

CHAPTER III

STATEMENT OF THE PROBLEM AND THE PROPOSED APPROACHA method for statistical count of phrase structure

The complexity of sentence structure can be measured in a number of ways. The number and nature of the association between the different semantic units or of the syntactic devices employed can be studied. One obvious way is to measure the length of the sentence in terms of a variable like syllable. In Chapter II we have described some studies undertaken along this line. We have extended the scope of this approach to the maximum by considering length in terms of two dimensions : the horizontal and the vertical. A horizontal (linear) expansion takes place when the speaker or writer chooses in the place of one slot several slots of equivalent grammatical status. A transitive verb for instance is followed by a noun. If however the author chooses to use several noun phrases instead of just one, he has then expanded the phrase horizontally. Grammatically a single noun phrase would have satisfied the valence of the transitive verb. All duplication rules of the type N --- NN are of this category.

In transcribing phrase structure we therefore first of all determine what slots are to be considered basic to the verb in the main sentence. (We take it for granted that a

person who understands a sentence can always recognize the verb in the sentence if he has some elementary training in grammar). Apart from the slots which are obligatory to the verb like noun phrase in accusative case, noun phrase in dative case etc, we have also taken one adverbial as essential to the sentence. Where a bound adverbial occurs, the other adverbials, if any, are regarded as duplications of the slot. Where there is no bound adverbial, one free adverbial, if present, is taken as part of the basic sentence and left out of the count. The other adverbials would then be the result of applying the rule A --- AA.

Once the number of basic slots has been determined, the sentence is further analyzed to see how each slot has been expanded and filled. A noun slot for instance needs a noun and a determiner for filling up the slot. All other additions are considered expansions. At each depth the following finite number of rules constitute the possibilities of expanding a slot by means of a modifier :

- 1 A—A(A) the expansion of an adjective by an adverb
- 2 A—A(O) an adjective modified by a clause
- 3 A—A(P) an adjective modified by a prepositional
- 4 G—G(A) a genitive noun modified by an adjective
- 5 G—G(G) a genitive noun modified by a genitive noun
- 6 G—G(P) a genitive expanded by a prepositional
- 7 G—G(R) a genitive by a relative clause

- 8 G—G(O) a genitive by a minor clause
- 9 G—G(I) a genitive by an infinitive
- 10 N—N(A) a noun by an adjective
- 11 N—N(G) a noun by a genitive
- 12 N—N(I) a noun by an infinitive
- 13 N—N(N) a noun by a noun
- 14 N—N(O) a noun by a minorclause other than relative
- 15 N—N(R) a noun by a relative clause
- 16 N—N(P) a noun by a prepositional
- 17 I—I(A) Infinitive by an adverb
- 18 I—I(G) Infinitive by a genitive
- 19 I—I(N) Infinitive by a noun (other than genitive)
- 20 I—I(P) Infinitive by a prepositional
- 21 O—O(O) a minor clause by a minor clause
- 22 R—R(R) a relative clause by a clause
- 23 V—V(O) a verb by a minor clause (V = main verb)
- 24 V—V(R) a verb by a relative (V = main verb)
- 25 P—P(A) a preposition by an adjective
- 26 P—P(N) a preposition by a noun
- 27 P—P(O) a preposition by a minor clause
- 28 P—P(P) a preposition by a preposition
- 29 A—A(N) an adjective by a noun
- 30 G—G(N) a genitive by a noun
- 31 N—N(S) a noun by a sentence
- 32 S—S(A) a sentence by an adjective
- 33 A—AA doubling of the adjective

- 34 G—GG doubling of the genitive
 35 I—II doubling of the infinitive
 36 N—NN doubling of the noun
 37 O—OO doubling of the minor clause
 38 P—PP doubling of the preposition
 39 R—RR doubling of the relative clause
 40 V—VV doubling of the verb

(Adjective includes also adverb as no formal distinction has been made between them)

Of these the rules 9 (G—G(I), 18 (I—I(G) and 27 (P—P(O) were not evident in any of the samples although theoretically there is no bar for the occurrence of such constructions. N—N(I) (Eg. die Kunst zu schweigen) (the art to keep silent) is a possible construction and hence with the noun in the genitive case also it should be possible to make a construction. Similarly for 18, if the verb of the infinitive governs the genitive case the rule will follow. Verbs governing the genitive case however do exist. 27 is slightly in a different category. A preposition is expanded most frequently by a noun, but it can also be expanded by a prepositional phrase : bis in die Nacht. If the place of the noun can be taken by a prepositional phrase, one can argue, why can't it be taken by a clause. We do have object and subject clauses which fill noun slots. For this reason provision was made for the rule, but in actual count it did

not turn up. Rule 31 (N—N(S)) was originally provided to symbolize the introduction of direct speech in the sentence, but subsequently it was decided to treat such direct quotes as minor clauses without a conjunction.¹⁷³

