COREFERENCE RULES DESCRIBED IN TERMS OF FUNCTIONAL SENTENCE

PERSPECTIVE (FSP)

Milan Bílý

Part I of this paper gives a survey of existing hypotheses (without

referring, however, to such works as Grinder and Postal (1971), Bres-

nan (1971), and Postal (1972b) which, in my opinion, just ´create´

theoretical problems in order to use them as arguments in the contro-

versy between interpretativists and supporters of generative seman-

tics); Part II shows a new way to formulate constraints on pronomina-

lization; Appendix A gives a short introduction to the theory of Func-

tional Sentence Perspective, which is generally unknown in the West

(except for some distorted fragments presented, for example, by Kuno

(1972b) and Hinds (1975a)); in Appendix B some problems concerning
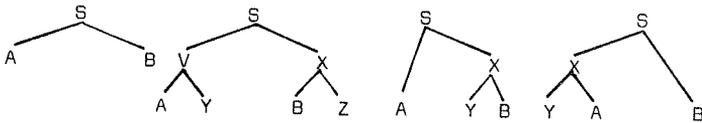
English reflexives are discussed.

Part I – Earlier Studies of ´Pronominalization´

The standard transformational theory of pronouns and reflexives (Lees

and Klima 1963, Chomsky 1965, Ross 1967, Langacker 1969) assumes that

pronouns originate as fully specified NPs identical to their antece-

dents (and their ´postcedents´) in deep structure. Transformations

change these NPs into pronouns on the basis of morphological identity

and intended coreference with other NPs. Thus a deep structure which

can be roughly represented as ´John$_3$ shaves John$_3$´ becomes ´John shaves

himself.´ (In Chomsky (1965) each NP has an associated index in deep

structure and two NPs are coreferential if they have the same index.)

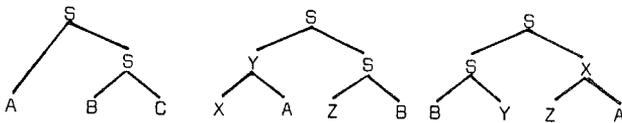The following constraints on 'pronominalization' are generally ac-
cepted:

I) NP^a may not be used to pronominalize NP^p if NP^a and NP^p are ele-
   ments of separate conjoined structures and NP^p precedes NP^a.

II) NP^a may pronominalize NP^p unless (1) NP^p precedes NP^a; and (2)
   NP^p commands NP^a.

(Langacker (1969, p. 167). Also Ross (1967) independently arrived
at a practically identical condition on 'backward pronominalization'.)
'Command' is a technical term used to indicate the role of 'depth' in
an embedded structure. Thus, the node A commands B, if a) neither A
nor B dominates the other and b) the S-node that most immediately do-
minates A also dominates B. In the following structures A commands B
and B commands A:

(The symbol 'S' always stands for a clause, the other symbols stand
for any other part of an 'S' than 'S'.)
But in the following structures only A commands B, B does not command
A:

Sentences (1) and (2) exemplify Constraint I; (3) – (6) exemplify Con-
straint II. (Asterisk-prefixed sentences are meant not to be able to ex-
press coreference between a pronoun and a NP, i.e. nothing is claimed

about their grammaticality. Nearly all example sentences are taken
from the authors quoted in the bibliography. Either the original sen-
tences are used or the sentence types – for example some sentences
have been changed so that certain semantic abnormalities may be avoid-
ed for the sake of naturalness.)

(1) Peter has a lot of talent and he should go far.

(2) *He has a lot of talent and Peter should go far.

(3) John left town after he robbed the bank.

(4) *He left town after John robbed the bank.

(5) After John robbed the bank, he left town.

(6) After he robbed the bank, John left town.

However, Constraints I and II cannot explain many facts. There have
been many attempts to mend these constraints. Lakoff (1968) showed
that 'backward pronominalization' from a subordinate clause to a
main clause (which is against Constraint II) is possible if the pro-
noun is not the subject of the main clause. Thus, it is possible to
say (at least for some speakers):
(A: Why didn't Peter defend himself?) B: They silenced him every
time Peter tried to speak.

Another (patently wrong) attempt was made by Kuno (1972a), using so-
called 'direct discourse analysis', to explain sentences like (7)
(with unstressed 'him'):
(7) *That John was the best boxer in the world was claimed by him.
The deep structure of (7) is said to be something which can be rough-
ly described as 'John claimed: I am the best boxer in the world'.
Since the subject of the embedded sentence is a pronoun from the be-
ginning, there is no possibility to realize it as 'John' and there-

fore it is not possible to derive the ungrammatical (7). Unfortunately we can find sentences like (8) — (10), which should be equally wrong according to 'direct discourse analysis' but which are not. The fact that (7) is correct with stressed 'him' makes things even worse.

(8) That John was the best boxer in the world was never claimed by him.

(9) That John was the best boxer in the world was loudly and repeatedly claimed by him.

(10) That John was the best boxer in the world was claimed by him but nobody would believe such nonsense.

Postal (1972a, p. 48) postulates a so-called Global Constraint on Pronominalization in order to be able to make the difference between sentences like (11), (12) and (13), (14).

(11) Who killed his wife?

(12) It was Peter who killed his wife.

(13) *Who did his wife kill?

(14) *It was Peter who his wife killed.

'The Wh Constraint

Mark as ill-formed any derivation in which:

a. there are two nominal constituents, A and B, in the input structure of a Wh Movement rule, where: (i) A is a pronoun, (ii) B is a wh form, (iii) A is to the left of B; and

b. the corresponding constituents of A and B in the output structure of the Wh Movement rule, call them A' and B' respectively, are aligned such that B' is to the left of A'; and

c. in the semantic representation, A and B (or, more precisely, their corresponding elements) are marked as stipulated coreferents."

However, there have been serious doubts as to whether there are any linguistic phenomena which need explanation in terms of a global constraint (e.g. Emonds 1973) and the global constraint on pronominalization in particular (Cole 1974). Besides, Cole (1974) shows that Postal's informants' judgements of his sentences are not at all fully representative for English speakers.

Another attempt was made by Postal (1971, p. 23) to save Constraint II with the following amendment: 'Backward pronominalization is banned <u>across</u> a copular verb of referential identity.' (emphasis in original). This restriction was motivated by the fact that there was no other way to prohibit 'pronominalization' in (15) while allowing it in (16):

(15) *What annoyed him was my punching Bill.

(16) It was my punching him that annoyed Bill.

Bickerton (1975) believes that Postal's constraint is incorrect as it would predict noncoreferentiality for (17). However, Postal would probably claim that the copula in (17) is 'a predicate set of inclusion' (as he did for 'The man who wrote to her was a friend of Mary's.'). But then it remains to draw a clear borderline between these two possible meanings of a copula, which can be rather difficult, at least in certain cases.

(17) My punching him was Bill's major gripe.

There are more other 'bad cases of pronominalization' for which Constraint II does not suffice (cf., for example, Jackendoff 1972, Kuno 1972b etc.).

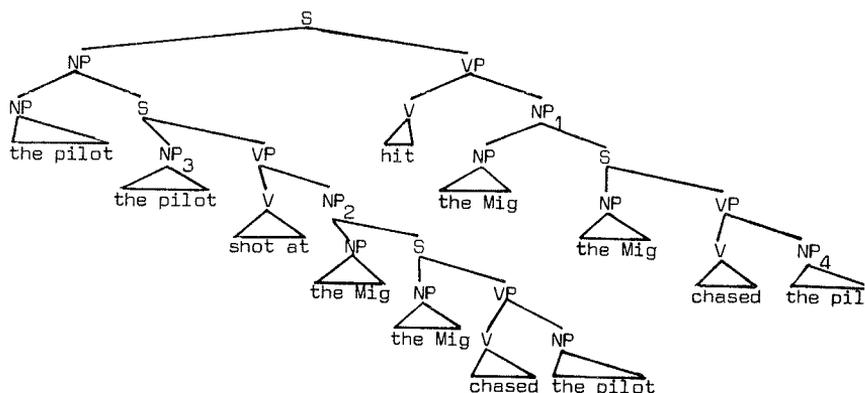As for the above-mentioned Constraint I, it has been neglected by

the majority of linguists. Only Postal (1971, p. 20) shows that one
has to distinguish between "true coordination, where the conjuncts
are, for instance, reversible without change of meaning, and pseudo-
conjunction . . .". This restricts the operation of Constraint I
radically, because even 'and' is very seldom a 'pure conjunct' with-
out any causal, temporal or other implications affecting reversibi-
lity. Our sentences (1) and (2) cannot, then, be explained with Con-
straint I either. There is still another problem — there do exist
structures of 'true coordination' where Constraint I should work but
it does not:

(18) His wife and the woman Peter is living with have just met.
(18) is okay for many (or a majority of) speakers. Hinds (1975b, p.
332) tried to complete Constraint I with " . . . and NP^P is stress-
ed.", which would make the right prediction about (18) with stressed
'HIS' but it cannot explain the difference between (1) and (2) if
'he' is pronounced with reduced stress in both cases.

The most discussed sentence in papers on 'pronominalization' must be
(19). This so-called Bach-Peters paradox (Bach 1970) is hard to ex-
plain with the pronominalization hypothesis. One can, of course, do
as Karttunen (1971) did, i.e. one can suppose (in order to get rid
of the infinite deep structure which would be necessary) that (19)
has the following deep structure:

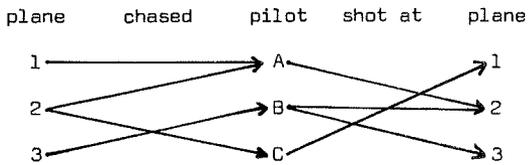(19) The pilot who shot at it hit the Mig which chased him.

The NP_1 pronominalizes NP_2 and NP_3 pronominalizes NP_4. But there are
three possible meanings of this sentence, (Kuroda 1971) for which the
transformationalists have to find three different deep structures.
(According to the transformationalists every meaning of a given sen-
sentence must have a different deep structure.) Unfortunately for the
transformationalists, it has been shown by Wasow (1973) that there is
an algorithm for constructing an infinite number of deep structures
for (19). Therefore transformationalists should discover infinitely
many distinctive readings for (19)! The obvious impossibility of this
means a hard blow to the transformational hypothesis of pronominali-
zation.

