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COREFERENCE RULES IN CZECH
AND
FUNCTIONAL SENTENCE PERSPECTIVE

In the Introduction, the problem of coreference is stated.
Part I of the paper gives a short survey of existing theo-
ries, and Part II shows how coreference phenomena in Czech
(and presumably in many other languages) can be accounted
for with FSP.

INTRODUCTION

1.1. There exists a linguistic problem which is studied
in languages as far apart as Swedish (Edmondson and Lindau
1972) and Samoese (Chapin 1970). It is the problem of core-
ference, i.e. the problem under which circumstances two (or
more) Nominal Phrases can refer to an identical referent.
In an isolated sentence, certain NPs are said to be ambig-
uous for coreference, e.g. *Petr řekl, že (on) přijde*. (Peter said
that he would come), where *Petr* can refer to the same person
as *on* or the zero subject expressed via verbal congruence,
or *on*/zero subject refers to another referent (= *Petr* and
the subject are non-coreferential). Of course, in written
texts or in speech, the question of reference can be deter-
mined by the context and/or situation, and by the semantics.
Even the semantics alone can disambiguate some isolated sen-
tences: *Bojí se, že přijde pozdě*. (He is afraid that he will come late)
is, as an isolated sentence, ambiguous. The subject of the
subclause may be coreferential with the zero subject of the
main clause, or it may refer to another referent. However,
*Bojí se, že přijde.* (He is afraid that he will come) can hardly be in-

terpreted in the former sense, as 'to come' in connection with a person 'presupposes' a volitional act which the person who is afraid could avoid if the subjects were coreferential. The fear demands that the subject of the main clause cannot control the action of the subject of the subclause, in other words, the subjects cannot be coreferential. The sentence with 'coming late' is different because one can be afraid both of one's non-volitional coming late or somebody else's (which can be either volitional or non-volitional). It might still be possible to construct a special context where the former sentence would demand the coreferential interpretation but there exist cases where semantics disambiguates so decisively that no context can change the coreferent reading. *Karlovi je v jeho pokoji zima* (Charles is cold in his room) is ambiguous, while the use of the reflexive pronoun makes the coreferential interpretation the only possible one: *Karlovi je ve svém pokoji zima.*

1.2. On the other hand, there exist sentence structures where the coreferential reading of certain NPs is quite impossible regardless of any context or our will to use them in the coreferential sense, as **(On) řekl, že Karel přijde* (* He said that Charles would come). (Here and in the following text, the asterisk-prefixed sentences are meant not to be able to express coreference, i.e. nothing is claimed about their grammaticality.) Thus, while the choice of the correct interpretation in concrete consituations presumably belongs to language performance, there must be some competence rules, (rules of text competence) too, which make certain coreference interpretations impossible.

1.3. Coreference rules have been studied in many languages. However, almost all papers I know about are derived from the generative attempts to describe 'pronominalization' in English. It may be useful to say some words about them. (The reader who may want to know more about these attempts is referred to Bílý (1977a), which gives an account of them and my own (partially out-of-date) coreference rules for English).

PART I

2.1. The standard transformational theory of pronouns
and reflexives (Lees and Klima 1963, Chomsky 1965, p. 145
-146, Ross 1967, Langacker 1969) assumes that pronouns
originate as fully specified NPs identical to their ante-
cedents (and their 'postcedents') in deep structure.
Transformations change these NPs into pronouns on the ba-
sis 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'. (According to Chomsky 1965, p. 146, each NP has
an as associated index in deep structure and two NPs are
coreferential if they have the same index). The following
constraint on 'pronominalization' is generally accepted:

