Pragmatic Aspects of Scrambling and Topicalization in German:
A Centering Approach

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1 Introduction: German Syntax

German is a verb-final language, but in addition it is verb-second (V2), which means that in a root clause, the finite verb (main verb or auxiliary) moves into the second position in the clause (presumably the COMP position). This divides the clause into two parts: the position in front of the finite verb, the *Vorfeld* (VF), and the positions between the finite and non-finite verbs, the *Mittelfeld* (MF). This is summed up as follows:

(1) VF V-2 MF Verb-non-finite

The VF must contain exactly one constituent. It can be any element (an argument or an adjunct, or the non-finite verb). The MF contains the remaining arguments and adjuncts. Note that in the case of clauses with simple tensed verbs, the final position in the clause for the non-finte verb remains empty.

In the case of embedded clauses, the V-2 phenomenon does not occur (except in certain contexts in which there is no complementizer), and we get the word order shown below:

(2) (Subordinating Conjunction/Complementizer) MF Verb

From these basic syntactic facts, we get two distinct types of movement:

1. **Topicalization**: movement of a single constituent (argument/adjunct) into the VF.

2. **Scrambling**: movement of any number of constituents within the MF.

The formal and linguistic differences between these two types of movements have been discussed elsewhere (see, e.g., [Becker et al., 1991, Frank et al., 1992]). This paper will concentrate on the pragmatic differences. It is structured as follows: In the next section, I will set out some assumptions about the syntactic analyses used, and briefly describe the corpus on which this study is based. Traditional approaches to topicalization and scrambling will be reviewed in Section 3. Rules for a Centering account of German word order are presented in Section 4. A prediction is discussed in Section 5, and some of the many open questions are mentioned in Section 6. Finally, in Appendix A, an analysis of an excerpt of one of the corpus texts is given.

2 Two Methodological Points

2.1 Assumptions About Syntax

The topic of German word order is vast and complex, and there is a considerable and diverse body of literature. Furthermore, the theory of Centering is not yet in mature state, and no analyses of word order phenomena in other languages (such as topicalization in English) have been performed on which this paper could draw. It is therefore necessary to make several arbitrary decisions about which factors to hold constant in the investigation. I will list some syntactic assumptions made in this paper.

- Movement may be lexically conditioned ("psych verbs"). This fact will not be taken into account. Partly this omission can be excused on the grounds that if special groups of verbs, such as psych verbs, with special word order properties are to be defined, then such a definition will require an understanding of the general word-order facts.
- Given the previous point, throughout this paper, the terms "subject", "object" and "indirect object" (abbreviated SUBJ, DO and IO, resp.) will be used to refer to NPs in sentences in the nominative, accusative and dative case, resp.
- As is common, the base generated order is assumed to be SUBJ IO DO. In this I follow [Lenerz, 1977].
- I will make no prior assumption that there is a difference between the ordering between the subject and its objects, and the ordering among the objects. The same methodology will be applied to both orderings. Furthermore, as outlined in the previous section, I will use the term "topicalization" in reference to movement of the subject into topic position as well.
- It seems to be a fairly uncontroversial assumption that the orderof pronouns is fixed SUBBJ-DO-IO, independently of pragmatic or other factors.

2.2 The Corpus

This study has drawn to a certain extent on a corpus of several texts:

- [RN]: Article "Villen von der Stange" by Lilli Thurn und Taxis. *Frankfurter Allgmeine Zeitung*, April 8th, 1992, p.36.
- [KS]: Article "Ob Karl Schiller SPD wählt?" by Gerd Bucerius. *Die Zeit* (Overseas Edition), May 3rd, 1991.
- [RWF]: Interview "Der Tote Sohn": André Müller interviews Liselotte Eder, mother of director Rainer Werner Fassbinder. *Die Zeit* (Overseas Edition), May 1st, 1992, p.17.
- [BR]: Transcript of radio call-in show on consumer affairs: "Das Notizbuch. Annette Pfeiffer beantwortet Verbraucherfragen". Bayrischer Rundfunk, 2. Programm. March 30th, 1992, 10am - 11am.

Throughout the paper, in German sentences the finite verb in V2 position (if there is one) is printed in bold face to mark the separation between VF and MF.

3 "Traditional" Pragmatic Analyses

As a starting point for a Centering analysis, I will now discuss previous pragamtic analyses of the two movement types, topicalization and scrambling.

[Prince, 1981] (dealing with English and not in terms of Centering theory) makes the important observation that topicalization can have two distinct (in fact, incompatible) discourse functions, called Topicalization (TOP) and Yiddish-Movement (YM)[1]. The same appears to be true for German[2].

Consider (3).

(3) [BR; Moderator has explained that the carpet is safe if the caller has not experienced any health problems.

