In an OV structure, both the subject and the object precede the head.³⁰

- (11) a. (let \rightarrow) [_{VP} the subject [_{V \rightarrow} precede_{V \circ} the object]]
 b. [_{VP} das Subjekt [\leftarrow _{V \circ} dem Objekt vorangehen_{V \circ}]] (\leftarrow lassen)³¹

²⁸ In Italian, but not in German or Dutch, the verbs in the ‘restructuring’ construction may sandwich ‘cluster-foreign’ material (Monachesi 1999), as for instance adverbials. The clitic *lo* in (a.) is the object of *comprare* and raised to the position of the matrix finite verb. This is one of the transparency effects characteristic of the restructuring construction:

- a. Anna lo vuole (*immediatamente*) poter (*immediatamente*) comprare
 Anna-clit-acc wants (immediately) be-able-to (immediately) buy
 b. dass es Anna kaufen (*aus Jux /*sofort) wollte
 that it Anna buy (for fun / immediately) wanted

²⁹ In Chomsky’s view, the EPP (= extended projection principle) is a universally valid principle that requires a clause to have a subject (Chomsky 1982: 9–10). When the P&P model was in vogue (1981: 40), Chomsky was cautious enough to restrict the EPP to ‘English and similar languages’. Later, it got extended to universal validity. See Alexiadou and Anagnostopoulou (1998) for a differentiation in terms of feature-checking routines.

³⁰ Note that the ‘directionality defect’ of the VP-internal subject position is a property of SVO. SOV and VSO systems do not have this ‘defect’. In each case, the subject is *within* the directionality domain for the arguments.

³¹ Be aware: German obligatorily applies verb clustering instead of VP complementation (see chapter 7). The structure is given here just for expository purposes.

Given the first premise³² introduced in section 1.4, the VP-internal subject position in an SVO clause is not in the canonical directionality domain of the head of the VP, but is nevertheless in need of a licensing head with the *canonical licensing directionality*. This head is a functional head.³³ So, there must be a functional projection that selects the VP as a complement and satisfies the directional licensing requirement.

$$(12) \quad [_{FP} \dots [_{F'} F^{\circ} \rightarrow [_{VP} DP [V^{\circ} \dots]]]]$$

Why does the subject raise to the functional spec position? Note that the subject DP in an SVO structure (12) is within the directionality domain of the functional head F° , but it is not its sister. So, the functional head and the subject do not mutually c-command each other. This is fulfilled only if the subject raises to the functional spec position: the functional head c-commands the VP-internal subject position and the raised subject c-commands the functional head.³⁴

In sum, the functional subject position of SVO languages is a direct consequence of the directionality ‘defect’ of the VP-internal subject position in SVO. An SOV clause structure does not have this defect, hence it arguably does not employ an obligatory functional subject position. If this is correct, UG does not require clauses to have a functional subject position in general but only if the clause structure is an SVO structure.

What is the grammar-theoretic rationale behind the lexicalization requirement for the functional spec position or, in Chomsky’s terminology, the EPP *property* (see 13)? In other words, what triggers the need for an expletive subject if there is no subject argument available?

Evidently, the functional layer above the VP is not a ‘just-on-demand’ structure but a standard requirement for a VO clause structure. It is not merely triggered by the presence of a subject argument in need of licensing. It is an integral part of the clausal architecture of an SVO clause. The grammar principally provides the structural context for directionally licensing the preverbal, VP-internal subject position. Being a mandatory part of the structure, it must be ‘interpreted’, that

³² The *first premise*: positions in the projection of a phrasal head need to be licensed under the *canonical directionality* of the head.

³³ Except for ECM constructions. In (11a), the lower subject is licensed by the ECM verb.