The depth of each expansion was determined according to the level of dependency. The first depth was reserved for the reduplication rules :

A—AA, N—MN etc. For instance He walked out slowly and calmly would give us the adverbial expansion slowly and calmly. The adverbial slot has been doubled and then filled by two adverbs. At deeper levels reduplication was counted on a par with the dependent attributes filling up the duplicated slots. For instance the phrase

in a fit of anger, and frustration
will give the expansion in a fit P(N

of anger (G

and frustration (G)

= P(N(GG))

P	(N	(G	G))
1	2	1	0				

<u>Depths :</u>	1 2	3
	- 26	11,34

¹⁷³ Weiss (286) has shown that narrative sentences and spoken sentences show different statistical distribution.



The first depth is vacant because there is only one adverbial PP. At the second depth the rule applied is P—P(N) i.e. 26. At the third depth the noun phrase is expanded by a genitive (in the German language) followed by another genitive. Hence we have two rules N—N(G) and G—GG. Both these rules are accorded the same depth.

After the formulae were written down, they were punched on cards, verified and fed into the computer along with the program for being resolved into various rules and counted.

The first step in the program was to determine the number of parentheses and check if the numbers of left and right parenthesis were equal. Otherwise an error was diagnosed. The next step was to check the number of plus signs if any and register their locations. The analysis of the rules started with the innermost plus pairs, if there were any. After the plus-bracketed portions were analysed the formula outside the plus signs was taken up.

The subroutine always started with the innermost bracket. Suppose we had the formula

1	2	3	4	3	2	1	0					
P	(N	(P	(N	(A))))
1	2	3	4	5	6	7	8	9	10	11	12	13

The subroutine would start with the portion

N	(A)
7	8	9	10

After this was compared with the rules and the relevant information stored, the left parenthesis at position 8 was changed into a right parenthesis by another subroutine, giving

.....P (N) A).....
 5 6 7 8 9 10

This made P(N) the innermost bracket and the subroutine repeated the analysis with this part of the formula. The numbers on the top 1,2,3,4,3,2,1,0 indicate the locations of the depths according to left parenthesis. The numbers on the right parentheses are the difference between the number of left parentheses and right parentheses at each successive occurrence of a parenthesis. Once all the rules had been analysed the formula looked like :

P) N) P) N) A)))).

The rules were then arranged at each depth according to increasing order of magnitude and the results were finally printed.¹⁷⁴

¹⁷⁴ Programming for this aspect of the work was done mainly by Mr. H.M.Dannhauer of the I Physics Institute of the Technical University of Aachen, to whom sincere thanks are due.

Some problems in determining phrase-structure

Parenthetical and quasi-parenthetical expressions

Expressions which stand beyond the framework of the sentence are usually classified under four headings as :

Interjektion : zum Teufel !

Anredenominativ : Mein Sohn

Absoluter Nominativ : Der Fuerst fuhr durch das Schlosstor, ein Reiter voraus. (The prince drove through the castle gate, a rider in front).

der Schaltsatz: er verzweifelte - es ist furchtbar zu sagen - er verzweifelte an Wissenschaft und Fortschritt. (he despaired - it is frightful to say - he despaired of science and progress).

GLINZ (64, page 173) terms the second one "unverbundene Groessen" (free nominals) and the last one "eingeschobene Kernsaetze" (interposed kernel sentences) (ibid, page 436).

DUDEN considers the third one as a parenthesis presumably because of the nominative case used. Such constructions are however very similar to those where the accusative case is used instead of nominative :

er ging, ein Zettelchen in der Hand
(He went, a piece of paper in his hand)

GLINZ terms this an instance of "freie Setzung" (ibid, page 430) which one may translate as free adjuncts. His "freie Setzung" however encompasses all phrases which intonationally belong together as a unit, but whose syntactic status is midway between that of part of speech and sentence. DUDEN calls "freie Setzungen" in which participles figure "satzwertige Partizipien" (participials with character of a sentence) :

den Kopf zur Seite geneigt, sprach er 175
(the head held to the side, he spoke)