Caller starts her turn with:]

Also,	Beschwerden	**habe**	ich	keine
well	[health] complaints	have	I	none

well, I don't have any health complaints

The topicalized NP *Beschwerden*, has been previously evoked in the discourse; furthermore, if the tonically stressed element of the (remainder of the) utterance, *keine*, is replaced by a variable, we get an open proposition that represents old information. Thus, this sentence corresponds to Prince's Topicalization (TOP). To avoid confusion, I will call this topicalization "thematic topicalization"[3]. (Note that German quantifier stranding, as in (3), affords ample opportunity for prototypical TOP topicalizations.)

This use of topicalization should be compared to the following:

[1] Focus Movement (FM) is a special case of YM.

[2] Whether the details of the conditions are comparable to those of Topicalization and Yiddish-movement remain an open question.

[3] Note that this term does not implythat *the* theme has topicalized; it means that a thematic element has topicalized.

(4) [KS; in the previous two paragraphs, the author has discussed Schiller's adherence to a market economy, and then the existence of a right wing in the Social-Democratic Party (SPD) in the 40s. The next paragraph starts as follows (the "Godesberg Program" committed the SPD to a market economy):]

Die	wirtschaftlichen	Thesen	des Godesberger Programms	hat	Schiller	geliefert
the (ACC)	economic	theses	the Godesberg Program (GEN)	has	Schiller	supplied

und formuliert
and formulated
Schiller supplied and formulated the economic theses of the Godesberg Program

Eventhough *die wirtschaftlichen Thesen des Godesberger Programms* is related to the previous discussion, it has not been introduced into the discourse, nor is it in a salient set-relation to anything in the preceding discourse. Thus we do not have an instance of TOP. Instead, this case of topicalization patterns with Yiddish Movement (YM): the topicalized NP represents new information, and the open proposition represents "minimally generally known/plausible information" (economists who are politicians supply and formulate things such as theses for party platforms). I will call YM "rhematic topicalization".[4]

As for scrambling, it has frequently been suggested that the ordering in the MF is influenced or even determined by the theme/rheme (topic/comment) status of the arguments (and adjuncts). The idea goes back at least to Otto Behaghel at the turn of the century. More recently, the Prague School (see e.g. [Firbas, 1974]) has put these intuitions in a more precise form. A recent articulation for German can be found in [Lenerz, 1977]; I will take Lenerz as a starting point for the discussion in this paper.

4 Analysis

4.1 A First Descriptive Generalization

In a naive functionalist approach, the arguments (and perhaps adjuncts) would be ordered by, say, their givenness, or by their thematicity. Syntax would then determine the position of the verbs, but would have nothing to say about the positioning of the nominal and other complements of the verbs. Given the differences between the pragmatic functions of topicalization and scrambling (as seen in Section 3), such an approach must fail. If the two types of movement may have different pragmatic functions, then they should be distinguished at the syntactic level as well. This point is shown by the following minimal pair, taken from [RN]:

(5) a.

Medizin und Psychologie in ihrer Wechselwirkung zur Architektur	**interessierten**	ihn
medicine and psychology in their interrelation to architecture (NOM)	interested	him (ACC)

weit mehr	als	formale Aspekte
far more	than	formal aspects

[4] [Hoberg, 1981], in a corpus-based descriptive study, discovers the same distinction. She finds that rhematic topicalization is far less common overall, but particularly common in articles of the gutter press. It is also quite common in the [RN] text in Appendix A, from the culture section of a respected daily paper. The implications of this stylistic similarity are not immediately obvious.

Medicine and psychology in their interrelation to architecture interested him far more than formal aspects

b. ...obwohl ihn die kühnen Konstruktionen, die sich dahinter verbargen,
...eventhough him (ACC) the fearless constructions, that were concealed behind them,

viel mehr interessierten
much more interested

...eventhough the fearless constructions, that were concealed behind them, interested him much more

In both sentences, Richard Neutra is clearly the backward-looking center, as can be seen from the fairly uncontroversial analysis of the entire text (Appendix A). In both sentences the C_b is pronominalized in the accusative as the (surface) direct object of the verb, *interessieren.* In both cases, the object of his interests, the surface subject, has not been mentioned previously, and is not in a salient set-relation to evoked entities. While in (5b) the direct object has scrambled past the subject to end up in initial position in the subordinate clause, in (5a) the subject, not the object, has topicalized so that the surface order is the reverse of the order expected under a naive functional approach. In the same text, a second, very similar minimal pair can be found, based on the verb *beeinflussen* 'to influence' (sentences 5 and 21 in Appendix A).