NP^a may pronominalize NP^p unless (1) NP^p precedes NP^a; and
(2) NP^p commands NP^a. (E.g. Langacker 1969, p. 167. Also
Ross 1967 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 dominate each other and b) the S-node that most immedia-
tely dominates A also dominates B. In the 1) and 2) struc-
tures A commands B and vice versa, but in 3) and 4) only
A commands B, B does not command A:
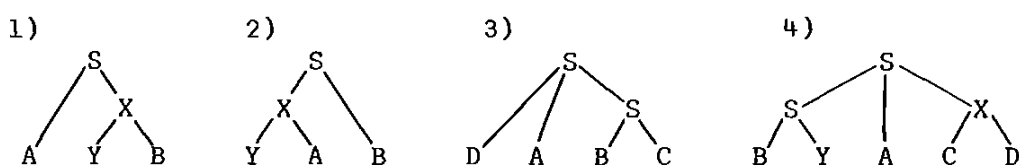
(The symbol 'S' always stands for a clause, the other sym-
bols stand for any other part of an 'S' than 'S').
Sentences (1) - (4) exemplify the constraint:
(1) *Když Marie dostala dopis, (ona) omdlela.*
    (When Mary got the letter, she fainted).
(2) *Když (ona) dostala dopis, Marie omdlela.*
    (When she got the letter, Mary fainted).

(3) *Marie omdlela, když (ona) dostala dopis.*

   (Mary fainted when she got the letter).

(4) * *(Ona) Omdlela, když Marie dostala dopis.*

   (* She fainted when Mary got the letter).

(Star-prefixed sentences are meant not to be able to express coreference between two NPs, i.e. nothing is claimed about their grammaticality).

2.2.1. One of the problems that made many linguists discard the original transformational theory of pronominalization is the so-called Bach-Peters paradox (Bach 1970), which is hard to explain with the pronominalization hypothesis:

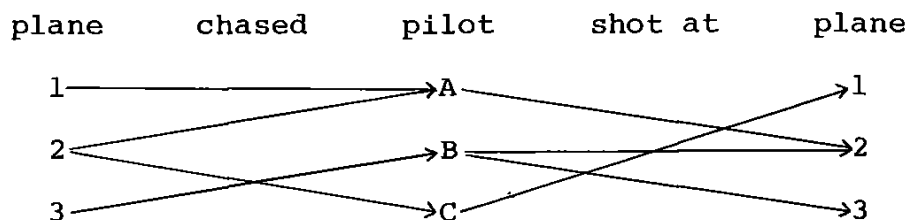*The pilot who shot at it hit the Mig that chased him.*

There are three possible meanings of this sentence (Karttunen 1971, Kuroda 1971) for which the transformationalists have to find three different deep structures. (According to the transformationalists, every meaning of a given 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 the above-mentioned sentence depending on the depth of pronominalization in the possible infinite recourse. Therefore the transformationalists would have to discover infinitely many distinctive readings for the sentence!

2.2.2. The above-named sentence 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 structure of our sentence. 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 realizing it, that c) is something else than a) and b). It is not necessary to refer to a non-existing 'data base'. The fact that
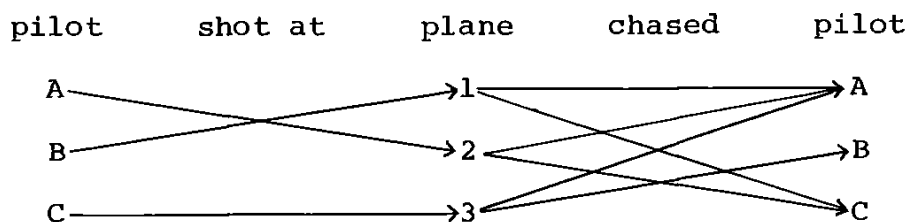
there do exist these three meanings can be shown in the following 'data bases' taken from Kuroda (1971) and Kart-tunen (1971):
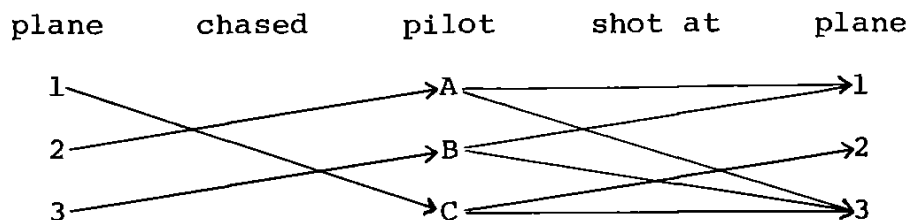
'Data base 1'

```
    plane       chased      pilot      shot at      plane

    1 ───────────────────────→A                      →1
                                  ╲                ╱
    2←────────────────────────→B ────────────────────→2
         ╲                ╱         ╲            ╱
    3 ────────────────────→C                      →3
```