DUDEN brackets absolute accusatives even without the participle (ein Zettelchen in der Hand) along with satzwertige Partizipien for the reason that in such cases one can conceive of a participle being present : 'having', 'being'. (having a piece of paper in his hand or better still, holding a piece of paper in his hand). This criterion however can be applied also to the nominative construction cited above provided the accusative is used instead of the nominative ('having a rider in front, he went out of the castle'). The sole criterion applied by DUDEN then seems to be the use of the nominative case, i.e. the subject of the main clause and the subject of the absolute construction are different. In the case of the accusative constructions the subjects are

175 "den Kopf" is Accusative case.

same ('he went' and 'he had a piece of paper in his hand').
 DUDEN (1966, § 6100) gives the following example as an
 instance, where the construction is related to the object :

... indem sie (die Blutung) ihn zwang, ... sich
 wieder flach auf den Brettersitz hinzustrecken,
 das feuchte Tuch auf der Nase (Th.Mann)

(in that the bleeding compelled him, ... to stretch
 himself again flat on the wooden seat, the wet
 cloth on his nose)

Here actually a recursion has taken place :

the bleeding compelled him
he stretched himself on the seat
he held the wet cloth on his nose

The last sentence is modifying the second one and not the
 first one.

The bleeding compelled him
 he held the wet cloth on his nose

would give

The bleeding compelled him to hold the wet cloth on
 his nose

and not

The bleeding compelled him, the wet cloth on his nose,
 whereas we can have :

he stretched himself on the wooden seat, the wet cloth
 on his nose. (er streckte sich auf den Brettersitz
 hinzu, das feuchte Tuch auf der Nase).

Thus the absolute construction is not really "Objektbezogen" (related to the object), i.e. not directly, but only to the subject of the verb "hinstrecken" (stretch).

The relationship to the subject and the object is contrasted in the following examples :

Sie holte sie, bewaffnet mit einem Paket von belegtem Brot, ab.

(She picked her up, equipped with a packet of sandwiches)

Ich fand ihn bewaffnet mit einer Pistole.

(I found him armed with a pistol)

Ich begegnete ihm bewaffnet mit einer Pistole.

(I encountered him armed with a pistol).

In the first and third sentences the link is with the subject, while in the second the link is with the object, as the following relative clauses are permissible for one and three, but not for two :

Sie, die sich mit einem Paket bewaffnet hatte,
holte sie ab.

+ Ich, der ich mich mit einer Pistole bewaffnet
hatte, fand ihn ..

Ich, der ich mich mit einer Pistole bewaffnet hatte,
begegnete ihm.

The attribution to the object takes place if the valence of

the verb is not satisfied : I found him

I found him sleeping

I found him angry, in a great
hurry, etc.

In such cases the participial acts as a compliment to the verb and relates to the object.

The above arguments suggest that we have a case of transition from sentence-like participles to absolute accusatives to absolute nominatives. Whether the absolute accusative is to be treated like the absolute nominative as a parenthesis or not has to be examined in each individual case. Problems arise when the expression is clearly an adverbial of circumstance indicating modality (DUDEN, § 3205) (reality, validity, necessity, possibility, doubt, question, wish, affirmation, negation, restriction, expansion : perhaps, probably, of course, not, nevertheless, rather, but...) but does not belong to any part of speech. The following examples illustrate the nature of the problems which arise.

- 1) Das Vergnügen, oder eigentlich : die Heiterkeit, die ihre herrschaftliche Schönheit mir erregte, ...
(FELIX KRULL, page 294)
(The pleasure or actually : the exhilaration, which their majestic beauty excited in me,)

Oder (or) by itself allows alternate choice : you can have beer or wine. But along with eigentlich it implies "not Vergnuegen, but Heiterkeit". Instead of either A or B we have not A, but B. We can also say, not A, but actually B, so that eigentlich is a modifier to Heiterkeit, being an application of our rule N—N(A). An additional reason for considering it this way is the fact that we have : die eigentliche Heiterkeit. The interpunction on the other hand suggests treating eigentlich as quasi-parenthetical.

- 2) Im Gegenteil : jene innere Leere, die verschwommene Ungefuehrheit meiner Erinnerung vereinigten sich (FELIX KRULL, page 271)
 (on the contrary: that inner emptiness, the nebulous inexactitude of my remembrance united themselves)

Transposition test allows us to treat "im Gegenteil" as a parenthetical unit, justifying also the interpunction.