We see that the generalization from these two pairs of sentences is not that the C_b is in the first position of the clause, but that it is in the first position of the MF. This position is called the "Wackernagel Position" (WP). We thus get as a first observation about the position of the C_b:

(6) The C_b is typically in the WP.

An inspection of the Neutra text shows that out of 62 segments, in 40 the C_b is in fact in the WP. 8 segments do not have overt C_bs. There are two further identifiable groups:

- Since the order of pronouns is fixed, if more than one argument is pronominalized, then a non-subject C_b will not be in the WP. There is one such segment, segment 12.
- When the C_b shifts, the new (or reintroduced) C_b often appears in the topic position. This is also the the case in the initial segment[5] Thus the topic position can serve as an way of marking a shift. The same may occur after a paragraph, which can be interpreted as a break in the continuity of the text.

We can thus refine Observation (6) as follows:

(7) The C_b is in the WP, unless the C_b of the previous utterance was not the same (or there was no previous segment), or syntactic ordering rules for pronouns prevent it.

At this point, we have described all but 3 of the placements of the C_b.

[5] In this text, the second sentence must be counted as the initial segment. The inversion appears to have taken place for stylistic reasons.

I will now turn to a more thorough examination of the two types of movement, starting with scrambling. For both movement types, I will attempt to give both constituent ordering rules, which represent the use of Centering during the generation process, and C_f ordering rules, which represent the use of Centering during understanding. Often, the generation aspect is neglected for the benefit of the understanding process. However, to fully understand how Centering can account for the word order facts, both types of rules must be given.

4.2 Scrambling

As mentioned above in Section 3, it is generally agreed that the theme/rheme hierarchy is decisive for movement within the MF. [Lenerz, 1977] formulates a "Theme-Rheme Condition" (p.63) as follows[6]:

(8) An NP may scramble over less rhematic NPs.

Before reformulating this rule in terms of Centering theory, I will first discuss the relationship between the theme/rheme distinction and the various types of centers. The theme clearly corresponds to the C_b: the theme, under a general definition, is what the current utterance is about; what utterances are about provides a link to previous discourse, since otherwise the text would be incoherent. The role of theC_b is precisely to provide such a link. We can therefore identify it with thw theme. This argument is merely suggestive, however, and the coincidence of C_b and theme will need further arguing (in a further paper). By extension, one may at first to assume that the C_f represents the theme/rheme hierarchy (or, in the Prague School terminology, the hierarchy of "communicative dynamism"). However, this is not the case, since the C_f is of course the list of *forward* looking centers, and as such determines (helps determine) the theme/rheme hierarchy of the *next* utterance. So the theme/rheme hierarchy of the current utterance, U_n, can be derived from the C_f of the previous utterance, U_{n-1}; more specifically, from those elements of $C_f(U_{n-1})$ that are realized in U_n. Supposedly centers of U_n that are not realized in U_{n-1} are more rhematic than any that are, though again, this point is not obvious, and it will be left to future work. (Notice that from this definition of the theme/rheme hierarchy for an utterance, the coincidence of C_b and theme follows as a corollary.) We can now reinterpret Lenerz's condition stated in (8) above as follows:

(9) An NP A in U_n that expresses a member of $C_f(U_{n-1})$ may scramble beyond an NP B iff one of the following two conditions hold:

1. B does not express a member of $C_f(U_{n-1})$.
2. B expresses a member of $C_f(U_{n-1})$ that is ranked lower than A.

Note that this rule is an underspecification: firstly, it does not affect NPs not realized in the previous utterance; secondly, it is only stated that such NPs *may* scramble. Here is an example of rule (9), from [KS]:

[6] This is not a literal translation. Lenerz formulates his rules in terms of linear precedence rather than in terms of movement in a syntactic/transformational sense.

(10) [In a paragraph about his political career. C_b of previous five utterance is KARL-SCHILLER (KS).]

Im Dezember 1961, in der „Mauerkrise", **bewog** ihn Willy Brandt als Wirtschaftssenator in den Berliner Senat einzutreten.

In December 1961, in the "wall-crisis", persuaded him (ACC) Willy Brandt (NOM) as secretary-of-the-economy in the Berlin government to-enter

In December 1961, during the crisis of the Berlin Wall, Willy Brandt persuaded him to join the Berlin government as secretary of the economy.

Here, WILLY-BRANDT is not a member of the previous utterance's C_f, so *ihn* (= KS) may scramble over it.

Now let us turn to the problem of ordering the C_f for elements of the MF. Here, the rule appears to be very simple:

(11) The C_f of an utterance is the list of constituents of the MF in that order.

Excluding the topic position for the time being, this rule makes the prediction that the constituent in the WP is the preferred center of the following utterance (if realized in it). This appears to be borne out:

(12) a. Frage: Glauben Sie, daß [eine solche Maßnahme] [der russischen Wirtschaft] helfen kann?