Sentence (19) means either

    a) ´The pilot who shot at the Mig that chased him hit it.´
or b) ´The Mig that chased the pilot who shot at it was hit by him.´
or c) something which is neither a) nor b) and has the surface struc-
ture of (19). (Kuroda (1971) tried to explain this third possibility
with reference to a hypothetical world where c) is possible without
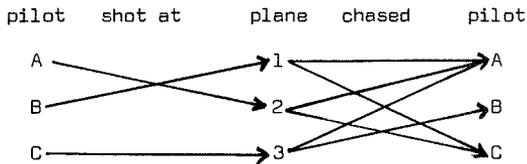a) and/or b) being true, but in fact he himself proves, without real-

8

izing it, that c) is something else than a) and b). It is not neces-
sary to refere to a non-existing 'data base'.) The fact that there
do exist three meanings of (19) can be shown in the following 'data
bases' taken from Kuroda (1971) and Karttunen (1971):

'Data base 1'

plane   chased   pilot   shot at   plane

Only the pilot B and the plane 3 qualify for the meaning a), b) and
c).

'Data base 2'

pilot   shot at   plane   chased   pilot

Only the pilot A and the plane 2 qualify for the meaning b) and c),
but no pilot and plane qualifies for meaning a).

'Data base 3'

plane   chased   pilot   shot at   plane

Only the pilot B and the plane 3 qualify for the meaning a) and c),
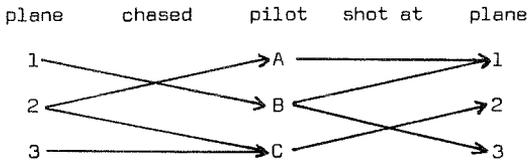but no plane and pilot qualifies for b).

'Data base 4'

| plane | chased | pilot | shot at | plane |

The pilot B and the plane 1 qualify for both a) and c).

The pilot C and the plane 2 qualify for both b) and c).

As we can see, the meaning c) is sometimes 'synonymous' with a),

sometimes with b), sometimes with both of them. a) and b) stand in

a sort of hyponymical relation to c).

An attempt to save the pronominalization hypothesis was shown and

criticized in Wasow (1975). He discusses the use of so-called bound

variables (in sense of McCawley (1968, 1970)) which would make it

possible to derive (19) from a deep structure which can be simpli-

fied as

$[x:\text{the pilot}], [y:\text{the Mig}], [x[\text{shot at } y]S1 \text{ hit } y[y \text{ chased } x]S2]S3.$

He shows that pronominalization in such a deep structure would gene-

rate certain ungrammatical sentences and it could not generate all

grammatical sentences, because several syntactic rules in English

are sensitive to the difference between pronouns and full NPs. If

pronouns and their antecedents are derived from such variables,

then these rules cannot apply correctly. Wasow gives, among other

things, the following argument. If bound variables are accepted,

the sentence with the simplified deep structure '$[x:\text{some burglars}]$,

$[x \text{ shot a man who discovered } [\text{that } x \text{ were in his house}]S1]S2$' will

give 'Some burglars shot a man who discovered that they were in his

house.' (via substitution of 'x' in accordance with Constraint II)

or 'A man who discovered that some burglars were in his house was

shot by them.´ Passivization must precede the substitution of ´x´ to
prevent generation of ´*They shot a man who discovered that some
burglars were in his house.´ As is known, ´there-insertion´ in ex-
istential sentences is possible only when the NP in question is an
indefinite one (*There is the man at the door.). Wasow examines
*´Some burglars shot a man who discovered that there were they in
his house.´ and ´A man who discovered that there were some burglars
in his house was shot by them.´. On the lowest transformation cycle
in the latter sentence, there-insertion is applied, then passiviza-
tion comes on the next cycle, and after that ´x´ is substituted. But
if passivization does not occur on the second cycle but only substi-
tution, the former ungrammatical sentence is the unavoidable result;
that is, the latter sentence can be generated only if the former un-
grammatical sentence can.[1]

Wasow proposes an interpretative approach to the problem to save
McCawley´s bound variables. But this is already the method advocated
by interpretativists (Dougherty 1969, Jackendoff 1968, 1972) who
don´t need to postulate such abstract deep structures like those pro-
posed by Wasow. Interpretativists (led by the later works of Chomsky
(Chomsky 1970, 1971 etc.) have returned to the position taken by
Chomsky (1957). They do not postulate any ´fancy´ abstract deep
structures, their ´moderate´ deep structures are syntactically moti-
vated. They claim that

a) Pronoun forms are inserted into deep structures like any other NPs.

b) Coreferentiality between the full NPs and the pronominal NPs is a
   semantic judgement on the part of speakers/listeners and thus
   statements involving coreference shall not appear in the formula-
   tion of any transformation.

c) Describing 'pronominalization' amounts to discovering rules of se-
   mantic interpretation of the type /NPa/ is α coref /NPb, +pro/
   just in case certain conditions are fullfilled .
d) Deep structures with incorrect forms which cannot get any seman-
   tic interpretation are semantically ill-formed.

Among the arguments interpretativists use against transformationa-
lists (besides the Bach - Peters paradox) are these:
a) At least some pronouns must be generated by the base anyway (e.g.
   in 'She is beautiful.' combined with pointing at the person who
   was not talked about before).
b) There are NPs like 'the bastard', 'the bum' etc. These 'pronomi-
   nal epithets' can occur in certain environments where they func-
   tion more or less as specialized pronouns. ('We asked Tom, but
   the bastard is to lazy to do anything.') There is no sensible way
   to describe, in a transformational framework, when a 'pronomi-
   nalized NP' becomes a pronoun and when it becomes one epithet or
   another.
c) Dougherty (1969) gives many other examples which are difficult to
   generate via a pronominalization transformation - e.g. 'Each of
   Mary's sons hated his brothers.' 'his brothers' cannot be derived
   from 'Each of Mary's sons' brothers' which would mean that every
   son hated all other sons and himself.[2]
(Dougherty has unnecessarily committed himself to a very strong
claim: ". . . the set, Σ_A, of surface structure sentences which con-
tain a proform that is understood anaphorically is a subset of the
set Σ_N of surface structure sentences which contain a proform that
is not understood anaphorically. . . . There is no a priori reason

why this should hold in English, but the fact that it does hold is
linguistically significant." (Dougherty 1969, p. 511). There is, in-
deed, no reason why this should hold and in fact it does not — nei-
ther for reflexives, nor for such sentences where the semantics de-
mands obligatory coreference ('Except for her laziness, Mary is an
amiable person.'). This has been criticized by McColl (1972), who is
for the interpretative approach, and by Postal (1972b), who is a-
gainst it. But Dougherty's statement just needs a slight reformula-
tion to be correct. If we substitute 'syntactic surface structures'
(i.e. an abstraction from the semantics of actual sentences) for
Dougherty's 'surface structure sentences' and 'a proform that can be
understood' for 'a proform that is understood', the claim is correct.
Of course, the semantics of real sentences can determine that certain
sentences get only the coreferent or noncoreferent reading.

Jackendoff (1972) expresses coreference in a "table of coreference".
Each entry in the table consists of a pair of NPs and one of the re-
lations coreferential or non-coreferential. Every possible pair of
NPs in the sentence is included in the table. After the table is
completed, it is subjected to so-called well-formedness conditions
which determine whether it is consistent both internally and in re-
lation to the rest of semantic representation. Jackendoff's rules
for pronominal coreference are supposed to work as follows: the
rules apply at the end of each transformational cycle and enter re-
lations between pairs of NPs in the table of coreference. After the
last cycle the noncoreferentiality rule, which says that every pair
of NPs that have not been related by a rule of coreference will be
marked as noncoreferential, ensures that every pair of NPs appear in

the table. Even Jackendoff's coreference rules contain a condition
similar to Condition II on pronominalization, although he develops
the concept of command from the earlier formulation to a more general
one. For Jackendoff, the node A commands B, if a) neither A nor B do-
minates the other and b) the S-node or the NP-node (i.e. every node
that defines a transformation cycle — according to Jackendoff, even
NPs do that) that most immediately dominates A also dominates B. This
makes it possible to give the right coreference interpretation to (20).

(20) His BROTHER visited John

There are also some other attempts to solve the problem of pronomina-
lization with a combination of interpretative and transformational hy-
potheses, e.g. Harada — Saito (1972) where, by a mixture of the above-
mentioned hypotheses, reflexives come about via transformations, while
personal pronouns are generated in deep structure, or Teleman (1970),
who proposes to derive pronouns and even other coreferent NPs from co-
reference-marked dummies in deep structure. These dummies get such
surface structure representations as are able to express the intended
coreference relations.

Generally speaking, the bulk of the works on pronominalization try to
establish syntactic constraints on pronominalization. These basic syn-
tactic constraints (the above-mentioned or some other — e.g. Culicover
(1976), who uses the notion 'in construction with' instead of 'com-
mand') are then successively complemented (since they do not work) by
new syntactic or other constraints. For example, a number of 'excep-
tion rules' are formulated for constituents bearing sentence stress.
However, while the relations between sentence stress and 'pronomina-
lization' are at times noted (Lakoff 1968, Postal 1971, Akmajian 1973,

Akmajian and Jackendoff 1970, Jackendoff 1972, Hinds 1975b), these
amendments lie at the perifery of the study of coreference. They have
never made an integrated coreference system; they are usually mere ad
hoc patchworks.

One should not forget that the discussed rules of 'pronominalization'
can be valid for a sort of 'normal language' only, i.e., a language
in its 'basic functions', an abstraction from, for example, the meta-
linguistic function ('He says that Johnny wants a cake.' is okay as a
compound of two languages – the baby language and the metalanguage
of the adult speaker.), or the poetic function (A writer can certain-
ly write: 'He thought that Peter behaved stupidly.' to indicate that
Peter looked at himself from the outside, as a neutral observer.) Re-
strictions on 'pronominalization' are also valid only for a sort of
coreferentiality intended by the speaker. The sentence 'But it was HE
who said that Peter was not here.' is okay in this situation: Peter,
who I did not know, pretended he was somebody else and said that Pe-
ter was absent. I told it later to a friend of mine who knew Peter
and the friend pointed Peter out. I objected: But it was HE etc., by
which I showed my reluctance to accept that Peter and the person I
saw were identical. Then 'HE' and 'Peter' have the same referent, but
I do not know it/ refuse to believe it.