- 3) Andererseits aber kann eine solche verringemde Ansicht unzweifelhaft leicht bewirken, dass ...
 (FELIX KRULL, page 16)
 (but on the other hand such a belittling view can doubtless easily cause that..)

Here too andererseits has reference to the preceding sentence and the presence of aber has the effect of

emphasising this link beyond the sentence. + Semantically also the expression is similar to "im Gegenteil" (on the contrary), but because it occupies alone the Vorfeld, the field before the finite verb, it appears to have part of speech status within the sentence itself.

- 4) - abgesehen davon, dass ... (Felix Krull, page 16)
 (...- apart from the fact that ...)

The sentences connected by this restrictive conjunction, bereft of free adverbials and attributes are :

er wird in Traegheit versinken (he will sink into
 lethargy)

er wird sich die Wege zu Erfolgen abschneiden (he
 will cut off for himself the ways to success)

If the position of the clauses is interchanged we get :

abgesehen davon, dass er sich die Wege zu Erfolgen
 abschneiden wird, wird er in Traegheit versinken.

This is the usual subordinate clause construction. Hence we take "abgesehen davon, dass" as a clause introducer, although the minor clause has been put after the major one, as an after-thought.

+ Compare

Duden § 6390 points out that two independent clauses can frequently be joined together by means of relative clauses, but this would be acceptable only if both the clauses have

5) Vielleicht aber auch Juden - ich moechte mich nicht verbuergen. (Felix Krull, page 87)

(perhaps but also Jews - I wouldn't like to guarantee that)

GLINZ (64, page 173) has cited a sentence from Hesse as an example of "free nominals" (unverbundene Groessen):

Da sah ich denn zum ersten Mal die Schrecken und die Schoenheiten der Berge : tiefgerissene Schluchten, voll von Eis- und Schneewasser, gruenglasserne Gletscher, scheussliche Moraeenen und ueber allem wie eine Glocke hoch und rund der Himmel.

(Thereupon I saw for the first time the awesomeness and the beauty of the mountains : deeply furrowed ravines, full of ice and snow water, green-glassy glaciers, hideous moraines and above them all the heaven, high and round like a bell.)

GLINZ points out that the use of the nominative "der Himmel" instead of the accusative "den Himmel" (as object of 'saw') need not be taken as a grammatical mistake, but as a free

been sufficiently separated by using "but, then, too, etc": Sie machten einen Versuch, der aber restlos Scheiterte. (They made an attempt, which however completely failed.)

nominal outside the frame of preceding clause. The following transformation raises however doubts :

+ ...scheussliche Moraenen, und der ueber allen
wie eine Glocke hoch und rund bedeckende Himmel.

If the same pattern is used for Himmel, as for the foregoing nouns, then the nominative is a mistake. The accusative is acceptable :

... scheussliche Moraenen und den ueber allem
wie eine Glocke hoch und rund bedeckenen Himmel.

We have accordingly taken such strings of nominals subsequently added as expansions of the same noun slot. In

sie mochten spanisch-portugiesische Suedamerikaner,
Argentinier, Brasiliener sein; vielleicht aber auch
Juden

the expansion of the noun phrase is $N(A)NN N(A(A(A)))$

6) ...kurz, weil es unglaublich ist,... (FAUSTUS,
page 327)

(...in short, because it is unbelievable)

Expressions such as in short which indicate the beginning of fresh major clauses have been accepted as such.

7) ...sprach er mit geroteten Wangen und
erhitzten Augen, leicht fieberhaft, uebrigens
nicht in stroemendem Fluss, sondern die Worte
mehr hinwerfend (FAUSTUS, page 428)

(he spoke with reddened cheeks and heated eyes, slightly feverish, besides not in a streaming flow, but rather throwing out the words ...)

The transposition test :

er sprach uebrigens nicht in stroemendem Fluss
uebrigens sprach er nicht in stroemendem Fluss
 shows the adverb of modality does not belong to the unit "in stroemendem Fluss", although it introduces it.

8) hoechstens der alte Konsul Kroeger leise
 pruechte ... (BUDDENBROOKS, page 356)

The fixed position of hoechstens in front of der alte Konsul Kroeger establishes its dependency on the Noun Phrase. Hence it is treated as N(A).

Differentiated is also the behaviour of expressions introducing independent partial sentences.