Question: Think you, that [a such measure] (NOM) [the Russian economy] (DAT) help can?

'Do you thin that such a measure can help the Russian economy?'

Antwort: Nein, sie **ist** viel zu primitiv.

Answer: No, she is much too primitive/simple-minded.

'No, it is much too primitive.'

b. Frage: Glauben Sie, daß [der russischen Wirtschaft] [eine solche Maßnahme] helfen kann?

Antwort: Nein, sie **ist** viel zu primitiv.

In these examples, the question contains a SUBJ NP and an IO NP, both of feminine gender. The answer contains a feminine nominative pronoun. In (12a), we get the reading that the proposed measure is too simple-minded (the German *primitiv* has this meaning), whereas in (12b), we get the reading that the economy is too primitive (to profit from such a measure). These readings are exactly as predicted by rule (11).

4.3 Topicalization

As explained in Section 3, there are distinct and incompatible pragmatic uses of topicalization: thematic elements can topicalize, as can rhematic elements. At first glance, one may be tempted to propose a rule under which any element may topicalize. However, it appears that a C_b may topicalize only if it is a subject[7]. Consider the following excerpt from [RWF]:

(13)
1. [André Müller asks:]
   Hat er sich damals schon für Film interessiert?
   Has he himself then already for film interested
   Was he already interested in film at that time?
   C_b = er = RWF (obvious from previous context)
   C_f = {RWF, FILM}
2. [Liselotte Eder (LE) answers:]
   RETAIN
   Und wie! Ich **hatte** ihm einen Märklinbaukasten gekauft und Fußballschuhe.
   And how! I had him (DAT) a toy-train-set bought and soccer-shoes
   You bet! I had bought him a toy train set and soccer shoes.
   C_b = RWF
   C_f = {LE, RWF, TOY-TRAIN-SET, SOCCER-SHOES}
3. CONTINUE
   Aber er **wollte** immer nur ins Kino.
   but he wanted always only into-the cinema
   But he only ever wanted to go to the cinema.
   C_b = *er* = RWF
   C_f = {RWF, CINEMA}

Clearly, the C_b does not shift to LE in sentence 2, since otherwise there would have to be two SHIFTS instead of one RETAIN. However, the following sentence would be infelicitous instead of sentence 2:

(14) Und wie! # Ihm hatte ich einen Märklinbaukasten gekauft und Fußballschuhe.

Eventhough *ihm* expresses the C_b, it may not be topicalized. Therefore, the following rule is proposed:

(15) The C_b element may topicalize if it is the subject[8]. Any other element may topicalize (under certain additional conditions still to be worked out).

More interesting is the question of the effect of topicalization on C_f. Here, we observe that the two types of topicalization, thematic topicalization and rhematic topicalization, have different effects. Consider first the following excerpt from [RWF]:

[7] [Prince, 1981] describes conditions on the different types of topicalization in English; presumably, similar condition hold for the types of topicalization in German. However, these probably cannot be expressed purely in terms of Centering theory. They may however explain the restriction described here on the scrambling of non-C_b elements.

[8] It seems that this is not correct if the subject is identified with the NP carrying nominative Case. Further research on the definition of this constraint is clearly needed.

(16) [Liselotte Eder speaks about a dream Ingrid Caven had about Fassbinder (RWF):]

1. (Ihr hatte geträumt,) er **habe** einen neuen Scheinwerfer für Filmaufnahmen erfunden.
   (Her (DAT) had dreamed,) he (NOM) had a new light for filming invented
   (She dreamt that) he had invented a new light for filming.
   C_b = RWF
   C_f = {RWF, NEW-LIGHT, FILMING}
2. RETAIN
   Den **trug** er auf der Stirn,
   Him (dem-ACC) carried he on the forehead (fem)
   He carried it on his forehead,
   C_b = RWF
   C_f = {NEW-LIGHT, RWF, RWF-FOREHEAD}
3. SMOOTH-SHIFT
   der **sah** aus wie ein Edelstein.
   he (demon NOM) looked like a gem
   it looked like a gem.
   C_b = der = NEW-LIGHT
   C_f = {NEW-LIGHT, GEM}

The demonstrative *der* 'he' in utterance U_3, which is its C_b, refers to the element in the topic position of the previous utterance U_2, not to its C_b in WP. We must conclude that thematic topicalizations add the topicalized element to the front of the C_f. (An alternative analysis of example (16) at first appears plausible: The C_b of U_2 is not RWF, but NEW-LIGHT. Then the transition from U_1 to U_2 would be a SMOOTH-SHIFT. The subsequent transition to U_3 would be a CONTINUE. While this at first glance appears to be a better analysis than the one given here, the problem is that after utterance U_2, the discourse is in no way committed to continue to center on NEW-LIGHT. The discourse would be perfectly felicitous if U_3 were, for instance, *Er war mit einen Bademantel bekleidet* 'He was wearing a bathrobe'. In this case, the alternate analysis would force us to interpret the discourse as involving two SMOOTH-SHIFTs, which would be counterintuitive.)