Part II – Coreference Rules Described in Terms of

Functional Sentence Perspective

In this attempt to show a new means of explaining the problem of co-
reference, the interpretative theory is combined with the theory of
Functional Sentence Perspective (FSP). The aim of this paper is not
to present a complete theory of pronominal coreference, e.g. the

question of coordinate sentences and coordinate NPs is avoided and
English reflexives are just mentioned in Appendix B as they represent
a language specific problem (for example, see Spangler (1970), while
'pronominalization' works practically identically in many (perhaps all)
languages, however, an attempt is made to show that it is possible to
do without the generally accepted 'precede and command' rule. For
those who may be unaccustomed with the theory of FSP, as it has been
developed by the Prague school during the last forty years, Appendix
A is included in this paper. This paper's bibliography also contains
several papers by Firbas, Daneš, Svoboda, Pala, and Dvořáková con-
cerning FSP.

Although FSP belongs to text linguistics, it is possible to speak
about the distribution of Communicative Dynamism (CD) even in an iso-
lated sentence which we analyse out of its context. When no context
is known, everybody 'reconstructs' a type of context in which the sen-
tence in question could be used. It is always the 'normal' use of an
isolated sentence, i.e. the sentence taken at its 'face value' is the
sentence uttered with the 'normal', 'unmarked' intonation. That's why
only the 'marked' stresses in example sentences are indicated by cap-
ital letters, otherwise all sentences are supposed to have 'unmarked'
sentence stress. Two otherwise identical sentences with different sen-
tence stresses (i.e. with different theme – rheme structures) are NOT
identical sentences. Now and then, generativists realize that certain
stresses change coreference possibilities; generally they ignore these
differences and analyze the ambiguous written sentences only (i.e.
they behave as if the written language were prior to – or, at least,
equal with – the spoken language; in fact the written language is a
simplification of the spoken one), the consequence of which is that

they may say whether coreference is possible (for at least one way of reading the written sentence), but they have no chance to discover why.

It is not always easy to analyze the gamut of CD in a given sentence. But the intuition and reasoning of linguists can be checked in several objective ways. One of these is a careful translation into a language in which FSP is the leading principle of word-order, e.g. into one of the Slavic languages. The rheme proper (the most rhematic word or phrase) bears also sentence stress. Another method of discovering theme-rheme structure is the method of questions. One can construct series of questions which the given sentence (with the given intonation) suits as an answer. (Except for such general questions like 'What has happened?'.) The element(s) which must be present in all questions belong to the theme of the analysed sentence and the element which is absent in all the possible questions is the rheme proper.

There have been several attempts to incorporate certain notions as 'theme', 'rheme' (or 'old information', 'new information', or 'presupposition', 'assertion') in the rules of 'pronominalization' (Kuno (1972b) and its enlarged version Kuno (1975), Hinds (1975a), and above all Bickerton (1975) who has completely discarded the old syntactic framework). However, these attempts have not been very successful because their theoretical equipment is insufficient for this aim. Hinds and Kuno (who both retain the old discredited syntactic framework) try to use the theory of FSP in their analyses, but their knowledge of Functional Sentence Perspective is minimal and distorted. For example, Hinds believes that every 'by-phrase' in passive sentences

must be rhematic because of its final or 'near final' position! The fact that most 'agent-nodes' are deleted (even when the agent is known) and that the agent can be expressed by an unstressed pronoun (i.e. by a thematic element) shows the fallacy of such purely mechanical judgement based on sentence linearity only. (Hinds is not alone, however. Since the American generativists started thinking about 'presuppositions' and similar notions, they have produced a lot of incredible statements the fallacy of which is obvious to everybody who knows the theory of FSP. One has to regret that these works begin where the Prague school was about forty years ago instead of using the accumulated results of Czechoslovak linguists.) Of course, nobody can stop Hinds if he wants to use some terms in a way defined by him, but Hinds believes that he applies the Prague theory of FSP, which he praises and makes propaganda for!

One of Hinds' most astonishing statements is "A function (i.e. purpose) of pronominalization is to indicate that the referent [!?] of the pronoun is considered thematic material." (Hinds 1975a, p. 91). According to Hinds, 'things in our world' are thematic or rhematic! Even Kuno (1975, p. 280) seems to believe in existence of 'predictable' and 'nonpredictable' referents. There may live some 'thematic birds' or 'predictable butterflies' in the USA and Japan but they have never been seen in Central Europe. Kuno's lack of insight into FSP causes the terms he uses to be both numerous (theme, contrastive listing, exhaustive listing, neutral description, predictable theme, unpredictable theme, contrastive theme, known part of sentence, unknown part of sentence, old information, new information etc.) and extremely vaguely defined. ("I can only say that the theme is what the rest of sentence is about." - Kuno 1975, p. 277.) Of course, even the Czecho-

slovak linguists use at times such expressions when trying to popula-
rize the concepts of FSP but one should (e.g. as Firbas has done) make
some exact definitions, too. (In FSP terminology it is sufficient to
speak about degrees of Communicative Dynamism (CD) as the other terms
are used for the sake of convenience only:

  'theme' = element(s) carrying a low degree of CD

  'theme proper' = element(s) carrying the lowest degree of CD

  'rheme' = element(s) carrying a high degree of CD

  'rheme proper' = an element carrying the highest degree of CD

  etc.)

According to Kuno's definitions, it would be possible to claim that
'John' in 'Look, John is coming here.' is the 'theme' (more exactly:
'the unpredictable theme') as 'John' is what the rest of sentence is
about. But Kuno suddenly says that this sentence is themeless since
"there has been no previous mention of him [= John] or no expectation
of his coming . . ." (Kuno 1975, p. 278). On the other hand Kuno (1972b,
p. 308) says that "unpredictable themes appear when new topics are in-
troduced". But this would be exactly the case of the above-mentioned
sentence! Besides, Kuno (1975, p. 277) states that "The theme must be
discourse anaphoric . . ." but it does not have to be "old predictable
information". The first part of this statement clashes with the quo-
tation about 'unpredictable themes'. What is meant by 'predictable
themes' is mysterious, too. The fact that 'Tom' in the following dia-
logue is called 'unpredictable contrastive theme' is another example
of Kuno's elastic and contradictory definitions:
"Speaker A: I understand that John, Bill, and Tom all teach high school.
 Speaker B: John does, and Bill does, too, but Tom does not." (Kuno
1975, p. 277). 'Tom' is as much (or as little) 'predictable' in this

context as 'He' is in the dialogue on the same page about which Kuno
claims that it is a 'predictable theme'!

"Speaker A: What does John like? Speaker B: He likes fish."
Both 'Tom' and 'He' are 'predictable' in the same way: If these words
were made unidentifiable when the sentence they belong to were said,
one could guess what should have been there. (The criterion is Kuno's
own.) Otherwise they are not predictable at all. Cf. the possible an-
swers of Speaker B: 'John does, and Bill does, too, but who is the
third guy?', 'Why are you asking me?'. In fact, it is even worse. It
seems impossible even for Kuno to remember what he means with his
vague claims. In his latest version (Kuno 1976), he repeats that 'He
likes' of the above written sentence 'represents old, predictable in-
formation because even if that part of sentence is garbled, it is re-
coverable from the preceding context'. Then he claims again that 'John',
'Bill', and 'Tom' represent 'unpredictable information' according to
the same criterion'. (Kuno 1976, p. 120-121). But suddenly (Kuno 1976,
p. 181) we read:

"Speaker A: Who do you like better, John or Mary?
 Speaker B: Between these two, I like him better."
". . .the subject of like is him (= John), which is unstressed because
it does not represent unpredictable information"(emphasis by the au-
thor of this paper). If we use Kuno's criterion again (". . . if that
part of sentence is garbled . . . " etc.) we shall find that 'him'
does represent unpredictable information — the answer could have been
" . . . I like her better".

It seems to me — as far as it is possible to say something about a
language one has only a 'second-hand knowledge' about — that the fa-

mous Japanese particles are multifunctional and that's why their to-
tal identification with a sort of FSP markers (which is probably
what Kuno does) causes such a chaos. Kuno also uses some examples of
very dubious value:

"Speaker A: Who killed Mary?

Speaker B: *With an accomplice that John hired, he killed Mary."
(Kuno 1976, p. 123). The sentence is, of course, at least very
strange but it has nothing to do with pronominalization. The fol-
lowing versions would not be better:

Speaker B: ?? With an accomplice that he hired, John killed Mary.
or Speaker B: ?? With an accomplice that Jane hired, John killed
Mary.

All these answers do not suit as answers to the question, irrespec-
tive of where the pronoun is placed or not.

Kundo (1975) presents ten rules of pronominalization (one of them is
the traditional Constraint II), which are largely unrelated and whose
validity is impossible to test because of his vague terminology and
numerous definitions and 'counter-definitions'. Some of the rules are
quite mysterious and remain unexplained (e.g., "If a given noun
phrase in a sentence has a discourse anaphora, pronominalize all but
one occurrence of that noun phrase in the sentence." – Kuno (1975,
p. 280).), others are unnecessary (e.g., "Do not pronominalize the
noun phrase of the exhaustive listing interpretation." – Kuno (1975,
p. 280) – which is completed (p. 281) with the possibility to have
stressed pronouns of 'exhaustive listing'. As Kuno's 'exhaustive
listing' translated into a more general FSP term is 'rheme proper',
it is obvious that it cannot be an unstressed pronoun and there is
no need to formulate a special rule of 'exhaustive listing').

The only statement of Kuno's which is correct (after having been "translated from 'Kunoese' into English" is: All pronouns must have some ante cedents, either mentioned before or 'given' in the situation; i.e. so-called backward pronominalization is possible only when the referent is already 'known'. (= The speaker supposes that the referent is 'known' for the listener.) Therefore:

(21)[*]Before I could talk to him, a policeman turned away from me. The indefinite article indicates here that 'a policeman' is 'unknown' and for the first time under discussion. 'him' cannot have as its 'antecedent' somebody who is introduced on the scene first after the pronoun has been used.

Derek Bickerton treatment of 'pronominalization' (Bickerton 1975) is radically different from all the above-mentioned works. He has completely rejected the old syntactic rules of pronominalization and tries to use notions similar to those of FSP: "Pronominalization flows bidirectionally, and across sentence boundaries, from presupposed to asserted NP, and between presupposed NP, except where one NP has been presupposed throughout its derivational history and the other has not, in the latter case, pronominalization shall be from the more-consistantly to the less-consistently presupposed." (Bickerton 1975, p. 32-33). However, his instrument, i.e., the sentence bipartition into 'presupposition' and 'assertion' (in FSP terms: the context dependent part and the context independent part) is insufficient.