³⁴ If nominative checking is not exclusively constrained to spec-head agreement but implemented in terms of an overt agreement relation, the raising requirement affects whatever is the highest argument in the V-projection. If this argument is not the nominative one, the result is a so-called *quirky subject construction* (see below), as in Icelandic. Note, that this shows that the primary trigger of raising a subject is not nominative-checking, but the minimal, mutual c-command requirement. This seems to be the grammatical source of the EPP property of non-pro-drop VO languages.

is, receive a status in the derivation. Leaving it radically empty, both in the head and the spec position, would be to ignore the structure. The expletive is a way of syntactically interpreting the structure.

In a Germanic VO language, like Norwegian (13a, a') or Faroese (13b), expletive subjects typically occur in the passive of intransitive verbs (13a, a') or in the counterpart of the English *there*-construction (13b). In German, an expletive would make each of these constructions ungrammatical (13c,d).

- (13) a. Ofte vart *det* telefonert a'. Ofte telefoneres *det* *Norwegian*
 often was it telephoned often telephones-PASS it
- b. Í dag er **(Pað)* komin ein drongur *Faroese*
 today is there arrived a boy
- c. Oft wurde *(*es)* telephoniert (= 13a) *German*
- d. Heute ist *(*es)* ein Junge gekommen (= 13b)
 today is (there) a boy arrived

In Dutch, the data are less clear-cut. The cognate of English *there*, namely *er*, may indeed occur in these constructions. But, arguably, the grammatical properties of *er* are not exactly the properties of a *subject* expletive (see Neeleman and Weerman 1999: 210–13). First, the alleged subject expletive *er* is not obligatory in a canonical SOV structure; see observation 6 in section 1.4.1 and example (14a). Second, as observed already by den Besten (1985), an expletive does not occur in the passive of double object constructions (14c), with the passive subject in the direct object position.

- (14) a. Ik weet, dat (er) gedanst wordt
 I know that (there) danced is
- b. Ik weet dat **(er)* wordt gedanst
 I know that (there) is danced
- c. dat **(er)* hem / een man **(er)* deze boeken niet werden getoond
 that (there) him / a man (there) these books-PL not were-3.PL shown

The case (14c) is the prototypical case for an expletive subject, unless the indirect object can be shown to be a quirky subject (see the next but one paragraph). A proof for the latter case would be that the dative is replaced by a PRO-subject in a clausal infinitive construction. This is the proof of subjecthood and Icelandic quirky subjects match this expectation; the indirect object in Dutch does not.³⁵

³⁵ In all Germanic V2 languages (VO as well as OV), an expletive is used in declarative clauses for the clause-initial position if no element has been fronted to this position. This is another instance of 'making visible/audible' an otherwise radically empty

Quirky subjects, as known from Icelandic, are an immediate by-product of an SVO clause structure in a specific setting of case checking. What is a quirky subject? It is a DP in the functional subject position that is not a nominative subject. In other words, it is a DP in subject position that does not agree with the finite verb (15a). A particularly clear indicator for a quirky subject is the fact that the functional subject, that is, the phrase in the functional spec position for the subject, alternates with a PRO subject in case the clause is infinitival (15b). The fact that quirky subjects alternate with PRO is instructive for yet another reason. It shows that PRO is not necessarily the caseless counterpart of a nominative subject.

Quirky subjects are admissible in grammar settings in which case checking of nominative is not positionally constrained, that is, not constrained to a spec-head configuration reserved for the subject. This is so in Icelandic. An immediate indicator of this property is the grammaticality of a postverbal nominative (15a). In Icelandic, subjects of unaccusative verbs and passive subjects may remain in their VP-internal, postverbal argument position.

- (15) a. Þá hefur henni líklega leiðst bókina (Sigurðsson 2004: 142)
 then has her-DAT probably bored book-the-NOM
 ‘Then, she has probably got bored by the book’
- b. Hún vonast til [að PRO leiðast ekki bókina]
 she hopes for [to PRO-DAT bore not book-the-NOM]
 ‘She hopes not to be bored by the book’
- c. Dann hat ihr / der Frau das Buch gefallen *German*
 then has her-DAT / the woman-DAT the book-NOM pleased
 ‘Then, the book has pleased her /the woman’
- d. * Sie hoffte [PRO das Buch zu gefallen]
 She hoped [PRO-DAT the book to please]

Note that in (15a,b), the nominative DP is postverbal, and the nominative checking is not affected by the finite/non-finite context if there is a quirky subject in the latter context in Icelandic. The corresponding property of the corresponding German verbs is the object before subject order (15c). In German, however, there is no evidence for quirky subjects. The diagnostic criteria discussed in Sigurðsson (2004) show that German does not qualify as a quirky subject language.