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

    A╲                    →1 ──────────────────────→A
       ╲                ╱       ╲                ╱
    B ──────────────────→2←───────────────────────→B
                              ╱        ╲        ╲
    C ──────────────────→3←───────────────────────→C
```
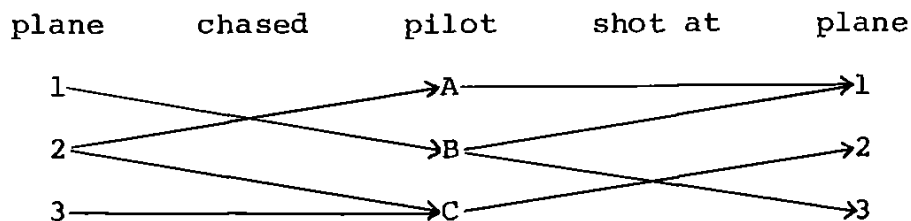
Only the pilot A and the plane 2 qualify for the meaning b) and c), but no pilot and plane qualifies for meaning a).

'Data base 3'

```
    plane       chased      pilot      shot at      plane

    1╲                    →A ──────────────────────→1
       ╲                ╱       ╲                ╱
    2 ──────────────────→B←───────────────────────→2
       ╱        ╲                ╱        ╲
    3 ────────────────────→C←──────────────────────→3
```

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

    1╲                    →A ──────────────────────→1
       ╲                ╱
    2←────────────────────→B←───────────────────────→2
       ╱                          ╲        ╱
    3 ──────────────────→C                 →3
```

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).

2.3.1. An attempt to save the pronominalization hypoth-
esis was made and criticized in Wasow (1975). He dis-
cusses the use of so-called bound variables which would
make it possible to derive such sentences from a deep
structure which can be simplified as [x:the pilot]
[y:the Mig], [x[shot at y] hit y[y chased x]]. He shows
that pronominalization in such a deep structure would
generate certain ungrammatical sentences and it could not
generate all grammatical sentences, because several syn-
tactic rules in English are sensitive to the difference
between pronouns and full NPs. If pronouns and their ante-
cedents are derived from such variables, then these rules
cannot apply correctly. (Additional arguments against
bound variables proposed by Harman (1972) and (1976) were
presented in Bílý (1977a, p. 46)).

2.3.2. Wasow gives, among other things, the following
argument. If bound variables are accepted, the sentence
with the simplified deep structure [x:some burglars],
[x shot a man who discovered [that x were in his house]]
will give 'Some burglars shot a man who discovered that
they were in his house'. (via substitution of 'x' in ac-
cordance with the syntactic constraint on pronominali-
zation) 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 well-known, 'there-insertion' in existential
sentences is possible only when the NP in question is an
indefinite one. (Cf. the ungrammatical 'There is the man
at the door'). Wasow examines the ungrammatical 'Some bur-

glars shot a man who discovered that there were t h e y
in his house' and the correct 'A man who discovered that
there were some burglars in his house was shot by them'.
On the lowest transformational cycle in the latter sen-
tence, there-insertion is applied, then passivization
comes on the next cycle, and after that 'x' is substitu-
ted. But if passivization does not occur on the second
cycle but only substitution, the former ungrammatical
sentence is the unavoidable result; that is, the latter
(correct) sentence can be generated only if the former
(ungrammatical) sentence can.

2.4.1. Wasow proposes an interpretative approach to the
problem to save the bound variables. But this is already
the method advocated by interpretativists (Dougherty 1969,
Jackendoff 1968, 1972, Chapter 4 and 5) who do not need
to postulate such abstract deep structures as those in
the papers of Harman. Interpretativists claim that a) Pro-
noun forms are inserted into deep structures just like
any other NPs, b) Coreferentiality between the full NP
and the pronominal NP is a semantic judgement on the part
of speakers/listeners and thus statements involving co-
reference should not appear in the formulation of any
transformation, c) Describing 'pronominalization' amounts
to discovering certain rules of semantic interpretation.