As Bickerton's hypothesis is based on various constructions which were extremely difficult to explain within the traditional framework (above all the constructions where rhematicity is expressed syntactically - for example the types:

It was + rheme + who + theme (It was PETER who killed his wife.)

What + theme + was + rheme   (What annoyed Bill was my punching him.)),

he can accomodate these constructions which consist of sharply delim-

ited context-dependent and context-independent parts. However, there

are many sentences where such delimitation is not possible, e.g.,

sentences which consist of context-independent elements only. Bicker-

ton's rule cannot account for the following examples either:

(What happened with John?)

(22) *He was killed when John **tried** to escape.

(23) The cops killed him when John tried to escape.

It is impossible to see any difference in 'presuppositional consist-

ency' between 'he' in the first and 'him' in the second sentence.

Bickerton seems to have completely missed the fact that there do exist

sentence-stressed 'asserted antecedents' (in FSP terminology: antece-

dents which are the most rhematic elements). For example, our sentence

(12) (It was PETER who killed his wife.). There are some dubious cases

in his reasoning, too. It is not clear why, e.g., 'Rhoda' in 'Rhoda's

appartment' is claimed to be asserted and 'appartment' is presupposed

- Bickerton claims that 'Rhoda's appartment' is derived from 'The ap-

partment belongs to Rhoda.', while the more usual interpretation 'Rho-

da has an appartment' where 'Rhoda' is 'presupposed' and 'appartment'

is 'asserted' seems as plausible as Bickerton's claim.

Coreference Rules Stated in Terms of FSP[3]

A) All pronouns must have antecedents in the preceding linguistic

   context or the situation.[8]

B) Coreference ('pronominalization'), both 'forward' and 'backward',

   is possible only when the degree of Communicative Dynamism (CD)

carried by the 'antecedent' is not substantially higher than that
carried by the pronoun(s). This rule is subject to the following
restrictions:

C) The 'antecedent' can be a rheme proper in sentences of second-in-
stance level (see Appendix A) if coreference is possible in the
first-instance level sentence from which the second-instance lev-
el sentence is derived.

D) No pronominal rheme proper is allowed before the 'antecedent'.[9]

E) The 'antecedent' is obligatory as the theme proper.[4]

Let's exemplify these rules:

Rule A

A has been already demonstrated in (21), which is repeated here for
convenience:

(21) *Before I could talk to him, a policeman turned away from me.
Some more examples:

(24) He is stupid.

(25) (Who do you suppose I calmed when I saw him getting mad?) *I
calmed him before Harry did something rash.

(24) would be without meaning if the speaker did not refer to a male
person. It is always the speaker/writer who determines whether there
is an antecedent, but if the listener/reader cannot find an antece-
dent in the context/situation, he reacts: (A: He is stupid. B: Who?[5]).
As (25) is preceded by a rhetorical question, the speaker cannot pre-
sume that the listener knows the antecedent. As for the following
dialogue, it is possible only when the speaker B presumes that A
closely connects John with Mary, so that A immediately identifies the
referent of the pronoun.

A: Tell me about John. B: (26) Since I despise her, I have not seen

John and Mary for ages.

<u>Rule B</u>

(3) John left town after he robbed the bank.

(4) *He left town after John robbed the bank.

(5) After John robbed the bank, he left town.

(6) After he robbed the bank, John left town.

(3), (5), and (6) allow coreference as the antecedents/postcedent
carry a low degree of CD. It is the linearity of (3) and (5) that de-
termines the low degree of CD. As for (6), even there 'John' belongs
to the theme (because of Rule A — 'John' must be context dependent and
therefore thematic. If 'John' were context independent, then it could
not be coreferent with 'he' which demands the existence of an <u>antece-</u>
dent). (4) does not allow coreference. The pronominal subject of (4)
is definitely the theme proper, while 'John' in the subordinate tempo-
ral clause placed after the main clause (= a rhematic subclause) be-
longs to the rheme. It is not enough that 'John' carries a low degree
of CD within the rhematic part. The difference in degrees of CD is too
great, so coreference is impossible.

(27) *It disturbs her that Mary is pregnant.

(28) It disturbs Mary that she is pregnant.

(29) That Mary is pregnant disturbs her.

(30) That she is pregnant disturbs Mary.

As has been shown in Svoboda (1968), there are two possible FSP inter-
pretations of sentences with extraposition. Either the subclause is
thematic and VP of the main clause is rhematic, or they are both rhe-
matic and the subclause is the rheme proper. In (27) the former pos-
sibility is out of question because the unstressed 'her' cannot belong
to the rheme, and even the latter interpretation is modified: The sub-
clause is rhematic and 'her' is thematic for the same reason as in the

first case. The thematic pronoun (the theme proper in this case) can-
not be coreferent with 'Mary' which belongs to the rheme. As for (28),
the second one of the above-mentioned interpretations allows corefer-
ence. In (29), pronounced in the 'normal', 'unmarked' way (with sen-
tence stress on 'disturbs'), both the subclause (and therefore even
'Mary') and the pronoun are thematic; coreference is possible. In (30)
either 'Mary' is unstressed (and bears a low degree of CD) — then co-
reference is possible — or it carries sentence stress, then the sen-
tence in question comes from a sort of 'presupposition' (a first-in-
stance level sentence) like 'That she is pregnant disturbs somebody.'
and 'Mary' identifies the 'somebody' — coreference is possible, too
(Rule C and B). (Of course, the first-instance level sentence must
have an antecedent for 'she' (Rule A), and therefore it demands a con-
text where the antecedent does exist, for example, we have to know
that a certain girl/some girls of a limited number is/are disturbed by
her/their pregnancy.)

Rule C

Naturally, all the previous sentences may get a lot of various con-
trastive stresses. Such sentences belong from FSP's point of view to
the second-instance level. The heavily stressed word/phrase is rhe-
matic and the rest of the sentence is thematic. But even then it is
possible to speak about different degrees of CD within the first-in-
stance level sentence from which the second-instance level sentence
originates. (And the same is true even for sentences in real contexts.)
(31) John DID leave town after he robbed the bank.
(32) John left town after he robbed the BANK.
(33) JOHN left town after he robbed the bank.

(34) It was JOHN who left town after he robbed the bank.

(35) *HE left town after John robbed the bank.

(36) *He left town AFTER John robbed the bank. etc.

Coreference is possible in (31), (32), (33), and (34) (Rule B and Rule C — for example, (33) and (34) come from a first-instance level sentence which is something like 'Somebody left town after he robbed the bank.', where coreference is possible (Rule B), and 'JOHN' identifies 'Somebody'.) In (35), it is not possible to get coreference reading in the first-instance level sentence ('Somebody left town after John robbed the bank.), therefore coreference is not possible in the second-instance level sentence, either. (Besides, (35) would have clashed with Rule D, too.) (36) does not allow coreference as there is a great difference in CD between the pronoun and 'John' even within the first-instance level sentence (Rule B), therefore coreference is impossible even within the second-instance level sentence (Rule C). The same rules (Rule B and Rule C) determine whether coreference is possible or not in (37) - (40):

(37) *It disturbs HER that Mary is pregnant. (Cf. (35))

(38) *It disturbs her that Mary IS pregnant. (Cf. (36))

(39) It disturbs MARY that she is pregnant. (Cf. (33))

(40) That Mary is pregnant disturbs HER (only).

Coreference is possible in (40). (Rule B)

As it has been mentioned, 'backward pronominalization into main clause' is possible at least for some speakers when 'the resulting pronoun' **is** not the subject of the main clause (Lakoff 1968). But this is true in certain cases only, e.g. in (23). The difference in the degree of CD between the pronoun and the NP which is supposed to be coreferent with it, is not so great and that's why coreference is possible, at least

for those speakers who are more sensitive to the various 'shades' of
CD. (According to Firbas' theory, an unstressed pronominal object is
thematic but it carries higher degree of CD than a pronominal subject.)
On the other hand, coreference is impossible in (41). 'John' may be
stressed or unstressed but it belongs to the part of (41) which carries
the highest degree of CD. Coreference is ruled out by Rule B.

(23) The cops killed him when John tried to escape.

(41) *The cops killed him when they tried to arrest John.

Naturally, coreference is out of question in (22) since 'He' is the
theme proper and the degree of CD carried by 'John' is in relation to
it too high (Rule B).

(22) *He was killed when John tried to escape.

 Even (42) - (47) confirm our Rule B:

(42) They are not very clever, these politicians.[6]

(43) He would have been like a son to both of us if we could have kept
  John away from the influence of his friends.[6]

(44) John said that he was safe.

(45) *He said that John was safe.

(46) He was safe, John said / said John.

(47) *John was safe, he said / said he.

'these politicians' of (42) is a mere repetition of the thematic 'they'
regardless of its final position. Of course, one could keep the usual
'precede and command' rule if one claimed that the surface structure
of (42) is such that 'they' does not command 'these politicians', but
nothing similar can help in (43) and (47). (43) cannot be explained
with any other proposed rules, but it is okay according to out Rule B.
'John' in (43) is definitely not too rhematic — the subclause can be
interpreted as a sort of parenthetical clause which follows the highly

rhematic 'a son to both of us' and even in the subordinate clause
some elements carry higher degree of CD than 'John'. The 'strange'
(47) does not allow coreference as 'he' is the theme proper both in
545) and (47). The distribution of CD which is determined by the se-
mantics of these sentences, is not changed by the different word or-
ders. 'he said / said he' in (47) is a sort of 'parenthetical theme'
and the difference in the degree of CD between 'he' and the rhematic
'John' is too great.

    Some more examples:

(48) *He believes that Hubert will win big in '72.

(49) *Mary told him that Hubert would take it all in '72.

(50) *We gave him a picture of Hubert.

(51) His mother believes that Hubert will win big in '72.

(52) Mary told his mother that Hubert would take it all in '72.

(53) We gave his mother a picture of Hubert.

In (48) − (50) coreference is impossible as 'he' resp. 'him' carries
too low a degree ov CD. A little increase of CD carried by the pronoun
(sentences (51) − (53)) makes coreference possible. For example, the
pronominal subject of (48) is the theme proper; besides, it is (being
a pronoun) the theme proper with the lowest possible degree of CD.
'His' of (51) belongs to the NP which carries the lowest degree of CD
in the sentence, however, 'His' carries higher degree of CD than 'He'
of (48).

