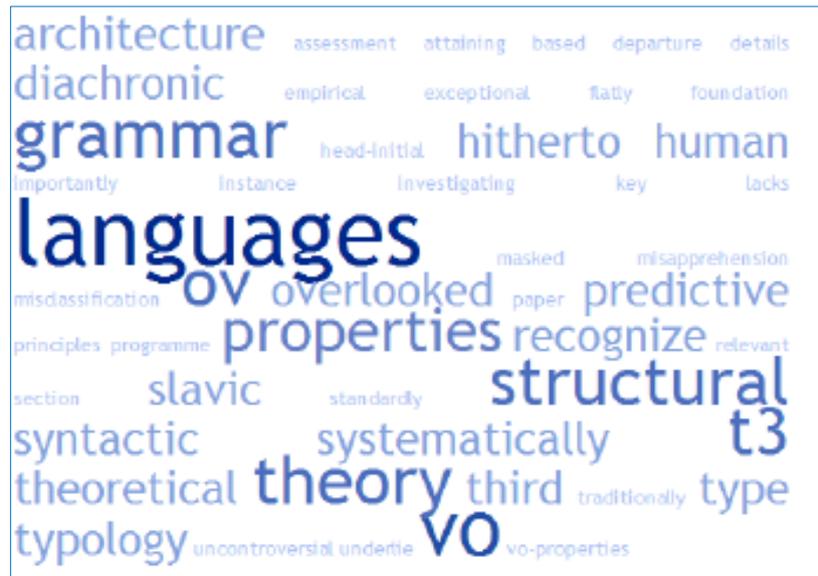


Type III - theoretical and typological modelling

- an invitation to empirical assessment*

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What it is all about

Grammar theory and grammar typology traditionally recognize two *major* types of syntactic structuring, namely head-final ('OV') and head-initial ('VO') languages. A *third* option ('T3') has been overlooked hitherto since it is masked as an 'exceptional' VO or OV language, respectively. The ensuing misclassification of T3 languages as 'VO' and the misapprehension of T3-properties as VO-properties has been detrimental both for a clear-cut typology and its grammar theoretical foundation, and even more importantly, for advancing a predictive theory of syntax based on the head position within phrase structure.

Slavic languages, for instance, are standardly filed as VO, but many of their robust syntactic properties systematically flatly *contradict* what is known as uncontroversial properties of VO languages (details in section 2.1 and 2.2).

In diachrony, the hitherto overlooked third type is the type that has been the point of departure for diachronic changes that lead to VO in Romance and to VO and OV in Germanic languages. Recognizing T3 is the key for attaining a predictive and precise theory of the structural architecture of human languages and for their diachronic structural dynamics.

Presently, grammar theory lacks or systematically ignores relevant data (s. Slavic). This paper is an invitation for joining an empirical assessment programme for identifying further predictive properties of VO, OV, and T3 and for investigating the theoretical principles that underlie the structural architecture of human languages.

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Abstract

The two major syntactic types traditionally recognized by grammar theory and grammar typology is the head-final ('OV') and the head-initial ('VO') type. This classification presupposes a *fixed* position of the head of a phrase, either preceding or following its dependents. This partitioning is not complementary, however. It crucially disregards a *third* option: '*variable*' *head positioning*. The consequence of this parameter setting option, which results from the *underspecified value* for the *directionality* of licensing by the head, is the third type (T3). It comprises structures known from OV, structures known from VO, and crucially a third pattern of structures that are neither found in OV nor in VO. Disregarding this third subset of patterns of a given T3 language has made it possible to inadequately file a language either as exceptional VO or exceptional OV language.

Overgeneralizing properties of a frequent and familiar type (namely VO) or – at worst – elevating it to the universal type is an unfortunate quality of the present day situation in grammar theory. What is more detrimental, however, is first the misclassification of T3 languages as 'VO' and second, the misapprehension of T3-properties as VO-properties. It voids the predictive power of grammar theory with respect to the properties entailed by the position of heads.

Slavic languages, for example, are standardly filed as VO, but many of their robust syntactic properties systematically contradict what is known as uncontroversial properties of VO languages (details in section 2). They are T3 languages, and their 'exceptions' are regular T3 properties.

The third type of structural organization (T3) comprises a large number of languages that hitherto have been misclassified as VO or to a minor extent as OV. Thereby, the clear-cut identification of the VO-type and the precise predictions of their concomitant structural properties has been severely 'polluted' and deprived of its predictive power. On the other hand, T3 languages have been misanalysed by technically squeezing them into the syntactic format of VO languages. They are regarded as exceptional, contrary to the facts.

Recognizing and precisely identifying the third type will have immediate and far-reaching consequences for grammar theory as well as for the understanding of the diachronic dynamics of languages. The attested predecessor languages of the Germanic and Romance language family are T3-languages.

1. Introduction

Remarkably, syntactic typology and theoretical syntax still are in an inverse coverage relation: small, but tightly interconnected for theoretical syntax at its best, and wide-ranging, but less connected for typological syntax. Moreover, the interaction between the camps is suboptimal.

The ideally detailed and in-depth analyses required for the best-attainable empirical support of theoretical claims unavoidably narrows the work space of the theoreticians in terms of the number of languages ('fruit flies') they can adduce for close scrutiny. Typological syntactic work, on the other hand, requires systematic surveying of large representative samples of languages. Unavoidably again, this narrows the work space in terms of in-depth analyses in each of the languages under scrutiny. Work is bound to concentrate on a feasible number of parameters that can be straightforwardly checked cross-linguistically. Here, the language-specific identification of parameters must not depend on decisions that presuppose complex grammar-

internal analyses since this would go beyond the scope of these inquiries, for practical reasons. Here are two pertinent examples for this sketch of the *improvable* ‘state of the art’.

Theoretical syntacticians tend to promote type-specific properties to the level of universals. The development of modern structuralist syntax is grounded mainly on SVO-type languages, namely English, Romance, and North Germanic languages. Findings have been extrapolated to other languages then.¹ Here are two examples: ‘*Superiority*’ and ‘*EPP*’. Superiority (and its present day renderings) restricts the choice of the interrogative element to be fronted in languages with fronting interrogative phrases. Informally, the structurally higher phrase is prioritised. Here are two sets of example sentences from English (1a,b) and German (1c,d):

- (1) a. I do not know *what* has shocked *whom* b. *I do not know *whom what* has shocked
 c. Ich weiß nicht, *was wen* schockiert hat d. Ich weiß nicht, *wen was* schockiert hat

German ‘violates’ superiority (1d), but this does not make it exceptional. It is but representative of languages with a head-final VP. Unfortunately, there is no typological survey on these properties that could serve as a corrective for overly strong claims with poor type coverage.