The case is different for rhematic topicalizations. Here, the topicalized element is not promoted on the C_f; instead, it appears that its position in the C_f is as if it had stayed in the MF. We may thus speak of "pragmatic reconstruction" in analogy to the reconstruction effects known from syntax: the syntactic movement is undone prior to processing.[9] This formulation leaves open the question to what position pragmatic reconstruction occurs: is it to the base position, or can it also be to a scrambled position in the MF? This question is left for further study, and we get the preliminary rule for C_f ordering in German clauses:

(17) If there is a topic and the topic is rhematic, topicalization is undone and the topic reconstructed to some position in the MF. If there is a topic and it is thematic, it is left in place. Then the

[9] In the corpus, there was no data that would show that a rhematic topic "reconstructs", since a number of factors would have to coincide to make the point. A contrived example can be found in (18) below.

C_f is composed of the arguments (and adjuncts) of the clause in the linear order in which they appear (after reconstruction, if applicable) in the utterance.

The two-pronged approach to topics makes the following prediction:

(18) a. U_1 Andreas **verbrachte** einige Zeit in Berlin.
Andreas spent some time in Berlin.
U_2 Er **führte** ein aufregendes Leben.
He lead an exciting life.
U_3 Max Ligeti, den grossen Impresario, **hatte** er eines Tages im Tiergarten kennengelernt.
Max Ligeti, the great impresario, he had met one day in the Tiergarten.
U_4 Er **emigrierte** alleredings bald darauf nach Schweden.
He emigrated, however, shortly afterwards to Sweden.

b. U_1 Andreas **verbrachte** einige Zeit in Berlin.
Andreas spent some time in Berlin.
U_2 Er **wurde** schnell ein guter Freund von Marlene Dietrich, Klaus Mann und Max Ligeti.
He quickly became good friends with Marlene Dietrich, Klaus Mann and Max Ligeti.
U_3 Max Ligeti, den grossen Impresario, **hatte** er eines Tages im Tiergarten kennengelernt.
Max Ligeti, the great impresario, he had met one day in the Tiergarten.
U_4 Er **emigrierte** alleredings bald darauf nach Schweden.
He emigrated, however, shortly afterwards to Sweden.

Since in (18a) the topic of U_3 is rhematic (since it has just been introduced), pragmatic reconstruction occurs, and we have $C_f(U_3) = \{$ANDREAS, LIGETI, TIERGARTEN$\}$. Since a CONTINUE is preferred over a SMOOTH-SHIFT, the subject pronoun in U_4 is predicted to refer to Andreas, which is confirmed by native speaker judgments. In (18b), however, the topic of U_3 is thematic, since Max Ligeti had been introduced in U_2. So we get $C_f(U_3) = \{$LIGETI, ANDREAS, TIERGARTEN$\}$, and the subject pronoun in U_4 is predicted to refer to Max Ligeti, which, again, is confirmed by native speaker judgments.

5 Prediction: Pronouns and Scrambling

Two proposals have been made concerning scrambling and pronouns:

1. It has been proposed that *only* pronouns may scramble [Lenerz, 1977]. However, there is a certain amount of agreement among syntacticians that this is wrong. For example, [Haider, 1991] claims that all 6 orderings of 3 non-pronominalized arguments are syntactically possible in German. Nonetheless, pronouns appear to scramble more freely: in the corpus investigated in the context of this study, there were no instances of full NPs scrambling.

2. Furthermore, it has been observed that full NPs may not scramble over pronouns. This observation appears to be true.

Can these observations be derived from centering theory? The first observation, that scrambling full NPs is somewhat odd, follows from rule (9). Since under this rule scrambled elements must have been on the C_f of the previous utterance, it should always be possible to pronominalize (except in cases of special emphasis or potential ambiguity). If they are not pronominalized, then the sentence would appear odd.

The second observation, that full NPs cannot be scrambled past pronouns, can also be derived. The co-specificationq of a pronoun must have been on the previous utterance's C_f. According to rule (9), the scrambled element must also have been on the previous utterance's C_f. Furthermore, the scrambled full NP must outrank the pronoun. This violates the pronoun rule (or an obvious extension of it) for the realization of centers.

Thus, one may conclude that the interaction between pronouns and full NPs can be explained on pragmatic grounds, and need not be postulated separately as a syntactic rule.