As (53) shows, the 'antecedent' can carry a relatively high degree of
CD if the pronoun carries a high degree of CD, too. (Our Rule B again.)
In (50) coreference is impossible as the difference in CD between the
pronominal object (the element with the next lowest degree of CD in
(50)) and the 'antecedent' which belongs to the rheme is too great. The

pronoun of (53) carries a little higher degree of CD and coreference becomes possible.

Our rules are valid not only for whole sentences but also for their parts:

(54) *Mary's telling him that Hubert would win was a major mistake.

(55) Mary's telling his mother that Hubert would win was a major mistake.

In relation to the whole sentence, 'Mary's telling him that Hubert would win' is thematic but when coreference possibility is judged within the cycle in question, the result is the same as in (49). Naturally, coreference is possible in (55) as it has been in (52).

The rules which has been exemplified so far are A), B), and C). What about D) and E)? Rule D prohibits coreference in sentences like (56) and (57) (and (35), (37)):

(56) *After HE robbed the bank, John left town.

(57) *The cops killed HIM when John tried to escape.

Ruele E is, in fact, just a special case of Rule B. All the previous sentences that begin with pronominal subjects of the main clause exemplify not only Rule B but also Rule E. The pronominal subject of the main clause placed as the first word of the sentence cannot be anything else than the theme proper, but this is prohibited by our Rule E, which says that the difference in the degree of CD between a pronoun which is the theme proper and its 'antecedent' is too great.[6] That's why only (58) is acceptable in the following dialogue and (59) is not:

A: What will John do tomorrow?

B: (58) If he can, John will go to see a movie.

(59) *If John can, he will go to see a movie.

In another context is (59) okay:

A: Will John go to see a movie if he can?

B: (58b) If he can, John will certainly go.

   (59b) If John can, he will certainly go.

(The semantics has been slightly changed to get more natural answers.) Both (58b) and (59b) are okay since 'if X can' and 'X' are equally context dependent (and therefore thematic). In such case we can choose any of the Xs as the 'antecedent'.

As for (43), it is not a counterexample to Rule E. We are talking about 'us' (about our relations to John) and about 'John'. 'John' is not the whole theme proper – it is just a part of it. That's why it can be 'pronominalized' in accordance with Rule B.

Rule E can also explain the 'strange' sentences with topicalized adverbials:

(60) In her apartment, Mary smokes pot.

(61) *In Mary's apartment, she smokes pot.

(62) In Mary's apartment, her brother smokes post.

(63) ?? In Mary's brand new apartment in Detroit, she smokes pot.

(64) Near her, Mary found a snake.

(65) *Near Mary, she found a snake

(60) is okay since 'Mary' is the theme proper. (61) does not allow co-reference as it is impossible to get some other theme proper than 'she'. Neither 'Mary' which belongs to the adverbial that carries higher CD than 'she' nor 'apartment' can be the theme proper. As for (62), any of the two genitives suits as the theme proper. (Even 'In her apartment, Mary's brother smokes pot.' is okay.) (63) is acceptable for some people because the structure of the long adverbial phrase strongly resembles that of a clause, where 'Mary' can become

the theme proper of the whole sentence. The explanation of (60) and (61) is valid even for (64) and (65). The adverbial carries higher degree of CD than the subject, which is the theme proper. (It is obvious that 'Near' does not suit as the theme proper, either.)

Some 'Bad Cases of Pronominalization'

The above-mentioned 'direct discourse analysis'of (7) (Kuno 1972a) was refuted by Hinds (1975a). The invalidity of Kuno's claim was proved by (8), (9), and (10). According to Hinds, 'pronominalization' is impossible when passivation had been used to indicate that a NP is 'rhematic'. Quotation marks are used because, as it has been mentioned already, Hinds' concept of theme and rheme has only a certain superficial similarity with the terminology of Prague school.) However, Hinds is wrong even within his own theory, as (66) shows. What is wrong with (7) when (8), (9), (10), (66), (67), and even (68) are okay?

(7) *That John was the best boxer in the world was claimed by him.

(8) That John was the best boxer in the world was never claimed by him.

(9) That John was the best boxer in the world was loudly and repeatedly claimed by him.

(10) That John was the best boxer in the world was claimed by him but nobody would believe such nonsense.

(66) The woman who rejected Peter is hated by him.

(67) That John was the best boxer of the world was claimed by HIM.

(68) That John was the best boxer of the world was denied by him.

(7) is bad because the theme-rheme structure it indicates does not make sense. The subordinate clause is thematic and the unstressed pronoun in the by-phrase is thematic, too. The only possible rhematic element is the remaining participle and copula. But it seems difficult (without contrastive stresses, i.e. without reading the sentence in question as

belonging to the second-instance level – for example: That John was
the best boxer in the world WAS claimed by him.) to find a sensible
context where the copula or the participle could be the rheme proper.
This has nothing to do with coreference. (69) sounds as bad as (7).
(69) ?? That John was the best boxer in the world was claimed by her

(with ´her´ unstressed).

(8), (9), (10), (66), (67), and (68) are okay since the VPs are made
naturally rhematic with the rhematic adverb ´never´, with the modifi-
cation of the verb with ´loudly and repeatedly´ etc. (67) has the
rhematic ´HIM´. (66) and (68) contain participles which can be rhema-
tic in a natural way – e.g. ´deny´ implies negation and negation is
usually the most rhematic part of a sentence.

Our rules can also explain sentences (70) and (71). It is usually said
that coreference is possible in (70) and impossible in (71). It is, in
fact, true only for the most usual ways of reading of these two senten-
ces, i.e. (20) resp. (77). (70) can be pronounced, for example, as (20),
(72), (73). (80) can be pronounced as (74) – (77).

(70) His brother visited John.

(71) His brother was visited by John.

(20) His BROTHER visited John.

(72) *HIS brother visited John.

(73) His brother visited JOHN.

(74) His BROTHER was visited by John.

(75) *HIS brother was visited by John.

(76) His brother WAS visited by John.

(77) His brother was visited by JOHN.

Everything is as our rules predict. The ´antecedent´ carrying a rela-
tively low degree of CD makes coreference possible in (20), (74), (76),

and coreference is impossible in (72) and (75), where our rule D pro-
hibits it. As for (73) and (77), which are not acceptable 'normally',
they become acceptable in a context in which the issue is whether John
visited his brother or his brother him. In such a context (i.e. as sen-
tences of second instance level), (73) and (77) allow coreference
(Rule C). Finally there are two types of sentences for which Postal
claims the existence of his Global Constraint on Pronominalization and
the restriction prohibiting 'backward pronominalization' across a co-
pular verb of referential identity.

(78) Who hates his wife?

(79) *Who does his wife hate?

(80) Who is hated by his wife?

(81) It was Peter who killed his wife.

(82) *It was Peter who his wife killed.

(83) It was Peter who was killed by his wife.

(84) His wife hates who?

(16) It was my punching him that annoyed Bill.

(85) It was my punching Bill that annoyed him.

(15) *What annoyed him was my punching Bill.

(86) What annoyed Bill was my punching him.

(78), (80), (81), and (83) allow coreference. These sentences are
second-instance level sentences coming from 'presuppositions' like
'Somebody hates his wife', 'Somebody is hated by his wife' etc. (Rule
C and Rule B). In (79) and (82), coreference is impossible since the
first instance level sentences, which are of following types: 'His
wife hates somebody' and 'His wife killed somebody', do not allow co-
reference. These 'presuppositions' are wrong as the given 'wife' is
falsely 'specified' as belonging to an unspecified person (Rule A).

(87) does not allow coreference, either. The first-instance level sentence would be 'He was bitten by somebody's dog.' which cannot contain any intrasentential coreference. 'He' must have some earlier antecedent (Rule A) and the known antecedent cannot be coreferent with the unspecified 'somebody'.

(87) *He was bitten by PETER's dog.

(One should be conscious of the difference between the semantic rules of coreference and the possibilities given by the semantics of a given sentence and our knowledge of the world. For example, (77) is okay, while (88), which has the same theme-rheme structure (as well as deep structure and surface structure) does not allow coreference since it is practically impossible to imagine a context (a first-instance level sentence) where the question is who was eaten by whom. If we succeed in imagining a suitable context, coreference becomes possible.

(88) ? Their keepers were eaten by the TIGERS.)

As for the possible reading of (78) - (80) and even (84) as incredulity questions, the coreference interpretation is possible, probably for the majority of speakers, because such questions do not correspond with their distribution of CD to the statements they are 'echoes' to. 'Who' in the incredulity questions does not demand an answer, such a 'who' stands for an already known NP and the speaker just shows that he is surprised that the statement which has been made is valid for the NP in question. Naturally, there may be speakers who evaluate the theme-rheme structure of such sentences according to some more 'formal' criteria ('who' in all questions is rhematic for them), and for them (79) is wrong as an incredulity question, too, not to mention (84) which is 'completely wrong', the obligatory placing of 'who' at the beginning of the sentence and Do-Insertion not having been accomplished. (In fact,

there is another sentence type which is wrong for some speakers: 'This
is the man who the fact that he had cancer surprised.' The possibility
or impossibility of coreference depends again on the speaker's evalua-
tion of the degree of CD carried by the relative 'who' — Rule B again.)

In (16), the syntactic construction guarantees that 'Bill' is thematic
and coreference is possible (Rule B), except for (16) with sentence
stress on 'him' (Rule D). In (85), coreference is possible if sentence
stress is placed on 'my' or 'punching', (Rule B), but if it is placed
on 'Bill', coreference is impossible (Rule C). (15) prohibits coreference
as our Rule B predicts. (86) allows coreference as 'Bill' belongs to
the theme (Rule B).

Conclusion

The rules that have been presented and exemplified in this paper can do
without the whole heterogenous collection of rules one was forced to
accept otherwise. The new rules are simpler, fewer and homogenous.[7] They
are also interesting because they show that the theory of FSP, which is
ignored by the majority of linguists (or — if accepted — which is 'man-
handled' in unbelievable ways), is an instrument necessary for explana-
tion of various linguistic phenomena. Even the validity of the analytic-
al procedures used in FSP is indirectly confirmed by their use which en-
ables us to make correct predictions concerning coreference relations.