The EPP ‘universal’ claims that every sentence must have a (structural) subject. This is true of [S[VO]] and in fact it is one of its essential type-characteristics.² But it is crucially *not* true for SOV. Again, a sufficiently in-depth typological survey on the structural representation of subjects and the correlation with the (non)obligatoriness of expletive subjects would be the vital evidence-based remedy.

Typologists, on the other hand, happen to over-interpret their findings: Since the nineties – Haider (1992/2000) and Kayne (1994) – it has become an unchallenged position within structural grammar theory that syntactic phrases have to be regarded as (*universally*) *right-branching*.³ This insight is based on a large and diverse set of interconnected syntactic properties, studied in great detail in a limited sample of languages, though. This state of affairs contrasts with statements of syntactic typologists, like the following one (Dryer 2009:185):

“I presented evidence from a sample of 625 languages on which pairs of elements correlate with the order of object and verb, and which do not (Greenberg 1963). I argued that the word order correlations reflect a tendency for languages to be consistently *left-branching* or consistently *right-branching*.” [italics mine; HH]

What it conceivably means is that phrases in these languages tend either to be *head-initial* (‘left’-headed) or *head-final* (‘right’-headed). This is a statement on *word order*, not on *structure*. What it says, however, is a strong claim on phrase *structure*,⁴ which cannot be simply read off the data provided in the paper.

¹ A half-truth is a whole lie, as people justly say, and biasing one’s theory on VO languages most likely is bound to miss the empirically adequate theory for the syntactic architecture of human grammar systems in general.

² A completely head-initial language would be [VSO]. SVO is head initial for the VP in surface structure. There is a single argument of the verb that is VP external. It precedes the VP. This is the subject, and it needs to be accommodated by a structural position which turns out to be obligatory. This *constitutes* the SVO-type within the type of strictly head-initial languages. [SOV] does not need a VP-external subject position. All arguments are on the canonical side. Hence OV-languages do not need expletives for an otherwise not lexicalized subject positions either (for details see Haider 2010 (ch.1) and Haider 2012 (ch.3)).

³ *Right-branching*: [... [... [.. x° ..]]]XP. *Left-branching* (excluded on the phrasal level): [[[.. x° ..] ...] ...]XP

⁴ Dryer could have noted a problem even on the basis of his inspection of simple word order patterns: If head-final phrases and head-initial phrases were inversely *structured*, their respective word orders – *ceteris paribus* – would have to be mirror-images for their nominal complements, for instance. Obviously, this is not the case:

[Z [Y [X V°]]] vs. *[[[V° X] Y] Z] (see also Haider 2010:15).

In sum and oversimplified: theoretical syntax purports to study ‘everything’ in a *necessarily* small set of languages; typological syntax has to study ‘every language’ on a *necessarily* small range of parameters. ‘*Necessarily*’ means *practical* necessities of work time limitations.

Presently, theoretical syntax needs to be upgraded in terms of its cross-linguistic coverage, and typological syntax benefits from upgrading in terms of its syntactic discriminatory power. Hence, this situation could and should be improved, for the gain of both parties.

2. The issue

2.1 T3 – the overlooked sibling of OV and VO

‘OV’ and ‘VO’ are regarded major word order patterns in typological and in theoretical syntax. These acronyms are used both, in a narrow sense (i.e. the head-final or head-initial organization with respect to the verb phrase), and in a broad sense (i.e. strictly head-initial vs. head-final organization, for any phrasal head in a given language).

Given the universal right-branching property (see fn. 3; Haider 1992, 2010), linear order and structural organisation harmonize in the case of OV. Structurally, a head-final organization amounts to a right-branching structure, with the head in the final foot position (2a). A head-initial organization, on the other hand, is more complicated than has been realized for quite some time. It is definitely *not* a left-branching structure (2b). It is a right-branching structure, too. But, the verb’s canonical directionality mismatches the universal right-branching structure. So, the verb cannot be both in the foot-position and precede its dependent phrases. Hence, in a complex, head-initial verb phrase, there must be more than one verb-position (2c).

- (2) a. [XP [YP [ZP V°]]] head-final (‘OV’) organization of the verb phrase
 b. *[[[V° ZP] YP] XP] *inexistent* left-branching structure of a verb phrase
 c. [XP [V_i° [YP [-_i ZP]]] head-initial organization of a complex verb phrase

Ample and diverse evidence for (2a,c) is discussed in detail in Haider (2010, ch.1; 2012, ch. 3) and summarized in the synopsis in table 1 and the discussion below. Let us pick out a single piece of evidence for an essential difference between (2a) and (2c), namely the predictable distribution of stranded verbal particles in particle-stranding VO-languages like English or the Scandinavian languages. Here is as a single, but instructive data point:

- (3) a. ... send me *up* a /drink /... (24.500.000 hits in a google search. April 5th, 2012)
 b. ... hand him *out* a /flyer /... (2.080.000 hits in a google search. April 5th, 2012)

Note that there is *no* OV language that allows stranding a verbal particle *between* two nominal arguments, for a simple reason: In OV, there would be no *intermediate* V-position between nominal arguments. In VO, this very stranding position (see the intermediate empty verb position in (2c)) is the structural foot position of the verb in (2c). OV and VO are alternative implementations of a directionality property on the very same universally right-branching structural scaffolding. In VO, the verb obligatorily precedes its dependents, in OV it follows.

The syntactic corollaries of this basic difference for any type of head-initial/final phrase have been on my research agenda for two decades. The harvest is presented in Haider (2010) and (2012). One major and initially unexpected result is the discovery of an overlooked but widespread syntactic type, next to strict OV and strict VO. This is the ‘*third type*’ (T3). It is a natural sibling of the two structures illustrated in (2a) and (2c), respectively.

T3, the third type, is the type with *un(der)specified* directionality of the (verbal) head: it may operate *ambi-directionally*, that is, as a head with preceding dependants, or with dependants that follow, or with both. The result is the following *set* of patterns, *all of which* are grammatical in T3:

- (4) a. [XP [YP [ZP V°] head-final (the subset congruent with OV)
 b. [XP [V_i° [YP [-_i ZP]]]] head-initial (the subset congruent with VO)
 c. [XP [YP [V° ZP]]] intermediate position (the subset of T3 only)

In typological syntax, T3 languages happen to be subsumed under languages with ‘predominant SVO order’, simply because (4b) is a frequent word order. Grammar theory of the Generative school treats them as highly exceptional VO languages. The attempts of covering their syntactic processes rest on the assumption of syntactic devices that are alien to genuine SVO languages.