Crucial differences between German and Icelandic on empirical grounds have already been highlighted in Zaenen *et al.* (1985), who concluded that German

position. Without an expletive, the clause would be (mis)interpreted as a V1 interrogative clause (see Önnarfors 1997).

- (i) *Es* hat niemand angerufen
 it has nobody phoned

does not have quirky subjects. Sigurðsson (1989: 204–5) discusses in detail a wide range of contrasts (reflexivization, PRO subjects, conjunction reduction, subject position in ECM infinitives, raising) and re-emphasized this conclusion. Fanselow (2002) and Bayer (2003) analyse the corresponding data in German and confirm the conclusion that German does not show quirky subject effects.

What makes Icelandic a quirky subject language, but not English? Icelandic is an SVO language, and, crucially, nominative checking is not structurally constrained. It is relational. The nominative DP does not need to be raised to the spec position of the head that accommodates the agreement feature. This is the essential difference between Icelandic on the one hand, and English and the continental Scandinavian Germanic languages on the other hand.

German and Icelandic share *three of four* crucial preconditions for quirky subjects (*i.* morphological nominative, with *ii.* relational licensing; *iii.* verbs whose highest ranked argument is not the nominative candidate), but differ in a single factor, namely the licensing *directionality* of the verb. In German, all arguments are directionally licensed already in their VP-internal positions. Hence there is no grammatical trigger for moving a particular argument, which is not properly identified directionally, to a functional spec position.

In Icelandic, there is a functional projection for the subject whose spec needs to be lexicalized. Since the spec position is not the unique location for licensing a nominative it is open for non-nominative candidates, too. So, either the DP the verb agrees with is raised, or the highest DP in the VP is. In most cases, this singles out the same DP. Only if the nominative is a lower ranked DP (as in passive or with unaccusative verbs), may the higher ranked DP be a DP with an oblique case. If this DP is raised, the result is a non-nominative DP in a structural subject position. This is the quirky subject. In German, the subject is not raised since there is no need for a functional subject position, so there is no source for a quirky subject, that is, a non-nominative DP in a functional subject position.

(Missing) subject–object asymmetries constitute the final piece of evidence in confirmation of the principal structural difference with respect to the position of the subject in a VO and in an OV clause, respectively. For at least two decades, conditions constraining syntactic movement operations have been a main focus of interest, beginning as early as Ross (1967) and continuing till Chomsky (1986). Diverse and robust evidence was accumulated and analysed. Two contexts turned out to be robust opaque domains³⁶ for extraction, namely the preverbal subject phrase on the one hand and adjunct phrases on the other hand. Here, we are interested only in the difference between subjects and objects. In English, extraction out of a phrase in the preverbal subject position is strictly ungrammatical (16).

³⁶ ‘Opaque domain’ is the cover term for a domain that blocks extraction. Extraction out of an opaque domain is ungrammatical.

- (16)
- a. * Who_i did [a picture of e_i] impress you most?
 - b. * Who_i was [a picture of e_i] recognized by everyone?
 - c. Who_i did everyone recognize [a picture of e_i] ?
 - d. * Which question_i was [asking e_i] embarrassing?
 - e. Which question_i did everyone avoid [asking e_i]?
 - f. * Which question_i would [to have answered e_i incorrectly] annoy you?
 - g. (?)Which question_i would it annoy you [to have answered e_i incorrectly]?
 - h. * Which spot will [on e_i] stand a huge tower?
 - i. Which spot_i will a huge tower stand [on e_i] ?