9) ... die Araber, die Mauern mitgearbeitet,
 den Typ zu schaffen, der Sie erwartet -
 einen netten Zuschuss von Negerblut nicht zu
vergessen, von den vielen schwarzhaeutigen
 Sklaven her, die (FELIX KRULL, page 274)

(... the Arabs, the Moors have cooperated to create the type which awaits you, not to forget a nice addition of negro blood, from the many blackskinned slaves, who ...)

GLINZ (64, page 350) while discussing sentential infinitive constructions (Nennsetzungen) gives the example :

Der Text ist zu pruefen (the text is to be examined)

der zu pruefende Text (the text to be examined)

and also points out that the accusative is implied :

man soll den Text pruefen (one shall examine the text).⁺

Correspondingly our example should have been

ein netter Zuschuss von Negerblut ist nicht zu
vergessen.

Since in the infinitive sentence, the accusative has been used we have grounds for taking the following paraphrase as the basis :

wir haben einen netten Zuschuss von Negerblut
nicht zu vergessen

(we have not to forget a nice addition of negro
blood).

In English both the active and the passive are possible :

... , not to forget a nice addition of negro blood

... , a nice addition of negro blood not to be
forgotten.

+ DUDEN (§ 880) remarks that the construction corresponds to the passive formations of verbs which are paraphrased by means of modal verbs : In the above sentence using passive and modal verb instead of active, we may paraphrase :
der Text soll geprueft werden.

In German transposition will give in either case only accusative (corresponding to the active voice):

einen netten Zuschuss von Negerblut nicht zu vergessen

nicht zu vergessen einen netten Zuschuss von Negerblut

- 10) Solche Personen, am Rande bemerkt, sollten nicht sprechen. (FELIX KRULL, page 119)
(Such persons, (be it) observed marginally, should not speak).

Such expressions as am Rande bemerkt have been treated as parentheses. Since these often form conceptually one idiom questions arise as to whether one should break them up into smaller units. One could argue that in employing this phrase the choice is with respect to the whole idiom; either one opts for the whole phrase or not at all. With the particular word bemerkt there are also other combinations possible : nebenbei bemerkt, beilaeufig bemerkt, but the choice is very limited, so that the argument would still hold good. We have however broken up such phrases and transcribed their structure in the form of rules, as there are other innumerable phrases where the combinations have become fixed : in grosse Gefahr geraten (to run a great risk) and the decision to leave such phrases out of our counting might give a distorted picture.

Syntactic uncertainty

- 1) ... wiederholte ich ... meine Produktion von
neulich (FELIX KRULL, page 354)

(... I repeated my recent production)

Formally von neulich is preposition followed by adverb.
Functionally the whole phrase is a modifier to the noun
Produktion. This problem is much the same as whether a
certain expression is one word or consists of two words,
a problem often encountered in word counts. We have taken
the spacing as a criterion wherever the writing is unique.
The above phrase has accordingly been coded as N(P(A)).

- 2) Aber, herzuspringend, hatte ich zum Anfang
das gute Glueck, seinen Ball ... mit grosser
Praezision zurueckzugeben ... (FELIX KRULL,
page 357)

(but, springing towards it, I had in the
beginning the good luck to return his ball
with great accuracy).

The present participle in German can modify the verb or
the noun. Transposing we have :

Aber zum Anfang hatte ich, herzuspringend,
das gute Glueck ...

+ Aber herzuspringend, ich hatte zum Anfang ...

+ Aber ich, herzuspringend, hatte zum Anfang ...

The nonacceptability of the last two sentences induces us

to treat the participle as an expansion of the verb phrase. Theoretically however there is equally some justification for treating it as part of the noun phrase. Resolving the whole into base sentences we get :

Ich sprang den Ball herzu. (I sprang towards
the ball.)

Ich gab ihn mit grosser Praezision zurueck.
(I returned it with great precision.)

The linkings :

Ich sprang den Ball herzu und gab ...

Herzusingend, gab ich

are acceptable, while the following is unacceptable :

+ Nachdem ich den Ball herzu^{ge}sprungen war, gab ich ...

The conjunction und relates the two actions temporally without stressing the point. The conjunction nachdem separates the two events by a larger span of time and hence makes the sentence unacceptable. In any case the linking between the sentences is one of near-simultaneity and does not imply any greater connection to the verb in the main clause. It is also possible to say :

Der herzusingende Spieler gab den Ball

(The player, who jumped towards the ball,
returned it ...)

Herzusingend is here clearly an attribute to the noun

phrase and is best translated by means of the relative clause in English. The question arises : Is there any semantic difference between this sentence and the one where the uninflected form of the participle is used : *herauspringend gab ..* The question appears to be irresolvable.