An exemplary case is the case of Slavic languages. They are standardly (mis)filed as VO languages, simply because the pattern (4b) is a highly frequent one. But, (4a) and crucially, (4c) are grammatical as well. And on top of it, Slavic languages allow for constructions that are strictly ungrammatical in any uncontroversial VO language. Russian may serve as a representative language here. (5) illustrates the three T3 word order patterns for verb placement:

- (5) a. čto Maša *pokazyvaet* Petru svoj dom (Russian)
 that Mary shows Peter her house
 b. čto Maša Petru *pokazyvaet* svoj dom
 c. čto Maša Petru svoj dom *pokazyvaet*

Of course, there is a *technical* solution for integrating (5b) and (5c) into the confines of SVO. But, this device (fronting of arguments as the result of ‘scrambling’ arguments across the head of the VP) unmistakably yields ungrammatical structures in uncontroversial VO languages. The real problem is that these apparent ‘exceptions’ are not language specific, and, even more importantly, that the preverbal phrases do not show the syntactic properties of phrases in derived position.

Here are two more cases that flatly contradict the assumption that Russian is a VO language, namely *extraction* out of *preverbal* phrases and the absence of the *edge effect* for left-adjunction to a head-initial phrase, viz. the verb phrase.

In genuine VO languages, postverbal phrases are open for *extraction*, but *preverbal* phrases are not. Moreover, ‘left-branch’ extractions (6) are ungrammatical for head-initial phrases. In T3, both are licit. They are licit because the extraction site is within the directionality domain of the respective head.

- (6) Kakuju_i Ivan [-_i mašinu] *kupil* svoej žene? Russian
 which_i Ivan [-_i car] *bought* his wife
 Which car did Ivan buy his wife

The property exemplified by (6) is a predictable property of a T3 language: First, the preverbal object is within the directionality domain of the verb, just like in OV, since the verb is *ambi-directional* in T3. Hence extraction is licit. Second, the NP is T3, too (see example 5 in section 2.2). Hence *left-branch extraction* out of a *preverbal phrase* is licit altogether.

As for the *edge-effect*, it is – on the descriptive level – a ban against *intervening* material between the head of the left adjunct of a head-*initial* phrase and the very phrase it is adjoined to. In English, the edge effect is found with preverbal adverbials as well as with adnominal adjuncts (7a,c). In German, it applies only to adnominal adjuncts (7d) since only the NP, but not the VP (7b), is head-initial:

- (7) a. He has [[much more *impolite* (*than anyone else)] [criticised her]]
 b. Er hat sie [[sehr viel *unhöflicher* (als jeder andere)] [kritisiert]] German
 he has her much more impoliteley (than anyone else) criticised
 c. the [[much *higher* (*than any other building)] [edifice]]
 d. das [[viele *höhere* (*als jedes andere Gebäude) [Bauwerk]] German
 the much higher (than every other building) edifice
- (8) V prošlom godu [[gorazdo bol’še čem Igor] vyjgrala tol’ko Maša] Russian
 in previous year [much more *than Igor*] won only Mary
 ‘Last year, only Mary has much more won than Igor’

If Russian were VO, it should pattern with (subsets of) English. But if Russian is T3, it will pattern with (subsets of) OV (as e.g. German), since then the head of the verb phrase is not head-*initial* (but ambi-directional). Russian (8) does pattern like OV (7), and not like English, contrary to its alleged VO status, but it contains an ‘English’ subset of word order patterns (unlike OV languages).

Due to the ambi-directional headedness, T3 languages share many properties with OV, and lack many of the restrictions of VO, despite the actual but misleading frequency of VO-like serialization patterns. Classifying them as VO will contaminate a clear-cut syntactic typology for VO and significantly reduce the predictive power for theoretic or typological models of SVO (see table 1 below).

2.2 State of the art

Characteristic for the state of the art is the ‘splendid isolation’ of the two main protagonists, namely theoretical syntax and typological syntax. The optimal state would be one of continuous and intensive interaction on a give-and-take basis. Typological syntax is the genuine empirical testing ground of *theoretical syntax*, and *typological syntax* should continuously profit from insights achieved by the advances in the theoretic modelling. Unlike more mature branches of science, linguistics has not yet successfully established the team-work of an ‘experimental’ and a ‘theoretical’ camp. Typology (as well as psycho- & neuro-linguistics) constitutes the predestined empirical testing ground for evaluating the success of competing theoretic modellings.

Presently, theoretical syntax (i.e. structuralist grammar theory, comprising various variants of Generative Grammar, including HPSG and Optimality Theory), is mainly concentrating on a handful of languages from the same syntactic subtype of a single language family. Unsurprisingly, the findings tend to be overgeneralized and they are not systematically tested against sufficient typological data.

On the other hand, a theoretical syntactician would like to see typologically aggregated information organized in a ‘more interconnected’ way. This means that the syntactician needs a

positive *and* a *negative* check. (S)he needs to know what is licit, but also what is ruled out for a given parameter in the given language and how the parameters interact. The theoretical syntactician is bound to test the predictions of his modelling. So (s)he has to ascertain whether a hypothetic grammatical causality is supported or contradicted by data of a given language.

Here is an example: WALS⁵ labels German as a language with a post-verbal negation variant, viz. ‘SVONeg’. For a theoretical syntactician who did not know German, this characterization would be highly misleading. German is *neither* an SVO language, *nor* does it allow post-verbal negation if taken at face value. German is a V2 language with an OV verb phrase organisation and *pre-verbal* negation only. The SVONeg pattern is just one of several by-products of V-second for sentences with a *single* verb. Other variants are OVSNeg, AdvVOS-Neg, AdvVSONeg, but not SAuxOVNeg⁶. An interconnected approach would have to make these interacting factors transparent.

The typological approach works mainly bottom-up, although any survey grid is evidently guided by initial top-down decisions. The theoretical syntax approach consists, ideally, of cycles of top-down and bottom-up steps. First, a syntactic principle or constraint is hypothesized on the basis of a limited amount of data. The top-down step is the testing of the hypothesis against a large data basis. Then, the hypothesis will have to be modified in order to optimally match the empirical findings (bottom-up step), before starting the next cycle. In general it is hard for a typologist to foresee the kind of structures that will eventually turn out to be significant for the theoretician in testing models on the theory-devising level. For instance, WALS does not provide information on variable V-auxiliary orders, verb particle orders, or (obligatoriness of) expletive subjects, to name just a few items that will be discussed below. This is not an imperfection of design; it is just an unavoidable consequence of the feasibility limitations.