Extraction out of a subject-internal PP is ungrammatical, both for a primary subject (16a) as well as a derived one, as the passive subject (16b), although the picture noun phrase is in principle an extraction site (16c). Gerundive subjects (16d) are non-transparent, and so are clausal subjects (16f) and PP subjects³⁷ in the locative-inversion construction. The corresponding phrases are transparent for extraction if they are *not* in a subject position. For those who do not judge (16g) as fully acceptable, the reason is the dependency between the extraposed subject clause and its place holder in the subject position.

In German, the corresponding constructions are fully transparent. This fact was emphasized first in the 1980s (Haider 1983, 1989) and is by now widely accepted as an uncontroversial fact of German syntax, though with diverging strategies for modelling it.

(17a) is arguably a case of extraction out of an NP. (17b) is representative for extraction out of a subject clause. The clearest piece of evidence, however, is the extraction out of fronted object clauses (17c). The object clause precedes the subject. If the subject were in a spec position, the fronted object would have to be in an even higher position, and definitely VP-external, and hence non-transparent, too. But it is fully transparent. This follows if the subject is VP-internal, and if scrambling is VP-internal (see chapter 4.3 on scrambling, for details).

³⁷ PPs in locative-inversion constructions share an essential subject property with DP subjects, namely, the avoidance of *do*-support:

- (i) On which spot stood a huge tower? Out of which cloud appeared a ghostly ghost?
- (ii) On which spot *did there* stand a huge tower? Out of which cloud *did there* appear a ghostly ghost?

In the *there*-construction, the wh-PP triggers *do*-support (ii). In the absence of *there*, the PP behaves like a subject. If this is a correct assessment, (iii) must be regarded as a kind of quirky subject construction in English.

- (iii) *On this spot* stood a huge tower. *Out of the corner* appeared a ghostly ghost.

- (17) a. Von welchem Künstler_i haben [die frühen Werke e_i] die besten Preise erzielt?
of which artist have [the early works] the best prices gained
‘The early works of which artist have gained the best prices?’
- b. Welche Frage_i hätte [e_i inkorrekt beantwortet zu haben] dich gestört?
which question would-have [incorrectly answered to have] you annoyed
‘Which question would it have annoyed you to have answered incorrectly?’
- c. Welche Frage_i hat [e_i korrekt zu beantworten]_j keiner e_j vermocht?
which question has [correctly to answer] nobody accomplished
‘Which question has no one been able to answer correctly?’

The explanation for the systematic contrast between English and German is this: German has an OV clause structure. In OV, the subject of the clause may remain in its VP-internal position. This is a position in the directionality domain of the head and hence its transparency qualities do not differ from those of its co-arguments. A VP-internal subject is as transparent as a VP-internal object. In English, a language with a VO clause structure, the VP-internal subject position is *not* within the directionality domain. The subject is raised to a functional spec position. This immediately accounts for the transparency differences.

Note that German respects the transparency restrictions in cases where they apply. Like English, German obeys the transparency restrictions for phrases in spec positions. This is easy to document with embedded V2 clauses. The phrase in the spec position of the embedded V2 clause is opaque for extraction, as expected (18b), but it is transparent in the clause-internal positions (18c). This confirms that the transparency contrast for subjects is structurally conditioned.

- (18) a. dass man glauben könnte, [[das Problem seriös zu lösen] [habe [keiner vermocht]]]
that one believe might [[the problem seriously to solve][had [nobody accomplished]]]
‘that they might think that nobody has been able to solve the problem seriously’
- b. * Welches Problem_i, könnte man glauben, [[e_i seriös zu lösen] habe keiner vermocht]?
which problem might one believe [[seriously to solve] had nobody accomplished]
‘Which problem might they think that nobody has been able to solve seriously?’

- c. Welches Problem, könnte man glauben, [e_i habe [e_i seriös zu lösen] keiner vermocht]?
 which problem might one believe [had [seriously to solve] nobody accomplished]
 ‘Which problem might they think that nobody has been able to solve seriously?’