2.4.2. Among the arguments interpretativists use against
transformationalists (besides the Bach-Peters paradox)
these two are probably the strongest:
1) At least deictic 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. There is no
sensible way of determining what the 'original full NP'
should have been).
2) Kayne (1971) describes the behaviour of clitic pronouns
in French. The argument is a follows: Clitic movement
operates only on pronouns. Therefore, if there is a trans-

formational rule of pronominalization, it must p r e c e d e
c l i t i c i z a t i o n . However, there are cases where cli-
tic movement should be able to move a pronoun to the left
of its antecendent, but the resulting sentence is ungram-
matical. This means that pronominalization must also f o l -
l o w c l i t i c i z a t i o n in order to avoid generation
of ungrammatical sentences. These two incompatible demands
can be avoided only by assuming that pronouns are present
underlyingly and get interpreted later.

2.4.3. For example, Jackendoff (1972, Chapter 4 and 5) ex-
presses 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 con-
sistent both internally and in relation to the rest of se-
mantic representation. Jackendoff's rules for pronominal
coreference are supposed to work as follows: the rules ap-
ply 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 the syntactic constraint on 'pronominalization', al-
though 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 or B dominates 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.

2.5.1. Generally speaking, the bulk of the work on pronomi-
nalization tries to establish some syntactic constraint on

pronominalization. The basic constraint (the above-mentioned one or some other - e.g. Cullicover (1976 p. 110), Reinhart (1977 p. 148) etc.) is then successively modified (since it does not work) by new syntactic or other constraints (Lakoff 1968 p. 15, Kuno 1972a, Postal 1971,1972 p. 48, Hinds 1975a etc, etc). For example, a number of 'exception rules' are formulated for constituents bearing sentence stress. However, while the relations between sentence stress and pronominalization are at times noted (Lakoff 1968, p. 10-14, Postal 1971, chapter 19, Akmajian 1973, Hinds 1975b, Akmajian and Jackendoff (1970) etc), these amendments lie at the perifery of the study of coreference. They have never made an inte- grated coreference system; they are usually mere ad hoc patchworks.

2.5.2. Just to name some of the additional constraints: Lakoff (1968, p. 6-7) showed that 'backward pronominalization' from a subordinate clause to a main clause (which is against the syntactic constraint) is possible if the pronoun 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.
But this additional rule does not suffice, either, as can be seen from the following sentences: * I showed him Peter's photo. * I told him that Peter had made a mistake. One would be forced to formulate an exception rule to Lakoff's rule, e.g. to differentiate between 'dative objects' and 'non-da- tive objects', which may be sufficient for the majority of English sentences but not all of them, e.g. * It worries her that Mary is pregnant., for which one would have to formu- late an additional restriction for some 'accusative objects', e.g. a restriction for such objects in sentences with extra- posed subject subclauses etc etc.

2.5.3. Another (patently wrong) attempt was made by Kuno (1972a), using so-called 'direct discourse analysis', to ex-

plain sentences like (a) (with unstressed 'him'):

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

The deep structure of (a) is said to be something which
can be roughly described as 'John claimed: I am the best
boxer in the world'. Since the subject of the embedded
sentence is a pronoun from the beginning, there is no
possibility to realize it as 'John' and therefore it is
not possible to derive the ungrammatical (a). Unfortuna-
tely we can find sentences like (b) - (d), which should
be equally wrong according to 'direct discourse analysis'
but which are not. The fact that (a) is correct with
stressed 'him' makes things even worse. (Cf. sentence (f)).

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

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

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

The above-mentioned 'direct discourse analysis' of (a) (Ku-
no 1972a) was refuted by Hinds (1975a). The invalidity of
Kuno's claim was proved by (b), (c), and (d). According to
Hinds (1975a, p. 92), 'pronominalization' is impossible
when passivation had been used to indicate that a NP is
'rhematic'. (Quotation marks are used because 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 (e) shows. What is wrong
with (a) when (b), (c), (d), (e), (f), and even (g) are okay?