Table (1) summarizes prominent traits in comparison.

(non-exhaustive) list of syntactic properties	OV	VO	3 rd type	
XP YP ZP V	☑	*	☑	s. Russian, example (5) above
XP YP V ZP	*	*	☑	s. Russian, example (5) above
XP V YP ZP	*	☑	☑	s. Russian, example (5) above
Compactness	-	+	-/+	[ask (*politely) Mary] _{VP}
Scrambling	+	-	+	*[give the book _i a student _{-i}] _{VP}
Edge effect	-	+	-	s. above
Verb clustering	+	-	+	s. Afrikaans, Dutch, Frisian, German, ...

⁵ http://wals.info/example/all/wals_code_ger

http://wals.info/feature/144K?s=20&v1=cd00&v2=c00d&v3=c6f3&v4=cfff&z4=2997&z1=2998&z2=3000&z3=2999&tg_format=map&lat=49.61070993807422&lng=57.3046875&z=2&t=m

⁶ Diese Frage_{Obj} beantwortete_V Max_{Sub.} *nicht*_{Neg} – Gestern_{Adv} beantwortete_V diese Frage_{Obj} einer_{Sub} *nicht*_{Neg} - Gestern_{Adv} beantwortete_V einer_{Sub} diese Frage_{Obj} *nicht*_{Neg} vs. *Diese Frage_{Obj} hat_{Aux} Max_{Sub.} beantwortete_V *nicht*_{Neg}.

Aux-V-variation	+	-	+	<i>lesen können</i> <u>wird</u> (= ,read can shall'); <i>lesen wird können</i> ; <u>wird</u> <i>lesen können</i>) (German)
Functional subject	-	+	+/-	i. that <i>she</i> _{Nom} was looked at e _i ii. dass [auf <i>sie</i> _{Acc}] geblickt wurde (German)
Expletive funct. subject	-	+	+/-	i. that <u>there</u> arrived a plane from N.Y. ii. <i>Ofte vart</i> <u>det</u> telefonert (Norwegian)
Subject effect on extract.	-	+	-	i. What _i would you hate [eating - _i]object ii. *What would [eating - _i]subj. be dangerous?

The first and basic trait is the *variable positioning of the main verb* relative to its nominal arguments. Languages of this type tend to be misidentified either as exceptional SOV languages or as exceptional SVO languages. Yiddish (1) is a good example and so are its Slavic neighbours (see the discussion of Russian above).

- | | |
|---|--------------------------|
| (1) Yiddish (V2 + third type) | Data from Diesing (1997) |
| a. Maks hot [Rifken dos bukh <i>gegeben</i>] _{VP}
Max has Rebecca the book given | OV-like |
| b. Maks hot [Rifken <i>gegeben</i> dos bukh] _{VP} | neither OV- nor VO-like |
| c. Maks hot [<i>gegeben</i> Rifken das bukh] _{VP} | VO-like |

(1a-c) are instantiating the patterns in the first three rows of the table. If you think in term of a dichotomy between OV and VO, you are lost. In this case, only one of the three patterns can be the basic pattern. The two other patterns have to be treated as ‘exceptional’. For Diesing (1997), Yiddish is SVO, for Geilfuß (1991) it is SOV. Vikner (2001) analyses in detail a number of OV properties of Yiddish, but does not answer the basic question as to why it admits SVO-like word order variants (in non-V2 clauses, of course).

Obviously, Yiddish is neither a strict SVO nor a strict SOV language. It is, like all Germanic languages (except English) a V2-language, but it differs both from the SVO subfamily (North Germanic) as well as from the SOV subfamily (continental West-Germanic). It is T3. Its T3 property arguably is a continuation of the T3 property of all older Germanic languages. Let us now contrast the syntactic profiles of VO, OV and T3 languages.

The profile of an uncontroversial SVO language includes the following characteristics:

- i. The *order of nominal arguments* is *strict*. There is no order variation. Objects cannot be reordered nor can they be fronted into positions between the subject and the verb.
- ii. The *order of the verb, auxiliaries and quasi-auxiliaries* is *strict*; no free variation.
- iii. The order of V and the postverbal nominal arguments is *compact*. Intervening material (e.g. adverbials) makes the sequence unacceptable.
- iv. Adjuncts to head-initial phrases (i.e. the VP or the NP) display an *edge effect*.
- v. Preverbal phrases (i.e. the subject or internally fronted phrases) that are otherwise open for the extraction of subparts (e.g. in case of question- or relative clause formation) are *closed* in these positions.

- vi. The preverbal subject position is mandatory. If there is no subject argument, a subject expletive is required (unless the language is a null-subject language, that is, languages with *zero* subject pronominals).

These properties of an SVO-profile (see the English examples in 2) are in contrast with the SOV-profile of phrase structure. German (3) is a representative case for SOV. The following examples from English and German are to illustrate the contrasts. The order of the examples in (2) follows the above list:

- (2) a. forgive sinners their sins - *forgive their sins_i sinners e_i
 b. He has been explaining the problem - *He explaining has been the problem
 c. completely dismantle engines - *dismantle *completely* engines
 d. [[not so often (*as everyone else)] commit these mistakes]
 e. What_i did they recommend [eating -_i] – *What_i was [eating -_i] recommended?
 f. *Has been protested against these rules? – Is *(it) known how it works?

German is the exact opposite. What is ruled out in English is grammatical in German. This is not an idiosyncrasy of German, of course, but merely reflects its **OV profile**:

- (3) a. Sündern_{Dat} ihre Sünden_{Acc} vergeben_{V-inf}. – ihre Sünden_{Acc} Sündern_{Dat} vergeben_{V-inf}.
 sinners their sins forgive – their sins sinners forgive
 b. dass man es prüfen_{V-Inf} müssen_{V-Inf} wird_{Aux-fin} /prüfen *wird* müssen /*wird* prüfen müssen
 that one it examine have-to shall /examine shall have-to / shall examine have-to
 c. [Maschinen_{Acc} *vollständig*_{Adv} zerlegen_V]
 engines completely dismantle]
 d. [[nicht so oft (wie jeder andere)]_{Adv} diese Fehler_{Acc} begehen]
 not as often (as everyone else) these mistake commit
 e. Was_i hätte denn [-_i essen zu müssen] dich mehr gestört, - Austern oder Schnecken?
 *What would [to have had to eat -_i] bothered you more, - oysters or snails?
 f. Wurde_{was} [gegen diese Regeln]_{PP} protestiert_{protested?} – Ist_{is} bekannt_{known}, [wie es funktioniert]?
 was [against these rules] protested? – is known [how it works]?