Note that this observation does not affect the need for a syntactic rule covering the order of pronouns amongst each other.

6 Open Questions and Problems

There are many open questions.

- In spoken language ([BR] and [RWF] in this corpus), the use of demonstratives is very common. Demonstratives appear to topicalize quite liberally: for example, in [BR] (ca. 6,000 words), there are 18 instances of OVS constructions, 14 of which have demonstratives as O. Topicalized demonstratives are obviously thematic. In contrast, there are 9 instances of scrambling, none of which involve demonstratives. The C_b is only very rarely a demonstrative.

  The question arises: what is the correlation between demonstratives and discourse structure, between demonstratives and word order, and between demonstratives and intonation? Can this distribution of demonstratives be predicted from a centering-based theory of demonstratives, and the rules outlined in this paper?

- What is the role of intonation? It is well known that rhematic elements receive stress in a sentence. It may be possible to argue that the movement characteristics are in fact derivable from the underlying intonation pattern of a German V2 sentence. The observation made in (7), namely that the C_b likes to be in WP, may be due to the fact that the WP position is the least stressed position of a sentence. Or maybe intonation is epiphenomenal.

- [Lenerz, 1977, p.105] points to an additional constraint on scrambling that has not been taken into account in this paper: it appears that NPs cannot scramble over NPs expressing intentional agents in the described situation. The distinctions involved are subtle; but they can be found in English as well:

  (19) a. I saw that the dancer pleased the critic

  b. I saw the dancer please the critic

In (19a), the dancer need not have intended the pleasing, whereas (19b) seems to imply intention on the part of the dancer. In German, we get the following contrast (this is Lenerz's example, slightly modified):

(20) a. Es würde [dem Kritiker] [dieser Tänzer] gefallen
it-clitic would the critic (DAT) [this dancer] (NOM) please
The critic would like this dancer

b. *Es will [dem Kritiker] [dieser Tänzer] gefallen
it-clitic would the critic (DAT) [this dancer] (NOM) please
Intended meaning: The dancer wants to please/appeal to the critic

In both sentences, the IO has been scrambled past the SUBJ. The *will* in (20b) forces the intentional-agent reading for the SUBJ, and the sentence is thus ruled out.

This factor should be incorporated into a Centering-based account. It would be interesting to compare it to the notion of "empathy" proposed for Japanese grammar, and used in connection with Centering in [Walker et al., 1990]. The two notions – intentional agent and speaker's empathy – appear to have some aspects in common.

A The Neutra Text

Text: "Villen von der Stange. Licht und Schatten: Zum Hundersten von Richard Neutra" (Villas from the rack. Light and Shade: on the centennial of Richard Neutra's birth) by Lili Thurn und Taxis. *Frankfurter Allgemeine Zeitung*, April 8, p.36 (Culture section).

Unmarked brackets deignate subject. The V-2 is in **boldface** (if there is one).

Text starts with 2 sentence quote by Neutra.

1. Entgenegen den Vorwürfen, [[er] habe nur Architektur für Millionäre produziert],
   Contrary to the reproaches, [(that) he only produced architecture for millionaires],
   Syntax: S V O
   C_b: er = Neutra
   C_f: {Neutra, reproaches, architecture for millionaires}
   CONTINUE (from Title)
2. galt [sein eigentliches Interesse] dem "physiologischen Raum".
   his actual interest was in "physiological space".
   Syntax: S O V
   C_b: sein = Neutra
   C_f: {Neutra, his actual interest, physiological space}
   CONTINUE
3. (Neutra), [der] heute vor hundert Jahren in Wien geboren wurde
   (Neutra), who today 100 years ago was born in Vienna
   Syntax: S-relpro Adj-temp Adj-loc V