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

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

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

(a) 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 parti-
ciple and copula. But it seems difficult (without con-
trastive 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 co-
pula or the participle could be the rheme proper. This has
nothing to do with coreference. (h) sounds as bad as (a).
(h) * That John was the best boxer in the world

   was claimed by her. (pronounced with unstressed 'her').
(b) - (g) are okay since the VPs are made naturally rhematic
with the rhematic adverb 'never', with the amplification
of the verb with 'loudly and repeatedly' etc. (f) has the
rhematic 'HIM'. (e) and (g) contain participles which can
also be rhematic in a natural way - e.g. 'deny' implies
negation and negation usually belongs to the rheme.

2.5.4. Postal (1972) postulates a so-called Global Con-
straint on Pronominalization to be able to differentiate
between (a) and (b):
(a) Who killed his wife?
(b) * Who did his wife kill?

"4) 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." (Postal 1972, p. 48).

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, p. 432 ff) shows that Postal's inform- ants' judgements of his sentences are not at all fully re- presentative for English speakers. Cole, who explains the difference between (a) and (b) as a special case of a con- straint found in English against 'backward pronominalization with indefinite antecendents' (Cole 1974, p. 426-431), also shows that (b) is correct if pronounced as an 'incredulity question' or a 'quiz master question' (i.e. various 'question types' that are not genuine requests for information - 'in- credulity questions' just show the speaker's surprise caused by what he has just heard, the other type is used by quiz masters, pedagogues etc. to elicit an answer that is known by them beforehand). Unfortunately, Cole's restriction for English is not correct either as can be seen by translating our sentence (19) (3.9.4.) into English: If it has its way of retreat blocked, even a little animal can attack a man.

2.5.5. One should be conscious of the difference between the rules of coreference and the possibilities given by the semantics of a given sentence and our knowledge of the world. For example, (c) is okay, while (d), which has the same theme-rheme structure (as well as deep structure and surface structure) does not allow coreference since it is practi- cally impossible to imagine a context where the question is who was eaten by whom. If we succeed in imagining a suitable context, coreference becomes possible. Thus, Postal (1972, p. 40) made a mistake when he made the s e m a n t i c a n d p r a g m a t i c w r o n g n e s s of (d) a part of his reason- ing about s y n t a c t i c c o n s t r a i t s on pronominal- ization.

(c) His brother was visited by John. (In the context where 'who was visited by whom' needs to be explained).

(d) ?? Their keepers were eaten by the tigers. The neces-
sity of considering even absurd and abnormal contexts when
analyzing absurd example sentences used by some linquists
was pointed out by Bolinger (1977, e.g. p. 53). Thus (d)
would be a correct sentence in the crazy context of con-
sidering whether the keepers were eaten by the tigers or
the tigers by the keepers.

2.5.6. The result of the 'unsolvable problem' - 'no struc-
turally statable restrictions' (Keenan 1976, quoted in Bo-.
linger 1977, p. 1) - is a resignation which can be observed
in an otherwise very good paper by Bolinger (1977). He gives
a huge amount of examples clashing with practically all
generative rules of 'pronominalization' without offering
any general explanation. Bolinger talks about 'pragmatic
restrictions', using them as a sort of wastepaper basket
for all unsolved problems. Other generativists, e.g. Lasnik
(1976) and Hankamer and Sag (1976) silently accept the old
'precede and command' rule, as if it worked.

PART II

3.1.1. It seems quite obvious that coreference problems
belong to text linguistics. For example, pronouns are above
all used to connect a sentence with the previous linguistic
context and/or the situation. Unfortunately, papers written
by authors who have some of the Slavic languages as their
mother tongue, concerning text linguistics have, as far as
I know, largely ignored the problems of coreference (viz.
they have not tried to formulate any rules for when corefer-
ence is possible and when not) or the area is just touched
on. Thus, Hiż (1969) shows that 'referentials' are one of
the main links between sentences of a text, and exemplifies
the possible linkings - e.g. pronouns, synonyms, quanti-
fiers, 'zero referentials' (I met a friend = I met a friend
of mine), repetition of NPs, relational nouns (Bob and Jane
left their appartment. T h e h u s b a n d carried a suitcase)

etc. Padučeva (1973) discusses similar problems: What two
NPs in a text must be like if they are to refer to the same
referent, but she analyzes intersentential coreference only.