3) Von der Decke herabhaengend, schwebte,
die Hautschwinger gespreitet, ein Flugsaurier.

(FELIX KRULL, page 317)

(Hanging from the ceiling a saurian swung,
the wings spread out)

Does the spreading of the wings refer to the swinging or to the saurian? We can transpose :

Von der Decke herabhaengend, die Hautschwinger gespreitet, schwebte ein Flugsaurier

Die Hautschwinger gespreitet, von der Decke
herabhaengend/^{schwebte} ein Flugsaurier.

+ Von der Decke herabhaengend, die Hautschwinger gespreitet, ein Flugsaurier schwebte.

Ein Flugsaurier, von der Decke herabhaengend,
die Hautschwinger gespreitet, schwebte.

Ein Flugsaurier, die Hautschwinger gespreitet,
schwebte ...

Syntactically the participial construction die Hautschwinger gespreitet can occur in the same preverbal slot as the

subject-noun, there are however restrictions relating to the order in which it can occur in the noun phrase. It cannot precede the noun which it modifies. Since on the other hand it can be separated from the noun phrase and put after the verb, it can equally well be taken as filling up an Adverbial slot of modality :

Wie schwebte die Flugsaurier? die Hautschwingen
gespreitet.

(How did the saurian swing? the wings spread out)

The deep structure can be represented by the sentences :

Ein Flugsaurier schwebte.

Seine Hautschwingen waren gespreitet.

This presupposes that Hautschwingen is in the nominative case. But then it would follow that the participial is an absolute construction, in which case it would have to stay outside the frame of the sentence :

Ein Flugsaurier schwebte, von der Decke

herabhaengend, die Hautschwingen gespreitet.

Since it can however be brought inside the frame of the sentence there is some justification to regard the deep structure as represented by :

Ein Flugsaurier schwebte.

Man hatte seine Hautschwingen gespreitet.

(One had spread out its wings.)

This however does not resolve the problem whether the

sentence, reduced as a participial phrase, is to be embedded as an adverbial or as a modifier to the noun phrase.¹⁷⁶

- 4) Lediglich der Hang und Drang seines Herzens zu jener beduerftigen Menge hat ihn zu seinen Kuensten geschickt gemacht. (FELIX KRULL, page 36)
 (Merely the inclination and urge of his heart to that needy crowd had made him able in his art)

The concept Rangattribut has been used by SCHULZ-GRIESBACH (158) to denote those adverbials which serve to stress some parts of speech and modify it in some manner without influencing the meaning of the parts of speech :

Gerade dich habe ich gesucht.

(Just you, I have been looking for).

¹⁷⁶ The sentences can be linked by means of the relative pronoun, dessen or the conjunction waehrend :

Ein Flugsaurier, dessen Hautschwingen man gespreitet hatte, schwebte.

Ein Flugsaurier, dessen Hautschwingen gespreitet waren, schwebte.

Ein Flugsaurier schwebte, waehrend seine Hautschwingen gespreitet waren.

The consequences of treating these as transition from the sentence to the participial are dealt with in detail later.

(vide page 204)

This sentence is compatible with the sentence without the attribute :

Ich habe dich gesucht.

(I have been looking for you).

The distinction between Rangattributes and free modals is not always clear. Consider :

I have of course done this job.

I have done this job only.

I have done merely the job.

The only result of adding of course to the sentence is an additional emphasis to the assertion, but only brings additional semantic information. It automatically implies, I have not done other jobs. The addition of merely also gives additional semantic information. But in the context : why did you do such a thing? or How could you do such a thing? the answer I have merely done my job can be taken as defensive assertion. The border between psychological information and semantic information is thus not always clear.

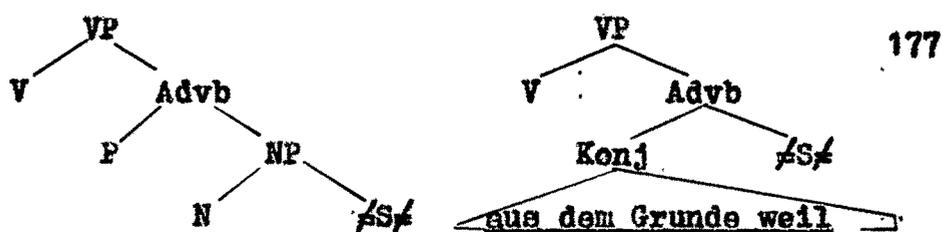
5) ... wofuer ich ... das zwiefache Beispiel ...
anfuehren will - aus dem Grunde, weil beide ...