C_b: der = Neutra
C_f: {today, today 100 years ago (?), Vienna}
CONTINUE

4. [Richard Joseph Neutra (1892 - 1970) (relative clause)] **suchte** nach dem idealen Rahmen für den Menschen, nach einer Architektur als psychoterapeutischem Mittel.
   Richard Joseph Neutra (1892 - 1970) (relative clause) searched for the ideal frame for human beings, for an architecture as psychotherapeutic means.
   Syntax: S (relative clause) V O
   C_b: Richard Joseph Neutra
   C_f: {Neutra, the dieal frame for human beings, human beings, an architecture as psychotherapeutic means, psychotherapeutic means}
   CONTINUE
5. [Wilhelm Wundts "physiologische Psychologie" wie auch die Bekanntschaft mit Sigmund Freud] **haben** Neutra sehr beeinflusst.
   Wilhelm Wundt's "physiological psychology" as well as the acquaintance with Sigmund Freud influenced Neutra a lot.
   Syntax: S V O(ACC)
   C_b: Neutra
   C_f: {Neutra, Wilhelm Wundt's "physiological psychology", Wilhelm Wundt, the acquaintance with Sigmund Freud, Sigmund Freud} **PRAGMATIC RECONSTRUCTION**
   CONTINUE
6. [Medizin und Psychologie in ihrer Wechselwirkung zur Architektur] **interessierten** ihn weit mehr als formale Aspekte.
   Medicine and psychology in their interrelation to architecture interested him far more than formal aspects.
   Syntax: S V O(Acc) Adj
   C_b: ihn = him (ACC) = Neutra
   C_f: {Neutra, Medicine, psychology, medicine and psychology in their interrelation to architecture, formal aspects} **PRAGMATIC RECONSTRUCTION**
   CONTINUE
7. [Charles Eames] **gehört** zu seinen Schülern.
   Charles Eames belongs to his students (is among his students).
   Syntax: S V PP
   C_b: seinen = his = Neutra
   C_f: {Neutra, Charles Eames, his students} **PRAGMATIC RECONSTRUCTION**
   CONTINUE
8. PARAGRAPH
   Von 1912 bis 1917 **studierte** [Neutra] bei Wagner und Loos am Wiener Polytechnikum
   From 1912 to 1917 Neutra studied with Wagner and Loos at the Vienna Polytechniacl University
   Syntax: Adj-temp V S Adj-loc
   C_b: Neutra
   C_f: {Neutra, Wagner, Loos, Vienna Polytechniacl University, Vienna}
   CONTINUE

9. und [*t*] **arbeitete** nebenher im Büro von Alfred Loos.
   and worked on the side in the office of Alfred Loos
   Syntax: (S) V Adj-loc
   C_b: t = Neutra
   C_f: {Neutra, office of Alfred Loos, Loos}
   CONTINUE
10. Dem Wien der überladenen Kulissenarchitektur **kehrte** [er] den Rücken
    On the Vienna of the overloaded theater set-architecture he turned his back
    Syntax: O(DAT) V S O(ACC)
    C_b: er = Neutra
    C_f: {Neutra, Vienna } **PRAGMATIC RECONSTRUCTION**
    CONTINUE
11. und [*t*] **nahm** in der Schweiz eine Stelle bei einem Landschaftsgärtner an.
    and accepted in Switzerland a position with a landscape architect
    Syntax: (S) V Adj-loc O(ACC) V-particle
    C_b: t = Neutra
    C_f: { }
    CONTINUE
12. Wie keinem anderen **gelang** [es] ihm deshalb, seine Häuser in Landschaften einzubeziehen.
    Like no one else he succeded in (it was succesful for him to...) integrate his houses into the landscape
    Syntax: Adj V_{matrix} S-clitic O(DAT), PRO O(ACC) Adj-loc V_{subord}
    C_b: ihm = him = Neutra
    C_f: {Neutra, his houses, the landscape }
    CONTINUE
13. [Rahmenlose Glasflächen, schwellenlose Übergänge von innen nach außen] **gaben** seiner Architektur größte Transparenz.
    Frameless glass planes, threshold-free transitions from inside to outside gave his architecture maximal transparency
    Syntax: S V O(DAT) O(ACC)
    C_b: seiner = his = Neutra's
    C_f: {Neutra, his architecture, Frameless glass planes, threshold-free transitions from inside to outside, inside, outside} **PRAGMATIC RECONSTRUCTION**
    CONTINUE
14. Indem [er] die weit vorstehenden Flachdächer von den Wandscheiben durch schmale Fensterbänder absetzte,
    Because he set off the flat roofs that stand out far from the wall planes by narrow strips of windows,
    Syntax: Subord-conj S O(ACC) Adj-loc V
    C_b: er = he = Neutra
    C_f: {Neutra, flat roofs, wall panes, window bands}
    CONTINUE