Just to name some other cases where FSP can explain certain phenomena
which cannot be understood otherwise, or which are usually 'explained'
by placing a 'name label' on them: Fillmore (1970) gives the following
sentences and cannot do more than note that the last one is ungrammati-
cal.

(89) An oak developed out of every acorn.

(90) Every acorn developed into an oak.

(91) Every oak developed out of an acorn.

(92) *An acorn developed into every oak.

The indefinite article of a thematic subject means either 'one of the', or 'a single', or it can signal a generic noun. None of these meanings fits in (92); it is impossible (because of the semantics of (92)) to interpret 'An acorn' as generic, or 'one of the acorns', or 'a single acorn'. It is quite unnecessary to try to speak about different 'scopes' of the quantifyers.

A similar problem was brought up by Lakoff (1970)

(93) Johan and Max saw an explosion.

(94) An explosion was seen by John and Max.

(93) means either 'John and Max saw an explosion and it was the same explosion', or 'John saw an explosion and Max saw another one.'. (94) is said to mean only 'John and Max saw an explosion and it was the same one.' The difference in possible meanings of (93) and (94) is usually explained with different 'scopes' of the indefinite articles in the active and passive sentence. But this is not true. If (94) is pronounced with sentence stress on 'explosion', it can be interpreted in both ways. Then, those who believe in 'scopes' would have to for-mulate an additional rule for certain sentence stresses which can change 'scopes'. The indefinite article of the thematic subject of (94) cannot obviously mean that the 'explosion' was generic and the other two meanings ('a single' and 'one of the') limit the number of explosions to one. However, if 'explosion' of (94) carries sentence stress, it cannot be thematic and the indefinite article with a rhe-matic noun means 'some', 'an unspecified'. That's why both interpre-

tations are then possible. The same is true even for (93). The rhematic NP with the indefinite article allows both interpretations. And vice versa — (95) can mean only 'John and Max saw an explosion and it was the same one.' as the thematic 'explosion' with the indefinite article must mean 'a single explosion' or 'one of the explosions'.

(95) JOHN and MAX saw an explosion.

To sum up: there may be reasons to formulate rules of the semantic interpretation of the sentences above in terms of 'scopes', but only if these are based on theme-rheme structure, not on sentence linearity only (as the generally accepted mechanical 'scopes'are).

Appendix A

"The concept of communicative dynamism is based on the fact that linguistic communication is not a static, but a dynamic phenomenon. By CD I understand a property of communication, displayed in the course of the development of the information to be conveyed and consisting in advancing this development. By the degree or amount of CD carried by a linguistic element, I understand the relative extent to which the element contributes to the development of the communication, to which, as it were, it 'pushes the communication forward'. Thus, if examined in its unmarked use, the sentence <u>He was cross</u> could be interpreted in regard to the degrees of CD as follows. The lowest degree of CD is carried by <u>He</u>, the highest by <u>cross</u>, the degree carried by <u>was</u> ranking between them."

(Firbas 1971, p. 135-136)

"We hold that between the comparatively least important element, the theme proper, and the comparatively most important element, the rheme proper, one can observe a gamut of degrees of varying importance, of varying communicative value, of varying CD. It is, of course, not always easy to draw an exact dividing line between the transition and the theme on the one hand, and the transition and the rheme on the

other. In such cases it is necessary to attempt at least a correct
e s t i m a t e of the relative importance of the elements composing
the analysed structure."
(Firbas 1959, p. 42)

"In this connection it is worth notice that in some cases even a the-
matic element may contribute considerably to the development of dis-
course. Thus in a sentence of the type A girl broke a vase, the the-
matic subject carries a comparatively high degree of CD (the non-ge-
neric indefinite article marking out a new idea). Yet as the other
elements are more dynamic still, the subject is felt to be thematic
owing to the p r e s s u r e exerted by the basic distribution of CD.
This means that the fact of the theme carrying the least amount of CD
does not preclude the possibility of its carrying a new piece of in-
formation."
(Firbas 1959, p. 42-43)

"I believe that much valuable light can be thrown on the function of
language in the very act of communication by a consistent inquiry into
the laws determining the DISTRIBUTION of degrees of CD over linguistic
elements capable of carrying them.

The following note will be relevant here. It will answer the question
of what linguistic elements can become bearers of degrees of CD. I
agree with D.S. Worth that a linguistic element — sentence, noun phrase,
word, morpheme, submorphemic segment, etc. — may be singled out in or-
der to establish a sharp ad hoc opposition (contrast): John WAS winning.
Jenda VÍTĚZIL. The fact that VÍTĚZIL may appear in sharp ad hoc contrast
to vítězí ('is winning') shows that the element -il may become the ac-
tual bearer of the contrast. Under the circumstances it would be the on-
ly element conveying new information (and therefore be contextually in-
dependent), whereas all the other elements would convey known informa-
tion (and therefore be contextually dependent). Normally, the element
-il would not carry the highest degree of CD as it does in the highly
marked example under discussion; but even then, on account of its se-
mantic content, it would have to be regarded as a carrier of CD. All
linguistic elements, including morphemes and submorphemic exponents, are
capable of carrying degrees of CD, as long as they convey some meaning.
It may have been gathered from the above note that elements become con-

textually dependent and in consequence carriers of the lowest degrees of CD owing to the operation of the context. They assume this function irrespective of the positions they occupy within the linear arrangement. (I avoid the term 'word order' here, because words are not the only elements concerned.) Strictly speaking, contextual dependence or independence is determined by what I have called the narrow scene, i.e. in fact the very purpose of the communication. Thus in the sentence <u>John has gone up to the window</u>, <u>the window</u> may be well known from the preceding context, but the purpose of the communication being the expression of the direction of the movement, <u>the window</u> necessarily appears contextually independent. Under the circumstances, it is – to use Halliday's appropriate terms – non-derivable, non-recoverable from the preceding context.

Let me now turn to contextually independent elements. In determining their degrees of CD, two further factors are in play: (i) the semantic structure, (ii) positions of the elements within the linear arrangement. By the semantic structure of a sentence I understand the semantic contents of the sentence elements and the semantic relations into which they enter.

I will first illustrate the operation of the semantic structure. An object expresses the goal (outcome) of an action conveyed by the accompanying verb. Provided it is contextually independent, it will carry a higher degree of CD than the verb. This is because from the point of view of communication, an unknown goal (outcome) of an action appears to be more important than the action itself. A contextually independent object will carry a higher degree of CD than the verb irrespective of the positions occupied within the linear arrangement. (<u>I have read a fine book</u>, <u>Ich habe ein schönes Buch gelesen</u>. <u>Četl jsem pěknou knihu</u>.)

Similarly, a contextually independent adverbial element of place expressing the direction or destination of a motion will exceed in CD a verb expressing the motion. This is because, communicatively speaking, an unknown direction or destination of a motion is more important than the motion itself. (<u>I flew to London</u>, <u>Ich flog nach London</u>. <u>Ich bin nach London geflogen</u>, <u>Letěl jsem do Londýna</u>.)

As to the subjects of the two structures discussed in the two preceding paragraphs, each will carry the lowest degree of CD within the sen-

tence provided at least one of the remaining two elements is contextu-
ally independent. This is understandable, for a known or unknown agent
expressed by the subject appears to be communicatively less important
than an unknown action expressed by the verb and/or an unknown goal
(expressed by the object or the adverbial element of place) at or to-
wards which the action is directed. (Cf. the examples offered above and
also A girl was reading an interesting book, A girl was travelling to
an unknown town, Ein Mädchen hat ein interessantes Buch gelesen, Ein
Mädchen ist nach einer unbekannten Stadt gereist.)

The situation would be different if the subject expressed a person or
thing 'existing' or 'appearing on the scene' and if it were accompanied
by a verb expressing the notion of 'appearance' or 'existence on the
scene'. If under these circumstances it is contextually independent,
the subject will carry a higher degree of CD than the verb. This is be-
cause, communicatively speaking, an unknown person or thing appearing
on the scene is found to be more important than the fact of existence
or act of appearing itself. This holds good irrespective of the posi-
tions occupied by the respective elements within the sentence. (A girl
came into the room. Ein Mädchen kam ins Zimmer. Ins Zimmer kam ein Mäd-
chen. Ins Zimmer ist ein Mädchen gekommen. Do pokoje vešla dívka.)

Not all semantic contents and relations, however, are capable of sig-
nalling degrees of CD in the way indicated above. There are evidently
also such types of semantic content as let the linear arrangement it-
self determine the degrees of CD. Thus a contextually independent in-
finitive of purpose carries a lower degree of CD when occurring initi-
ally than when occurring finally (In order to see him, he went to
Prague, He went to Prague in order to see him). Similarly, with the
indirect and direct object, provided they are contextually independent,
the one coming later within the linear arrangement carries a higher de-
gree of CD. (He gave a boy an apple, He gave an apple to a boy.)

The notes that have just been offered have shown that the distribution
of degrees of CD over the sentence elements (the signalling of the de-
grees) is an outcome of an interplay of three factors: context, seman-
tic structure, linear arrangement. The notes have also indicated that
according to the contextual situation, in other words, the contextual
dependence, the distribution of degrees of CD over a sentence struc-

ture may vary. All the possible variations (realizations of the distri-
bution) constitute the contextual applicability of the sentence struc-
ture. Before proceeding further, let me insert a note on the linear ar-
rangement.

Sentence linearity is an indisputable fact. It makes the speaker/writer
arrange the linguistic elements in a linear sequence, in a line, and
develop the discourse step by step. I believe to be right in assuming
that the most natural way of such gradual development is to begin at
the beginning and proceed in steady progression, by degrees, towards
the fulfilment of the communicative purpose of the discourse. If this
assumption is correct, then a sequence showing a gradual rise in de-
grees of CD (i.e. starting with the lowest degree and gradually pass-
ing on to the highest degree) can be regarded as displaying the basic
distribution of CD. I also believe to be right in assuming that this
conclusion is quite in harmony with the character of human apprehension.

On the other hand, it seems to be equally in accordance with the char-
acter of human apprehension that in a discourse made up of a longer
string of verbal sentences, the basic distribution of CD in the fullest
sense of the word (i.e. one throughout which, gradually, every element
becomes a carrier of a higher degree of CD than its predecessor) can
practically never be accomplished. Within such a distribution every ele-
ment would convey new information. But this is not the way the discourse
is structured. In order not to jeopardize comprehension, the discourse
is continually interspersed with elements conveying information known
(derivable, recoverable) from the previous context, i.e. by elements
that have been designated here as contextually cependent. It is through
these elements that relief from the steady flow of new information is
constantly provided.