And here is the T3 case.⁷ T3 languages have been typically misidentified as ‘atypical’ SVO languages, simply because SVO is a frequent word order pattern in this type of languages. But, once you inspect their syntactic profile more closely, it turns out that such a language would be a highly exceptional specimen of an SVO type language.

Russian is a convenient case for a representative of Type 3 in particular, and for the Slavic language family in general. Both, in typological syntax,⁸ as well as in structural syntax (Bailyn 1995), Russian is standardly categorised as SVO, but as shown above, Russian does not display VO properties. The mistaken allocation is merely based on a frequent word order pattern. Although the ‘deviant’ word order patterns have been explained away as effects of non-standard reordering processes, the structure dependent properties remain and they contradict

⁷ Note that this sentence is an example of a rare SVO construction, with the subject following the main verb. For a V2 language, this order is standard, however, and not rare at all.

⁸ WALs: http://wals.info/languoid/lect/wals_code_rus

its alleged VO status. What the VO-advocates neglect is the *systematic* exceptionality. It is not merely word order. The complete profile is a mismatch.

Next, let us adduce **Polish**. The following examples are to illustrate the prototypical order variation among verbs and auxiliaries in T3 (and OV).⁹ In OV and T3, verbs in head-final positions are clustering. This goes together with order variation on the cluster (see Haider 2010, ch. 7).

- (4) a. We wtorek *poukladać* *musisz* w szafie
 Polish
 on Tuesday (he/she) clean-up must in cupboard
 b. We wtorek *musisz* *poukladać* w szafie
 on Tuesday (he/she) must clean-up in cupboard
 c. Francuskiego *może* *nauczyć* *sie* *właściwie* *każdy*
 French can learn_(perf) by-oneself actually everyone
 d. Francuskiego *nauczyć* *sie* *może* *właściwie* *każdy*
 French learn_(perf) by-oneself can actually everyone

The variation among auxiliaries and main verbs is well-known from the Germanic OV languages. But in fact, it is a property of OV languages in general, provided that they allow V-movement. The latter condition explains the absence of verb order variation in strict OV languages like Japanese or Turkish.

Hungarian is another example for V-order variation in OV and T3, and for the misclassification of a language as VO. The clause structure of Hungarian is T3, with a ‘functional roof’, viz. topic-focus being grammaticalized in terms of functional head positions that attract the finite verb. The properties of the functional ‘roof’ must be kept separate from the basic structural organization of a clause. This is well known from the V2-property of Germanic languages in general, and the continental West Germanic languages in particular. They are head-final, V-fronting notwithstanding.¹⁰

Type 3 is not restricted to verbal phrases. T3 is expected to apply to any complex phrasal category, and therefore in particular to complex NPs. NPs may be head-initial (like in every Germanic and Romance language), they may be head-final (like in Japanese or in any other strictly head-final language), and they may be T3. In this case, the complements of N are pre-

⁹ As for Polish and other Slavic languages, “apart from the location of clitics there are virtually no syntactic constraints on the ordering of phrases in main declarative clauses“ (Siewierska & Uhlřřov 1998:109). But, see the discussion of compactness below, example (12).

¹⁰ Vikner (2006) exemplifies the uninformed confusion of the basic structural type and its functional extensions as follows: Whaley (1997:106), a textbook in descriptive comparative linguistics, is more explicit about why she follows Greenberg (1963) in taking SVO to be the “basic constituent order” of German. She takes an order to be the basic constituent order if it tends to be “strongly felt to be the basic order by native speakers”, if it tends to be “the most frequent order”, “the least marked order”, or the “pragmatically most neutral order”.

Whaley is representative of a still widespread, uninformed attitude of claiming classifications based on nothing but mere staring at surface orders. Staring at stars would tell that they move in circles and people took this for granted for millenia. Note that the V2 property has been typologically acknowledged already a generation ago, in 1981, but it has not yet made its way into all typologically interested brains:

“The order used for a stylistically unmarked version of *John saw Mary* in German would be SVO, too, but to simply call German an SVO language would disguise the verb-second nature of its word order.” Mallinson & Blake (1981:129).

dicted to vary between a prenominal or a post-nominal position (see WALS¹¹ on Bulgarian, Croatian, Czech, Macedonian, Serbian: N plus Genitive order: “no dominant order”). Another crucial prediction is the *absence* of the *edge-effect* for prenominal adjuncts. This is exactly what Giusti & Dimitrova-Vulchnova (1995:128) note in passing for Bulgarian. Native informants tell me that this is true for Polish and Russian, and other Slavic languages, too.

- (5) a. [vernij-at na žena si] muž Bulgarian
 truthful-the to wife poss refl man
 ‘the man truthful to his wife’
 b. der [stolze (*auf seine Frau)] Mann German
 the proud (of his wife) man

For a systematic search for T3, this state of affairs clearly entails that it has to embrace both, the VP-based clause structures, as well as the structures of complex noun phrases. An obvious question to ask is this: Given that head-initial and head-final structures may co-exist in a given language (see the continental West Germanic languages, with head final VP and AP, but head-initial NP and PP), is T3 (i.e. underspecified directionality) admissible for a *subset* of categories only, with specified directionality for the other categories?

In other words, may a language be T3 for one complex category (e.g. NP) and strictly-headed (either head-initial or head-final) for another complex category (e.g. VP)? The answer is simple: We do not know yet. The pertinent typological data have not been assessed yet and (grammar) theoretical principles are grammar theoretical hypotheses. Empirical theories are principally not irrevocable, (un)fortunately.

Here is the theoretical background for the three types of phrase structuring in a nut-shell (see Haider (2010 ch.1); Haider (in press), ch. 3-5):

- i. Phrases are right-branching¹² and endocentric.
- ii. A dependent is licensed¹³ by the head in the *canonical direction*.
- iii. The alternative values for ‘*canonical direction*’ are {‘follow’, ‘precede’}, with {‘unspecified’} as the general underspecification option for binary featured values.

Clause (iii) is the source of three distinct types of phrase structure. (6a,b) is the head-*final* type for V° and N°, respectively; (6c,d) is the head-*initial* type. **T3 is the aggregate** of (6e,f) **plus** (6a,b,c,d). It is the result of ambi-directional headedness: For ZP in (6e), V is head-initial. For the higher arguments it is head-final. (6a) and (6c) are licit T3 verb phrases, too, with a uniform choice of the canonical directionality, just as in OV or VO, respectively.