15. **scheinen** [seine Häuser] zu schweben,
    his houses seem to float
    Syntax: V-raising S V
    C_b: seine = his = Neutra
    C_f: {Neutra, his houses}
    SMOOTH-SHIFT
16. **erhalten** [sie] etwas immaterielles.
    they receive something immaterial
    Syntax: V S O(ACC)
    C_b: his houses
    C_f: {his houses, something immaterial}
    CONTINUE (from 11)
17. [Neutra] **ist** geprägt von Erich Mendelsohn und Frank Lloyd Wright,
    Neutra is marked by Erich Mendelsohn and Frank Lloyd Wright
    Syntax: S V-aux V PP
    C_b: Neutra
    C_f: {Neutra, Erich Mendelsohn, Frank Lloyd Wright}
    POP-CONTINUE (From 11)
18. für die [er] kurze Zeit gearbeitet hat,
    for whom he worked for a short time
    Syntax: PP-rel S Adj-temp V V-aux
    C_b: er = he = Neutra
    C_f: {Neutra, die = Mendelsohn & Wirght} **PRAGMATIC RECONSTRUCTION (of relative pronoun)**
    CONTINUE
19. ohne deren Stil zu adaptieren
    without adapting their (demonstrative) style
    Syntax: Conj-sub S(PRO) O(ACC) V
    C_b: PRO = Neutra
    C_f: {Neutra, deren = their = M & W}
    CONTINUE
20. [Einzig der ellipsenförmige Patio des Hauses für Josef von Sternberg (1936), das Auditorium des Orange Coast College (1957) oder das Lincoln Memorial Museum in Gettysburg (1960)] **erinnern** [$_{\text{Adj-manner}}$ mit ihren Rundungen in seinen sonst rechtwinkligen Entwürfen] an die expressionistische Formensprache Mendelsohns.
    Only the ellipsoid patio of the house for Josef von Sternberg (1936), the auditorium of the Orange Coast College (1957) or the Lincoln Memorial Museum in Gettysburg (1960) remind (one) with their rounded elements in his ususally rectangular designs of the expressionist language of forms of Mendelsohn.
    Syntax: S V Adj-manner PP
    C_b: seinen = his = Neutra
    C_f: {Neutra, ...} **PRAGMATIC RECONSTRUCTION**
    CONTINUE

21. Am stärksten **hat** ihn sicher [Adolf Loos] beeinflußt.
Most strongly he has certainly been influenced by Adolf Loos.
Syntax: Adj-manner Aux O(ACC) Adj-sent S V *SCRAMBLING*
C_b: ihn = him (ACC) = Neutra
C_f: {Neutra, Adolf Loos}
CONTINUE
22. [Neutras Werk] **ist** eine wenn auch eher ideele Weiterführung des Loos'schen Baugedankens.
Neutra's work is a (if somewhat idealized) continuation of the Loosian idea of building.
Syntax: S V-copula O
C_b: Neutra
C_f: {Neutra, Neutra's work, Loos, the Loosian idea of building, a continuation of the Loosian idea of building}
CONTINUE
PARAGRAPH
23. 1923 **ging** [er] mit großen Erwartungen nach New York
1923 he went with great expectations to New York
Syntax: Adj-temp V S Adj-manner Adj-loc
C_b: er = he = Neutra
C_f: {Neutra, great expectations, New York}
24. und [*t*] war im Anfang von den historischen Verkleidungen der Hochhäuser enttäuscht.
and was in the beginning disappointed by the historical disguises of the sky scrapers
Syntax:
C_b: t = Neutra
C_f: {Neutra, historical disguises of sky scrapers, the sky scrapers, New Yprk (?)}
CONTINUE
25. Die ersten Monate **mußte** [er] sich als Zeichner gotischer Fassadenelemente verdingen,
During the first months, he had to earn-his-living as a drawer of gothic façade elements
Syntax: Adj-temp V-aux S O(ACC-refl) PP V
C_b: er = he = Neutra
C_f: {Neutra, drawer of gothic façade elements, gothic façade elements}
CONTINUE
26. obwohl ihn [die kühnen Konstruktionen, die sich dahinter verbargen,] viel mehr interessierten.
eventhough the fearless constructions, that were concealed behind them, interested him much more
Syntax: Conj-sub O(ACC) S Adj-manner V ***SCRAMBLING***
C_b: ihn = him = Neutra
C_f: {Neutra, the façades of the sky scrapers, the fearless constructions concealed behind them}
CONTINUE
27. [Das Handbuch für amerikanische Architekten, "Sweets Catalogue", eine Art Ikea-Katalog für Bauelemente,] **war** [$_{\mathrm{Adj-bene}}$ für den Österreicher] die große Entdeckung.
The handbook for American architects, the "Sweets Catalogue", a sort of Ikea-catalog for construction elements, was the great discovery for the Austrian
Syntax: S V-copula Adj-bene O

C_b: den Österreicher = the Austrian = Neutra

C_f: {Neutra, the "Sweets Catalogue", Ikea-catalog, a great discovery} **PRAGMATIC RECONSTRUCTION**

CONTINUE

28. Damit **eröffneten** sich [ungeahnte konstruktive Möglichkeiten].

With that unimagined constructuve possibilities opened up

Syntax: Adj-manner V O(DAT-refl) S

C_b: $\emptyset$ = beneficiary = Neutra

C_f: {the "Sweets Catalogue", Neutra, unimagined constructuve possibilities }

RETAIN

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