Faelle ... Versuchungen darstellten ...

(FELIX KRULL, page 217/218)

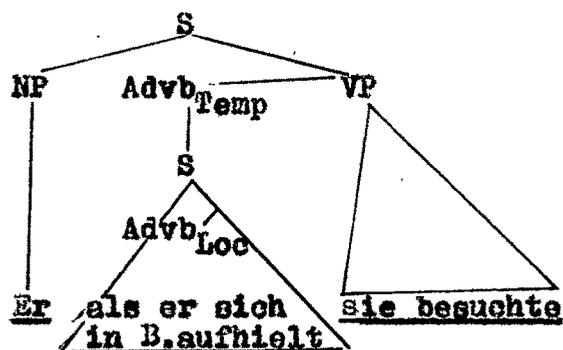
(for which I want to cite the twofold example - for the reason that both the cases represented temptations ...)

In English the attributive character of the minor clause is well brought out by the conjunction that indicating apposition. In German the conjunction weil can be purely causal, so that it is possible to delete the phrase aus dem Grunde without altering the meaning in any way. Treated as a causal sentence, there are two ways of regarding the phrase :



From the point of view of expansions, the more branchings we get, the truer would it represent the efforts of the author to make a construction complicated. We have accordingly coded the above construction as P(N(O)).

177 STEINITZ (171, page 187, note 10) gives the following tree :



We suggest branching the adverbial into a linking particle,

- 6) ... dass Sie in der einen so ueberzeugend
 wirken wie in der anderen
 (that you are in the one as convincingly
 effective as in the other)

As als and wie have typical linking function at the phrase level, they have been grouped along with the prepositions. Usually they are regarded as introducing elliptic constructions which can be expanded into minor clauses.¹⁷⁸ Such expansions raise however interesting problems. In the above case we have :

- (1) Sie wirken in der einen.... ueberzeugend.
 (matrix sentence)
- (2) Sie wirken in der anderen.... ueberzeugend.
 (constituent sentence)

When we introduce the word gleich (equally) to denote parity on comparison, the order has to be changed :

- (2) Sie wirken in der anderen ueberzeugend.
 (You are convincingly effective in the one)
- (1) Sie wirken in der einen gleich ueberzeugend.
 (You are equally convincingly effective in
 the other)

177.. (preposition or Conjunction) and an NP (or S), as this would give a uniform description. Deriving the minor clause from the Advb node directly would involve

The gleich can then be replaced by the discontinuous conjunction pair so wie. The main clause has to be the matrix sentence and as such it should occur first.

- 7) Sie kann zu den hoechsten Erfolgen und Wirkungen fuehren. (FELIX KRULL, page 17)
 (it can lead to the highest successes and reactions)

Following the Abstrichmethode we get

179

Sie kann zu fuehren

where the blank can be filled up by Erfolgen or Wirkungen.

There are two ways^{of} considering the expansion :

P(+NN+(A)) i.e. Sie kann fuehren, Adv = P(+NN+(A))

+NN+(A) i.e. Sie kann zu etwas fuehren. (etwas = something) = Erfolgen)

where the modifier hoechsten extends over both the nouns. The choice of the second will lead to the loss of one rule, namely rule No.26 P—P(N), and will also decrease the depth of the phrase. It will however be in conformity with the valence of the verb fuehren, as the sentence
 sie kann fuehren (it can lead)

177... treating $\neq S$ as of two types, one $\neq S$ for major clause and one $\neq S$ for the minor clause.

178 STEINITZ (171, page 59) Er bellte wie ein Hund
 (He barked like a dog.) Er bellte wie ein Hundbellt.
 (He barked like a dog barks.)

needs a complement. In all cases where a complement is strictly necessary we have started the expansions from the Noun phrase (+NN+(A)).