A second and independent class of data confirming the systematic structural difference between a VO clause structure (English) and an OV clause structure (German) is discussed in the chapter on wh-movement (chapter 3, especially in section 3.4 on wh-in-situ). The data and the structural interpretation were presented first in Haider (1986): an in-situ wh-subject is deviant in English (19b,d) but it is inconspicuous in German (20b,d):

- (19) a. And who has published this when?
 b. * And when did *who* publish this?
 c. It is fully unclear what has struck whom
 d. * It is fully unclear whom *what* has struck
- (20) a. Und wer hat das denn wann zuerst publiziert?
 and who has it PRT when first published
 b. Und wann hat das denn *wer* zuerst publiziert?
 and when has it PRT who first published
 c. Es ist nicht völlig unklar, was wem zuerst aufgefallen ist
 it is not entirely unclear what whom first struck has
 d. Es ist nicht völlig unklar, wem *was* zuerst aufgefallen ist
 it is not entirely unclear whom what first struck has

The interpretation discussed in chapter 3 on wh-movement will be this: in German, the in-situ wh-subject is VP-internal. In English, the subject is in a VP-external, functional spec position. This will immediately account for the difference since the syntactic properties of a wh-element in a spec position are predictably different from the properties of a wh-element in its VP-internal argument position.³⁸

³⁸ If you search corpora, you easily find similar examples. Here are two specimens from newspapers:

- (i) Wo wer im Schwimmbad hingehört, weiß offensichtlich jede
 ‘where who in-the swimming-bath belongs-to knows obviously everyone’
 (source: *Die Zeit*, 1988: 32, p. 41)
- (ii) (Woran wir würgen oder:) *Wie* wird *wer* Akademiker?
 (on-what we choke or) how becomes who (an) academic?
 (source: Presse 18 May 1996)

1.5 Summary

German clause structure is determined by the following parameters:

- The *finite* verb is obligatorily moved to the highest functional head position, if this position is accessible. The spec position is obligatorily lexicalized in the declarative clause structure. This is the pan-Germanic V2 property (exception: English).
- The phrasal projections of the major categories are *not uniform* with respect to the canonical position of the head. Verbal and adjectival projections are head final (as in OV languages). Nominal projections (NPs) and PPs are head initial (as in VO languages). All lexical functional heads (complementizers, articles) are head initial, and arguably, all covert functional head positions, too (see chapter 2 on clause structure).
- OV (head final) and VO (head initial) are alternative implementations of a *directionality* requirement. The head directionally identifies the merged elements in its domain. SVO and SOV differ with respect to the directionality domain of the head. In SVO, the subject argument is local to the head, but not within its directionality domain. In SOV, all arguments are within the directionality domain of the verbal head. This is the basic difference that triggers a cascade of contrasts between OV and VO structures. OV/VO is not a holistic property of a language, though, but clearly a property of the phrasal organization. The evidence for this is the fact that German head-initial projections share the properties of English head-initial projections:
 - compactness (in head-initial structures),
 - word order rigidity (in head-initial structures),
 - order and distribution of verbal particles (in OV vs VO),
 - verb clusters with verb order variation and clause union effects (in OV),
 - mandatory functional subject position; subject expletives; quirky subjects (in VO),
 - (missing) subject–object asymmetries (in OV).
- Head-final projections differ from head-initial ones at least in the following characteristics. The systematic correlation between OV and VO, and the set of syntactic properties that hold or do not hold, respectively, calls for a principled coverage in any grammar model that claims empirical adequacy.
- Here, these differences will be modelled as the effect of combining the directionality requirements with a universal constraint on merger, namely the universal exclusion of (internal) merger to the right. For a

44 A comparative survey: German – V2 and partially OV

complex *head-initial* projection, this entails a shell structure, compactness, word order rigidity, multiple particle positions with standable particles, and a mandatory functional subject position.

Head-final projections are not compact, allow for word order variation, do not allow distant particle positions, cluster the verbs in subclausal or infinitival complement structures, do not have a mandatory functional subject position, and hence, do not show subject–object asymmetries conditioned by a functional subject position.