- (6) a. [ZP V°], [YP [ZP V°]], [XP [YP [ZP V°]]; head-final structures
 b. [YP N°], [XP [YP N°]];
 c. [V° ZP], [V°_i [YP [-_i ZP]]], [XP [V°_i [YP [-_i ZP]]]]; head-initial structures
 d. [N° ZP], [N° [YP [-_i ZP]]];

¹¹ http://wals.info/languoid/lect/wals_code_bul

¹² The right-branching ‘axiom’ (i) and the concomitant exclusion of a left-branching architecture for a given phrase is motivated in chapters 1 and 2 of Haider (2012) as cognitive co-adaptation of grammar and parser.

¹³ A head *h* licenses a dependent phrase *P* \equiv_{Def} (a projection of) *h* and *P* *minimally* and *mutually c-command* each other (Haider 2010:29).

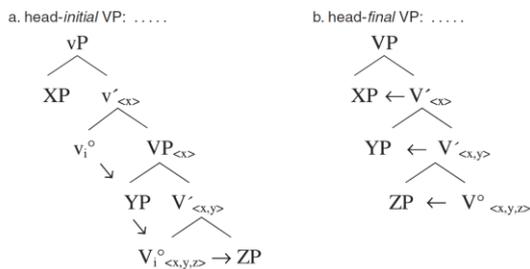
- e. [XP [YP [V° ZP]]]
- f. [YP [N° ZP]]

T3 structure subset

It is not surprising that for descriptive linguists, T3 structures may appear as an instance of ‘anything goes’ (see footnote 9). This impression is misleading, however. The structural relations are far from ‘anything goes’. They are strictly right-branching, and directionality dependent relations (see edge effect, extraction out of preverbal constituents) clearly differ from string-identical head-initial structures, and the respective restrictions show where they are expected, as for instance Russian exemplifies (see (12), below).

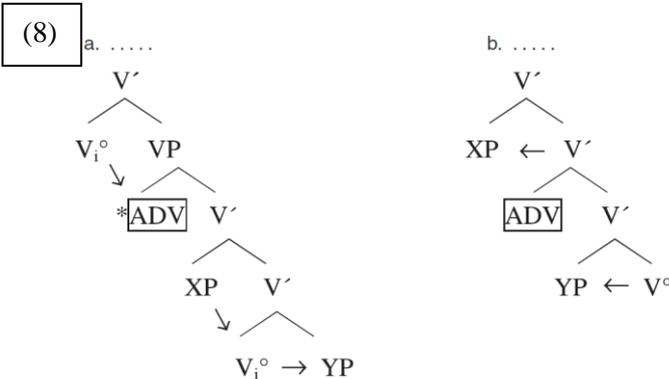
Compactness and *strict word order* in VO follow immediately from clause (ii). The very same principle, applied in two different structural contexts produces different outcomes. The multiple instantiation of the V position in a complex verb phrase in VO, induced by the mismatch of the canonical direction and the general direction of branching (7a), makes the VO verb phrase compact and the verb order rigid. In OV, the canonical directionality is congruent with the general branching direction, hence licensing becomes a relation between sister nodes. Since every complement phrase in an OV verb phrase has a projection of the verbal head as its sister node in the required direction, *mutual minimal c-command* is trivially fulfilled. Therefore the source for compactness and ‘rigid word order’ that is operative in VO is missing. Let me illustrate this with (7) and (8):

(7)



In (7b), the *canonical directionality* harmonizes with the *right-branching* structure. Hence, each dependent phrase is licensed by its sister node on the projection line of the head. In (7a), however, YP and V c-command each other by virtue of v_i c-commanding YP, and VP c-commanding the lower V_i , which is the base position of v_i . In sum, they *minimally* mutually c-command each other.

It is *the minimal & mutual c-command* requirement that bans interveners in VO, but admits them in OV. As a consequence, the VO phrase becomes compact. (8) illustrates the contexts sketched in (7) with an intervening element, as for instance an adverb.



In (8a), the head-initial phrase, an intervener destroys the *minimal c-command* relation between V_i and XP. By the same token, an adverbial in between XP and YP would destroy the minimality relation between XP and the lower position of the verb. In the head-final Phrase

(b), an intervening adverb has no effect since the identification relation holds between XP and its sister V', or YP and its sister V'. In (8a) this does not work because the sister node V' is not on the canonical side for a head-*initial* architecture.

This explains the *compactness* property of head-initial phrases. Compactness correlates with the ungrammaticality of *scrambling* in head-initial phrases. Scrambling would place the YP of (8a) into the position in between the higher V_i and XP. YP would become an intervener, just like the adverb in (8a).

Let us double check this with German data. German has a head-final VP but a head-initial NP. Hence, word order variation is admitted in VPs but not in NPs. German has a productive V-to-N conversion by means of nominalizing the infinitival form of the verb. This provides us with a minimal pair context. Compare (9) with (10):

- (9) a. [Decken an Obdachlose (*kostenlos*) verteilen]_{VP} (not compact)
blankets to homeless (for free) distribute
- b. [an Obdachlose_i Decken e_i (*kostenlos*) verteilen]_{VP} (scrambling)
to homeless blankets (for free) distribute
- c. [an Obdachlose öfter (*als erwartet war*) Decken verteilen]_{VP} (no edge-effect)
to homeless more-often (than expected was) distribute
- (10) a. das [Verteilen (**im Winter*) von Decken an Obdachlose]_{NP} (compact)
the distribut(ing) (in winter) of blankets to homeless
- b. das Verteilen im Winter
the distribution in winter
- c. [das Verteilen an Obdachlose_i ??von/*der_{Gen.} Decken e_i]_{NP} (no scrambling)
the distribut(ing) to homeless of/the blankets
- d. das [so häufige (**wie nötig*) [Verteilen von Decken]_{NP}]_{NP} (edge effect)
the so often (as necessary) distribut(ing) of blankets

Evidently, *compactness* and word order *variation* (scrambling) are not holistic or language-dependent properties. They are properties that strictly correlate with the *position of the head* in a phrase.

As for T3, the ambi-directional licensing option produces a head-final and head-initial *portion* of a given phrase structure whenever the directionality is switched. The arrows in (11) indicate the directionality of identification. The lowest sub-tree [V ZP] is head-initial, and then directionality switches into head-final.