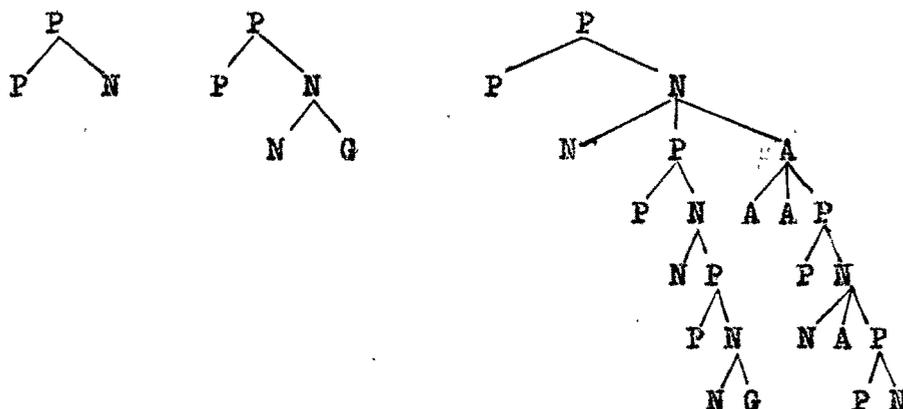
8) ... wo es das Tier fange und fresse, statt aus dem Mineralischen Leben zu saugen. (FELIX KRULL, page 267)

(... where it catches the animal and devours, instead of sucking life from the mineral matter).

Historically the correlate statt of the infinitive stands for "in the place of" that is to say, it is a prepositional phrase, so that we will have to begin the expansion with P(N). But synchronically seen statt zu (in stead of), ohne zu (without followed by gerund) and um zu (in order to) introduce infinitive phrases and are usually termed Satzwertige Infinitivsätze. We have accordingly taken them as part of the infinitive.

9) so dass ich... mich in einem Lächeln an das zuvor mit ihr Besprochene mit ihr finden konnte. (FELIX KRULL, page 368)

(so that I could find myself with her in a smile of remembrance at that discussed with her earlier).



- 11) Tatsaechlich hat das Erlebnis mich gezwungen,
ueber dieses Problem so angestrengt, so
instaendig nachzudenken, dass es mir schreckhafter
Weise zuweilen schien ... (DOKTOR FAUSTUS, pages
11/12)

(In fact the experience has compelled me to ponder
so strenuously, so energetically that it appeared
to me at times frightful ...)

The consecutive sentence can also be reframed :

Das Erlebnis hat mich gezwungen, ueber dieses
Problem angestrengt nachzudenken, so dass es mir ...

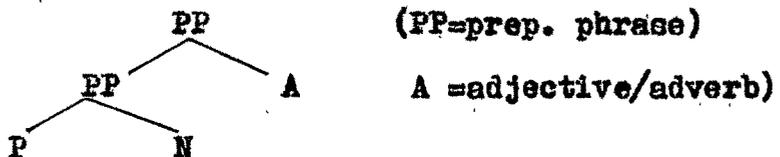
When the conjunction is written together, the minor clause
appears to depend directly on the main clause so that our
rule $V \rightarrow V(0)$ applies. When however so is placed before the
modifier angestrengt the minor clause can be considered as an
attribute to the modifier, giving the rule $A \rightarrow A(0)$.

Bracketed modifications

The inadequacy of phrase structure comes to the fore not so much with discontinuous elements, as with modifiers which relate to a whole phrase or clause. The following examples illustrate this problem :

fast bis an die Knoechel (almost upto the ankle)

Here fast modifies the whole phrase bis an die Knoechel. A way of describing this structure by tree diagram would be :



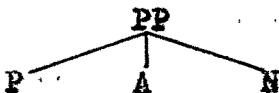
In rule form this would be : $PP \rightarrow PP + A$ (our rule $P \rightarrow P(A)$)

$PP \rightarrow P + N$ ($P \rightarrow P(N)$)

If the two rules are applied at the same level this would result in

$P(AN)$

corresponding to the tree



and if they are considered as at different levels, then we will get

$P(A(N))$

which implies that the modifier relates to the noun and not

to the prepositional phrase. But the situation we wish to describe is different. The prepositional phrase is being expanded into a preposition and a noun and this being kept as an entity, is developed further by an adjective. Since a tree can however either branch in one direction or converge in the other, but not do both at once in the same direction a linear representation of such a bracketed modification is impossible. We have as the next best solution adopted the following one. The phrase in the above case is written

$$+P(N)+A$$

where the plus sign indicates that the whole phrase is to be resolved first. This will give us the same result as we would have got if we had

$$P(AN).$$

A more complicated structure is exemplified by the following phrase :

Lediglich der Hang und Drang seines Herzens

zu jener beduerftigen Menge

Here Hang and Drang are modified by lediglich, seines Herzens and zu jener beduerftigen Menge. This is symbolized

as

$$+NN+(AGP(N(A)))$$

This problem does not seem to have received the attention of the transformational grammarians and would be worth an independent study.