The field within which the distribution of CD takes place is naturally
the entire discourse. This field, which may often beocme very extensive,
is subdivided into fields of lower rank, provided, e.g., by chapters,
paragraphs, sentences, subordinate clauses. Remaining within the sphere
of complex sentences and structures ranking below them, I subscribe to
A. Svoboda's view that distributional fields are provided by grammati-
cal structures that convey either explicit (open) or implicit (hidden)
predication. (Under the latter heading come structures formed by head-
words and their accompanying attributive words or phrases.) In provid-

ing distributional (communicative) fields, grammatical structure cuts,
as it were, longer or shorter sections out of the linear flow of the
discourse. As may have been gathered from what has been said before,
according to their contextual dependence distributional fields may
f u n c t i o n in different p e r s p e c t i v e s. As the sen-
tence is not the only type of structure providing a distributional
field, it is – strictly speaking – possible to speak of other kinds of
functional perspective than that of a sentence, e.g., that of a subor-
dinate clause or that of an attributive construction.

The mutual relations between context, semantic structure and linear
arrangement may be summed up as follows. Determining the contextual
dependence of the distributional field, the context overrules the se-
mantic structure and the linear arrangement in the interplay of means
signalling the degrees of CD. It will be remembered that the semantic
structure and the linear arrangement (in other words, the basic distri-
bution of CD) can effectively perform the signalling function only
within that section of the distributional field which has remained un-
affected by the context, i.e. that section which has remained contextu-
ally independent."
(Firbas 1971, p. 136-139)

"Semantic structure ceases to operate in what we have termed after D.L.
Bolinger second instance sentences, i.e. in such as contain one element
singled out for special attention (usually for the sake of heavy con-
trast) and functioning as one-element rheme proper, all other elements
forming an extensive theme proper. Any element can become rheme proper
within second instance (HE wrote an interesting book)."
(Firbas 1966, p. 241)

" . . . we maintain that the function of the sentence in the act of
communication can be successfully interpreted if three levels are kept
separate: those of the semantic and the grammatical structure of the
sentence and that of FSP. As we see it, the theory of FSP makes it pos-
sible to understand how the semantic and the grammatical structure of
the sentence function at the very act of communication, i.e. at the
moment they are called upon to convey some extra-linguistic reality re-
flected by thought and are to appear in an adequate kind of perspective."
(Firbas 1966, p. 241)

It is important to stress the great difference between the Prague school's FSP and the use of the terms 'theme' and 'rheme' by Halliday (1967-68) or Enkvist (1974), whose 'themes' and 'rhemes' are synonymous with initial resp. final sentence elements. The Prague concept of CD is a generalization and an abstraction from analyses of concrete texts, where it is possible to divide every sentence into the known ('given', context dependent) part and the unknown ('new', context independent) part, a generalization and an abstraction which is valid even for the initial sentence of a discourse, where all information may be 'new' ('Once upon a time there was a king.'), and isolated sentences without any known context.

Appendix B (Two Remarks on Reflexives)

It is rather difficult to discuss the earlier attempts to explain English reflexives since nearly all crucial examples in Jackendoff (1972) or Postal (1971) are semantically dubious — e.g. 'I sold the slave myself.' or 'I bought the slave for himself.' Let's take just one reasonable 'sample':

*John was shaved by himself. (with unstressed 'himself')

Postal (1971) proposes for sentences like this a constraint called the Cross-Over Principle, which says roughly that a transformation cannot move an NP over another NP with which it is coreferent. However, this cannot explain why the same sentence is okay with stressed 'himself' and Postal has to claim that the above-mentioned sentence with stressed 'himself' has the following 'fancy' Deep Structure:

$[\text{the one } [\text{one shaved John}]_{S_1} \text{ was John}]_{S_2}$

Of course, it is impossible to prove that a theory which uses such powerful instruments as global constraints and which can postulate a new

abstract deep structure every time it meets a problem, is wrong, but it would be nice to do without such things.

Jackendoff's solution is based on his so-called Thematic Hierarchy Condition on Reflexives (this has nothing to do with the notion of 'theme' of FSP) which operates with semantic roles vaguely reminiscent of Fillmore's 'cases'. As another version of Jackendoff's Thematic Hierarchy Condition (on the passive transformation) is wrong (as Gee (1974) has shown) it would be rather optimistic to believe that this one does work, and Jackendoff does not make any attempt to explain why there should be any difference between the effect of his condition on the sentence with an unstressed and a stressed 'himself', either.

I believe that even the behaviour of reflexives can be explained within FSP. Our sentence with unstressed 'himself' is ungrammatical since it makes no sense from the point of view of FSP: The deep structure 'Himself shaved John' (which is, of course, wrong and which can be 'saved' by a passive transformation 'triggered' by the needs of FSP) cannot become the above-mentioned sentence with unstressed (and therefore thematic) 'himself' which would annul the result of the passive transformation. On the other hand, the stressed (and therefore rhematic) 'himself' does not clash with the needs of FSP, which triggered the passivization, and the sentence with stressed 'himself' is okay.

Harada – Saito 1971 has shown thatthere exist sentences which cannot get the right reflexive interpretation in the cyclical way Jackendoff 1972 proposes. In 'John believes himself to be hard for Bill to understand.', 'himself' must get coreferent with 'Bill' in the lower S it comes from and the correct coreferent interpretation (John + coref. himself) is blocked. But it is the same thing with all NP's which should be interpreted as coreferent but cannot be in Jackendoff's way, as Jackendoff

reasons about the cases of 'interpretatively asserted coreference' on-
ly and ignores the cases of 'sententially asserted coreference' (e.g.
The morning-star and Venus are the same celestial body.) and 'factual
coreference' (coreference based on our knowledge of the world, which
makes it possible to 'mark as coreferent' e.g. the following NP's:
'the infamous American president at the beginning of 1970's' and 'Rich-
ard M. Nixon').

The solution may be in running the interpretation in cycles parallel
to the syntactic transformational cycles with the possibility of
'loops' - e.g., reflexives would be first interpreted on their respec-
tive cycles and then, if they are raised, on the next cycle. If the
reading on a higher cycle clashes with that obtained on the lower cy-
cle the latter is annuled. This solves the problem presented in Harada
- Saito 1971. Some kind of 'reinterpretative rule' is necessary even
for the cases of 'sententially asserted coreference' and 'factual co-
reference' where the NPs in question become first marked as noncore-
ferent by the rules of 'interpretatively asserted coreference'.

Notes

This paper is an enlarged and revised version of 'Pronominalization
Rules' published in Papers from the Third Scandinavian Conference of
Linguistics, ed. by F. Karlsson, Turku 1976.

1   Wasow (1975) argues against the proposal of Harman (1972) who an-
swers in Harman (1976). However, Harman (1976) avoids the argument
presented above and his reasoning is far from convincing. For ex-
ample, one of Wasow's arguments is: It is well known that the ope-
ration of Dative Movement depends on whether the direct object is
pronominal. (*He gave me it. vs. He gave me the book.) So Dative
Movement must follow NP Placement. On the other hand, Passive can
follow Dative Movement; and, according to Harman's proposal, passi-
vization must precede the substitution of variables (NP Placement)
-- cf. the example with 'burglars'. These assumptions are, of course,
jointly inconsitent. To save his theory, Harman (1976) is forced to
'cheat' in the following way:

a) x gave y to z

b) x gave NP to z (= NP Placement of one of the variables only)

c) x gave z NP (= Dative Movement)

d) z was given NP by x (= Passive which moves only variables)

e) NP was given NP by NP (= NP Placement of the remaining variables).
This is no honest solution and it does not work either, it can save
the crucial examples with 'burglars' only if the idea of transforma-
tion cycle is given up and there is no sensible way to generate sen-
tences like 'The woman he loved deceived John.' as the pivotal point
of Harman's proposal is that the leftmost occurence of a varible is
substituted by a NP while all other occurences of that variable get
pronominalized. However, Harman's proposal was quite revolutionary,
as it was the first attempt to get rid of the 'precede and command'
rule. For example, NP Placement applies to underlying structure of
f) to yield (3):

f) $[$x left town $[$after x robbed the bank$]$ S1 $]$ S2, $[$x:John$]$

(3) John left town after he robbed the bank.

Adverbial Clause Movement applies to (3) to yield (6):

(6) After he robbed the bank, John left town.

Alternatively, Adverbial Clause Movement applies to f) yielding

g) [After x robbed the bank, x left town], [x:John]

and NP Placement follows:

(5) After John robbed the bank, he left town.

There is, however, no way to get (4):

54) *He left town after John robbed the bank.

2 There is a way to avoid the problems with NPs containing quanti-
fiers. One can claim that only a N is pronominalized by another N
instead of a NP by another NP. Then 'his' from Dougherty's example
comes about from 'son + genitive'. Unfortunately for the transfor-
mationalists, stronger arguments against their hypothesis appeared
during the seventies. For example, Kayne (1971) describes the be-
haviour of clitic pronouns in French. The argument is as follows:
Clitic movement operates only on pronouns; therefore, if there is a
transformational rule of pronominalization, it must precede cliti-
cization. However, there are cases where clitic movement should
then be able to move a pronoun to the left of its antecedent, but
the resulting sentence is ungrammatical. It means that Constraint
II demands that pronominalization follows cliticization. These in-
compatible demands can be avoided only by assuming that pronouns
are present underlyingly and get interpreted later. Those sentences
where there is no possible interpretation are ungrammatical.

3 These rules are based on what can be called 'a common denominator'
of the categories previously used to limit the possibilities of
'pronominalization', which include a specification of sentence li-
nearity, a specification of stress level, a definition of subject
and nonsubject, a definition of main clause and subordinate clause,
a specification of the sentence type (complex sentences with indi-
rect speech versus other complex sentences), etc., etc.

4 Rule E is just a special case of Rule B. It specifies one typical
case where the degree of Communicative Dynamism carried by a full
NP would be too much higher than that of a pronominal theme proper.
The restriction as it is formulated in Rule E is, in fact, to se-
vere. As we shall see later, sentences (42) and (43) show that it
is possible to have pronominal themes proper if their respective
antecedents are placed in some kind of parenthetical expression
which carries a very low degree of CD.