- (11) [XP ←[YP ←[V → ZP]]]

Since the lowest sub-tree is head-initial, it ought to behave like a head-initial (sub)constituent. So, an immediate prediction is the *compactness* of this head-initial sub-tree in (11). According to Bailyn (2002:282), Russian confirms this prediction:

- (12) a. Ja dumaju, čto Ivan často [celuet Mašu]_{VP} [čto [S-*adv*-[V - O]]]
I think that Ivan *often* kisses Mary
- b. *Ja dumaju, čto Ivan [celuet často Mašu]_{VP} *[čto [S-[V-*adv* - O]]]
I think that Ivan kisses *often* Mary

The expletive-subjects phenomenon (a supposed corollary of 'EPP' in generative diction) is in fact a collateral effect of the structural subject position necessary for, and defining, SVO lan-

guage. It is predictably missing in T3 and OV. This position follows from clause (ii). A pre-verbal VP-internal subject is *not* in the canonical directionality domain in VO (13a). Hence, an external functional head (13c) serves as licenser (Haider 2010: 69). In VO, the entire VP is a homogenous directionality domain (13b).

- (13) a. $[_{VP} DP_{Subj} [_{V'} V^{\circ} \rightarrow \dots]]$ SVO V-projection
 b. $[_{VP} DP_{Subj} \leftarrow [_{V'} \dots \leftarrow V^{\circ}]]$ SOV V-projection
 c. $[_{FP} DP_i [F^{\circ} \rightarrow [_{VP} \neg_i [_{V'} V^{\circ} \rightarrow \dots]]_{VP}]]$ external licensing in SVO

Russian (and other Slavic languages) confirms the prediction: no expletive subjects, no EPP effects. The facts are uncontroversial, the proposed explanations are not; see Perlmutter & Moore (2002). In sum, the cumulative evidence strongly militates against assigning languages like Russian to the VO type. This raises many questions that have not been answered satisfactorily.

2.3 The diachronic dynamics of T3 – the Germanic OV/VO split in a nutshell

The modern Germanic languages (with the exception of Yiddish) are all languages with a fixed directionality of heads. As for the VP, there is a group with strictly head-*initial* directionality (Germanic VO languages) and a group with head-*final* directionality for V° and A° (Germanic OV languages). This situation is the result of a change that went on for generations. The common ancestor language was neither OV nor VO; it was T3. Any of the old Germanic languages was T3. (14) lists representative examples from several Old Germanic languages (OE, older Nordic, Old High German) for the T3 property of placing the verb ‘amidst’ its nominal arguments:

- (14) a. Se mæssepreost sceal [mannum [*bodian* þone soþan geleafan]]_{VP} Old English
 the priest shall people preach the true belief (Ælet 2 (Wulfstan1) 175)
 b. hafer þu [þinu lidi [*jatat* þeim]]
 have you your help promised them Hróarsdóttir (2000)
 c. tãnne sie [búrg-réht [*scûofen* demo líute]]
 that they castle-shelter granted (to) the people Schallert (2006)

In the type 3 situation, the directionality of the verbal heads was un(der)specified. The primary change towards OV/VO has been the change from ‘un(der)specified’ (or flexible) to ‘specified’. The implementation of this change implies a decision on the concrete value of directionality. This choice by itself is a matter of chance. It is not externally determined. Any one of the two options is a feasible one. In this situation it is expected that both options find their implementation alternatively. Since the options are incompatible, the result is the split into two groups, with one of the two available variants as the new core grammars.

At first, this split has not been strongly manifest, since the outputs of the two grammars have been weakly equivalent for big enough a set of utterances. On the one hand, one could easily avoid optional variants of the old setting that were incompatible with the new one. On the other hand the split coincided with the development of V2, that is, the grammaticalization of fronting the finite Verb. Before, fronting was merely an option of a T3 grammar.

Once V2 became grammaticalized, the combination with T3 produced systematically ambiguous patterns. The fronted verb could be related to several alternative base positions, namely

the base positions of a T3 VP. Fixing the verb position was a means of structural ambiguity reduction. Fixing the head position meant a change from the underspecified directionality of T3 to a specified directionality of either head-initial or head-final. Both options have found their implementations, and a dialect split was the result.

The seed for the *OV branch* were variants that preferred the clause final subset of T3 (with verb clustering and order variation in the cluster). The *VO branch* developed from variants with predominant fronting, an option that is alive even within OV in the Alemannic languages (see Schallert 2012:136), known under the misleading term ‘verb projection raising’¹⁴.

In the Indo-European family, this split is unique. Latin, for instance, is T3,¹⁵ but all of its successor languages in the Romance family are VO. The Slavic languages have remained in their T3 grammar habitat. Only the Germanic family produced a VO/OV split. It is not accidental that this fact coincides with another singularity of this family. This language is the only family that at the same time developed the V2 property. Indeed, V2 was essential for making the original T3 patterns congruent with the novel OV + V2 patterns. Otherwise, the Germanic languages would have ended up as VO languages like English, or the Romance languages.

What is still missing in the diachronic investigation of Germanic languages is a systematic, cross-linguistic investigation of the correlations between the serialization patterns of verbs and objects on the one hand and the serialization patterns of verbs and (quasi-)auxiliaries on the other hand in as great a detail as this has been done for English. These investigations are needed for the differentiated factorization of the superimposed factors of verbal serialization.

Except for Old English, the well-analysed data basis for the theoretic modelling of the diachronic processes is still small. Ideally, we would like to have for each Germanic language as thoroughly analysed and assessed a picture as we have now for Old and Middle English, thanks to the cooperation of philologists and theoreticians, and thanks to the incarnation of these diverse competences even in individual’s professional competences (see Fischer et als. 2000, and the core literature cited there).

In general, this account, viz. from T3 to V2 plus OV or VO, raises many intriguing research questions for diachronic syntax. An immediate question is the question of the *drift*. Is the change from T3 to VO (and in other cases to OV) a one-way channel? Obviously, VO can be arrived at by the grammaticalization of a subset of the T3 patterns. In other words, can a language only change from *underspecified* to *fixed* directionality, or is the inverse a possible change, too? Could an OV language change into a T3 language for instance by reanalysis of extraposition, when extraposition patterns are reanalysed as base orders with movement of the verb instead? At the moment, scarcity of data prevents a clear answer for these questions.

¹⁴ In fact, it is not V-projection raising to the *right*; it is V-positioning to the *left*.

¹⁵ Here is an example for the typical T3 pattern (i), next the OV (ii) and a ‘head-initial’ pattern (iii) :

i. virtus [...] hominem <i>iungit</i> deo	[Cicero Acad. 2,139]
ii. Caesar singulis legionibus singulos legatos et quaestorem <i>praefecit</i>	[Caesar, Bell. Gall. 1,52]
iii. Nimirum <i>dabit</i> haec Thais mihi magnum malum	[Terentius Eun. 508]

Thanks to Thomas Lindner for providing me with this sample.

2.4 Profiling T3 in comparison to OV and VO

Presently, the set of profiling traits for the empirical assessment of the three types of phrase structuring are those listed in the table above **plus** a set of additional ones, presented and tested on Germanic languages in Haider (2010) and Haider (2012). Note that these properties have a single grammatical source, namely the directionality of licensing. This is the single parameter that account for a cascade of differences in an otherwise uniform setting of grammar theory.

Properties that distinguish T3 from VO include:

- ◆ *‘Remnant-VP’ topicalization*: Unlike in VO, but just like in OV, VP topicalization may strand arguments that belong to the VP. In VO, VP topicalization must encompass the entire VP, that is, the verb and all of its arguments.¹⁶
- ◆ *Scope properties* of pre- and postverbal quantifiers. If a T3 language was a VO language with fronting of phrases across the verb, scope ambiguity is predicted. If the T3 hypothesis is correct, scope between two scope sensitive (‘fronted’) elements is predicted to be unambiguous¹⁷ rather than ambiguous (as under the VO hypothesis).
- ◆ *Wh-in-situ constructions* (if applicable): s. the discussion of ‘superiority’ in section 1, example (1). T3 languages are predicted to violate superiority. VO languages are obedient.
- ◆ *Subject-object asymmetries* for any kind of long distance extraction phenomenon: In SVO languages, extraction out of preverbal phrases is ungrammatical, in T3 and OV it is not. The testing ground is a set of constructions, all of which involve a phrase fronted to the clause-initial position, if the given language is a ‘fronting’ language: formation of direct and indirect questions, relative clauses, comparative clauses, etc.
- ◆ *Clause union effects* in OV and in T3: Unlike VO, T3 and OV have a *verb clustering* option that produces clause-union effects. For OV, Clustering is the only option.
- ◆ *Impersonal constructions*: This is a corollary of the *obligatory subject* condition. Unlike VO, there is no (need for an) obligatory structural subject position in OV and T3. This leaves room for impersonal constructions (without expletive subjects).

Establishing, substantiating and precisely characterizing T3 is likely to have a far-reaching and long-lasting impact both on theoretical syntax as well as on typological syntax:

First, grammar theory will see a breakthrough towards an explanatorily adequate coverage of a core issue, namely the precise understanding of the connections between word order patterns and phrase structures. T3 languages have been obstacles on this way since they appear to be highly exceptional VO or OV languages, respectively, depending on the vantage point. Our grammar theory is not satisfactory as long as we are not able to reliably predict what must be the case in a given language when the language is VO, or OV, or T3. The level of understand-

¹⁶ Here are examples from English and German:

- i. He said, he would show her his stamp collection, and [shown her his stamp collection]_{VP} he has
- ii.*He said he would show his guests his stamp collection, but [shown his guests] he has only part of it
- iii. [Seinen Gästen gezeigt]_{VP} hat er aber nur einen Teil seiner Sammlung

¹⁷ Scope is computed either on the surface position or by means of traces at the base position; see Aoun & Li (1993), Frey (1993).

ing of the ways languages can be structured that we want to achieve calls for a predictive theory of the order-to-structure relation.

Second, syntactic typology will benefit from a well-structured type-space that correlates surface properties (word order) with structural properties and provides enhanced predictive power. It improves the precision of the grammatical tools for typological investigations.

2.5 Outlook

Grammar theory and typology are suffering from ignoring each other. Grammar theory is vastly underdetermined by the presently contemplated data and typology lacks grammar theoretical underpinning and a *predictive* heuristics that is provided by grammar theory.

Linguistics is still in the inauspicious situation that the *theoretical* branch (grammar theory), which is obviously in need of an *experimental* companion (parallel to other, more mature branches of science, as for instance theoretical and experimental biology/chemistry/physics) ignores the experimental camps. In the present day situation, a theoretical linguist is not obliged to put to test¹⁸ a novel, *introspectively* backed claim in an experiment that produces clear-cut and decisive data. This is identical with the situation of psychology at the end of the 19th century that Wundt (1888) characterized as follows:

“It is totally in the hands of the psychologists [here: linguists]_{HH} to take care that these defects disappear more and more. The only thing they have to do is to seize the experimental method.”¹⁹

The scientific community of the grammar theory camp seems to be content with complex arguments that are meant to show that properties of a small sample of sentences from an even smaller sample of languages follow from a set of highly intricate assumptions.²⁰

- Manifold and easily accessible counterevidence is habitually neglected (see the present day treatment of OV languages in a generative framework as a framework that has proved successful for VO languages; Haider 2010, ch. 2).
- The indispensable need of providing *independent evidence* for novel theoretical proposals has been replaced by a weak *verificationist attitude*: It is apparently felt to be enough if one is able to adduce some data for a given proposal that fit into the given mainstream version, and that (some properties of the sample set of) data follow. Verification does not prove anything, however. This is a commonplace in the theory of science. Falsification is the crucial issue. If a novel proposal fails when applied to independent facts that the proposal ought to cover, it must be deemed wrong. On the other hand, if a proposal is basically correct, it is expected to correctly apply to a lot of independent data as well. The rule must be that at least some of them have to be identified. This had been standard in the early days of Generative grammar.

¹⁸ Or tell the experimenters *how* and to *what extent* it can be put to test.

¹⁹ „Es ist ganz in die Hand der Psychologen gegeben, dafür zu sorgen, dass diese Fehler mehr und mehr ganz verschwinden. Es ist dazu nur das eine nötig daß sie [...] sich der experimentellen Methode [...] bemächtigen.“

²⁰ Not every observer formulates his discontent as squarely as Liebermann (2007:435): “In short [...] the linguistic enterprise, like the Ptolemaic astronomical theory, will in time be regarded as fruitless an exercise in logic and disjoint from reality.”

- What the *theory camp* needs is a detailed and typologically valid data bank of cross-linguistic data assessed in a theory guided manner.
- What the *typology camp* needs is a *productive* theory framework that lifts the prevailing hunter & gatherers attitude to the level of a full-fledged experimental division of linguistic theory building that applies theoretical heuristics for discovering and assessing cross-linguistic data. Theories are temporary provisional maps for exploring an unexplored territory in the search for *specific* answers to *specific* questions. As in biology, gathering and classification is but an essential intermediate step. The break-through came from theoreticians. Without Darwin and without molecular biology, Carl von Linné's classifications would merely serve as an option for a systematic presentation in a scientific collection.

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