5 There is a usual sort of dialogue which has been observed by every‐
   body: Person A is sitting alone in an otherwise empty room. Person
   B pokes his head in and asks: ´Is he in here?´. A replies: ´Who?´
   regardless of the logical truth that the answer should be an in‐
   stant ´No.´ for any possible antecedent of ´he´.

6 See Note 4.

7 The interpretative theory has been used as it is not as discredited
   as the more usual transformational hypothesis. However, it must be
   emphasized that the conclusions are in no way dependent upon this
   theory. It would be possible to construct, for example, a model
   where pronouns are generated with indices determining coreference
   relations and the resulting sentences would be grammatical only when
   the coreference markers would not clash with the FSP interpretation
   of the transformations the sentences in question had undergone and
   their semantics.

8 and 9 follow after the bibliography.

Bibliography

Akmajian, A. (1973), "The Role of Focus in the Interpretation of
   Anaphoric Expressions", in Anderson, S.A. and Kiparski, P. (eds),
   A Festschrift for Morris Halle, p. 215-226

Akmajian, A. and Jackendoff, R.S. (1970), "Coreferentiality and
   Stress", Linguistic Inquiry 1:1, 124-126

Bach, E. (1970), "Problominalization", Linguistic Inquiry 1:1, 121-
   122

Bickerton, D. (1975), "Some Assertions about Presuppositions about
   Pronominalization", in Papers from the Parasession on Function‐
   alism, 24-35

Bresnan, J. (1971), "A Note on the Notion ´Identity of Sense Ana‐
   phora´", Linguistic Inquiry 2:4, 589-597

Chomsky, N. (1957), Syntactic Structures

         (1965), Aspects of the Theory of Syntax

         (1970), "Remarks on Nominalizations", in Jacobs and

Chomsky, N.   Rosenbaum (eds), Readings in Transformational
Grammar, 184-221

     (1971), "Deep Structure, Surface Structure, and Seman-
tic Interpretation", in Steinberg and Jakobo-
vits (eds), Semantics, 183-216

Cole, P. (1974), "Backward Pronominalization and Analogy", Linguistic
Inquiry 5:3, 425-443

Culicover, P.W. (1976), "A Constraint on Coreferentiality", Founda-
tions of Language 14:1, 101-118

Daneš, F. (1964), "A Three-Level Approach to Syntax", Travaux linguis-
tiques de Prague 1, 225-240

     (1974a) ed., Papers on Functional Sentence Perspective

     (1974b), "Functional Sentence Perspective and the Organiza-
tion of the Text", in Daneš 1974a, 106-128

Dougherty, R.C. (1969), "An Interpretative Theory of Pronominal Refe-
rence", Foundations of Language 5:4, 448-519

Dvořáková, E. (1964), "On the English and Czech Situational Adverbs in
Functional Sentence Perspective", Brno Studies in English 4, 129-142

Emonds, J. (1973), "Alternatives to Global Constraints", Glossa 7:1,
39-80

Enkvist, N.E. (1974), "Några textlingvistiska grundfrågor", in Teleman
– Hultman, Språket i bruk, p. 172-206

Fillmore, C.S. (1970), "Subjects, Speakers, and Roles", Synthese 21,
251-274

Firbas, J. (1959), "Thoughts on the Communicative Function of the Verb
in English, German and Czech", Brno Studies in Eng-
lish 1, 39-68

     (1964a), "From Comparative Word-Order Studies", Brno Studies
in English 4, 111-128

     (1964b), "On Defining the Theme in Functional Sentence Anal-
ysis", Travaux linguistiques de Prague 1, 267-280

     (1966), "Non-Thematic Subjects in Contemporary English", Tra-
vaux linguistiques de Prague 2, 239-256

Firbas, J. (1971), "On the Concept of Communicative Dynamism in the Theory of Functional Sentence Perspective", Sborník prací Filosofické fakulty Brněnske university A19, 135–144

(1974), "Some Aspects of the Czechoslovak Approach to Problems of Functional Sentence Perspective", in Daneš 1974, 11–37

Gee, J.P. (1974), "Jackendoff's Thematic Hierarchy Condition and the Passive Transformation", Linguistic Inquiry 5:2, 304–308

Grinder, J. and Postal, P.M. (1971), "Missing Antecedents", Linguistic Inquiry 2:3, 269–312

Halliday, M.A.K. (1967–68), "Notes on Transitivity and Theme in English", Journal of Linguistics 3, p. 37–81, 199–244; 4, p. 179–215

Harada, S.I. and Saito, S. (1972), "A Non–Source for Reflexives", Linguistic Inquiry 2:4,

Harman, G. (1972), "Noun Phrases Derived from Variable Binding Operators". To appear in Forms of Representation, ed. by Freed, Marras and Maynard

(1976), "Anaphoric Pronouns as Bound Variables: Syntax or Semantics?", Language 52:1, 78–81

Hinds, J. (1975a), "Passives, Pronouns, and Themes and Rhemes", Glossa 9:1, 79–106

(1975b), "Backward Pronominalization across Coordinate Structures", Linguistic Inquiry 6:2, 330–335

Jackendoff, R.S. (1968), "An Interpretative Theory of Pronouns and Reflexives". (Mimeographed by Indiana University Linguistics Club, Bloomington)

(1972), Semantic Interpretation in Generative Grammar

Karttunen, I. (1971), "Definite Descriptions with Crossing Coreference. A study of the Bach–Peters Paradox". Foundations of Language 7:2, 157–182

Kuno, S. (1972a), "Pronominalization, Reflexivization and Direct Dis-
            course", Linguistic Inquiry 3:2, 161-195

        (1972b), "Functional Sentence Perspective", Linguistic In-
            quiry 3:3, 269-320

        (1975), "Three Perspectives in the Functional Approach to Syn-
            tax", in Papers from the Parasession on Functionalism,
            276-336

        (1976), "Three Perspectives in the Functional Approach to Syn-
            tax", in Sound, Sign and Meaning. Quinquagenary of the
            Prague Linguistic Circle, edited by L. Matejka, p. 119-
            190

Kuroda, S.Y. (1971), "Two Remarks on Pronominalization", Foundations of
    Language 2:2, 183-198

Lakoff, G. (1968), "Pronouns and Reference". (Mimeographed by Indiana
            University Linguistics Club, Bloomington)

        (1970), "Repartee, or a Reply to 'Negation, Conjunction and
            Quantifiers'", Foundations of Language 6, 389-422

Langacker, R.W. (1969), "On Pronominalization and the Chain of Command",
    in Reibel and Schane (eds), Modern Studies in English, 160-186

Lees, R.B. and Klima, E.S. (1963), "Rules for English Pronominalization",
    Language 39:1, 17-28

MacColl, S. (1972), "A Note on Dougherty's Anapornia", Foundations of
    Language 9:1, 114-118

McCawley, J.D. (1968), "Lexical Insertions in a Transformational Gram-
            mar without Deep Structure", in Darden et al.,
            Papers from the Fourth Meeting of the Chicago
            Linguistic Society, 71-80

        (1970), "Where Do Noun Phrases come From?", in Jacobs
            and Rosenbaum (eds), Readings in Transformation-
            al Grammar, 166-183

Pala, K. (1974), "Semantic Classes of Verbs and FSP", in Daneš 1974,
    196-207

Postal, P.M. (1971), <u>Cross-Over Phenomena</u>

       (1972a), "A Gobal Constraint on Pronominalization", <u>Lin-guistic Inquiry</u> <u>3</u>:1, 35-59

       (1972b), "Some Further Limitations of Interpretative Theories of Anaphora", <u>Linguistic Inquiry</u> <u>3</u>:3, 349-371

Ross, J.R. (1967), "On the Cyclical Nature of English Pronominaliza-tion", in To Honor Roman Jakobson, 1669-1682

Spangler, W.E. (1970), "Locative Restraints on the English Reflexive", <u>Word</u> <u>26</u>:1, 114-118

Svoboda, A. (1968), "The Hierarchy of Communicative Units and Field as Illustrated by English Attributive Construc-tions", <u>Brno Studies in English</u> <u>7</u>, 49-102

       (1974), "On Two Communicative Dynamisms", in Daneš 1974, 38-42

Teleman, U. (1970), "On Noun Phrases with Identical Reference", in <u>Proceedings of the Conference of General and Nordic Linguistics</u> in Reykjavik 1969

Wasow, T. (1973), "More Migs and Pilots", <u>Foundations of Language</u> <u>9</u>:3, 297-305

       (1975), "Anaphoric Pronouns and Bound Variables", <u>Language</u> <u>51</u>:2, 368-383.

Note 8 After having finished this paper, I could read the doctoral dissertation of T. Wasow ("Anaphoric Relations in English", unpublished, Massachusetts Institute of Technology, 1972), which contains some counter-examples to Rule A, mostly sen-tences with generic NPs. ('When they are hungry, tigers can be dangerous.', 'If he has an ugly wife, a man should find a mistress.' etc. - The male chauvinist pig is Postal ("On Coreferential Complement Subject Deletion", <u>Linguistic In-quiry</u> <u>1</u>:4, 439-500), not me.)Such 'generic pronouns' can be perhaps explained as having 'antecedents in the situation' in the sense of our knowledge of the words used in generic

sense. As for Wasow's other examples with indefinite but
specific 'postcedents', ('After Bill kissed her, a certain
young lady blushed repeatedly.', 'That he was not elected
upset a certain leading politician.' etc.), these are ex-
amples of the speaker's power to present a part of a sen-
tence as 'known to the listener', even when it is probable
that the knowledge is not shared by the listener. The
speaker talks in indeterminate terms, but he has a defi-
nite lady/politician in his mind.

Note 9   In the paper mentioned in Note 8, Wasow has also shown
that some pronominal rhemes proper standing before their
'antecedents', are possible in special contexts, e.g.: 'Was
it after you robbed the bank, that Mary left town? No. Af-
ter HE robbed the bank, John left town.' It is quite im-
possible in sentences blocked by Rule B and C (cf. (35) and
(37)). Some more examples where Rule D cannot be cancelled
by any context:
*It was HE who killed Peter's wife.
*It was HIM Peter's wife killed.
*It was HIS wife who killed Peter. (Compare with 'It was
his WIFE who killed Peter.'.)
*It was HIM Peter's wife killed. etc.
(See also sentences (78) — (86) in the main text.)