3.1.2. The 'Slavic orientated' authors may be hampered in
their research by their rare use of the 'western' ungram-
matical sentences. Thus while Padučeva (1973) uses even
ungrammatical sentences in her reasoning, Padučeva (1972)
analyzes correct, grammatical sentences only. Also Palek
(1968) and (1972) is mostly interested in describing the
relations in correct texts. Similarly Daneš (1968) and
(1974b) is interested only in types of thematic progres-
sion without considering what cannot constitute such pro-
gression. However, Palek (1968, p. 261, 263) touches even
the problem of 'graded givenness' (a soldier - the sol-
dier - he). The grades of 'givenness' are also described
in Mistrík (1975, p. 645-646), where the difference be-
tween enclitic and long pronouns in Slovak is analyzed:
"Die Langformen werden dann gebraucht, wenn sie im Satz
die Funktion des Bedeutungskerns oder hervorgehobenen Aus-
gangspunktes (východisko) haben oder wenn sie mit Präpo-
sition auftreten. Die Kurzformen, d.h. die Enklitika, sind
lediglich Konnektoren, Verknüpfungswörter, mit Hilfe derer
sich eine neue Äusserung an den vorausgehenden Kontext an-
lehnt. Sie sind rekursive deiktische Mittel, die primär in
der Kontextsituation orientieren...
A: *Jeho sme stretli v meste.* (Him we met in the town).
   V meste sme stretli len jeho. (In the town we met only him).
B: *Stretli sme ho v meste.* (We met him in the town).
...In A liegt auf dem Pronomen Emphase, die dem Satz zu-
sätzliche Information liefert. In B knüpft das Enklitikon
nur einen neuen Satz an die Situation an."

In the first A sentence 'jeho' is 'given' but not to
the same extent as in B; in the second A sentence the lexi-
cal means of FSP ('len') signalizes that the pronoun is
the rheme proper. (Here and in the following text, all sen-

tences are taken at their 'face value', as if pronounced
with the 'normal', 'unmarked' intonation, if not indi-
cated otherwise).

3.2.1. The rules which will be presented here are based
on what can be called 'a common denominator' of the cate-
gories previously used to limit the possibilities of co-
reference. These include a specification of sentence line-
arity, a specification of stress level, a definition of
subject and non-subject, a definition of main clause and
subordinate clause, a specification of sentence type (com-
plex sentences with indirect speech versus other complex
sentences', passive sentences versus active sentences), etc.
etc. Although FSP belongs to text linguistics, it is pos-
sible to speak about the distribution of Communicative Dy-
namism (CD) even in isolated sentences which we analyze
out of their context. When no context is known, everybody
'reconstructs' a type of context in which the sentence in
question could be used. It is always the 'normal' use of
an isolated sentence we contemplate, i.e. the sentence is
taken at its 'face value'. That's why only the 'marked'
stresses in example sentences are indicated by capital
letters, otherwise all sentences are supposed to have 'un-
marked' sentence stress.

3.2.2. This approach to isolated sentences is primarily
based on the works of Firbas on FSP (for the bibliography
see Firbas 1974) with his concept of the gradual scale of
Communicative Dynamism (CD) instead of the 'orthodox' sen-
tence bi-partition (or tri-partition) - theme-(transition)-
rheme. In accordance with Svoboda (1968), all sentences are
viewed as Communicative Fields (CF) consisting of Communi-
cative Units (CU) carrying certain degrees of CD. In their
turn, the CUs expressing a predication or a hidden predi-
cation (subclauses, NPs consisting of more elements than
a noun, participal constructions etc.) can be analysed as
CFs of the highest but one rank, consisting of CUs etc.

3.3.1. In this paper, I take the correctness of Firbas' theory for granted, but it may be reasonable to remind the reader how the gamut of CD can be established.
To determine the scale of CD within the rhematic part of a sentence is quite easy with Bogusławski's Operation of Eliminatory Contrast - OEC (Bogusławski 1977, p. 183-206). OEC works as follows: One negates the analyzed sentence and determines which sentence part(s) can be substituted by another expression in an additional clause.

E.g.: *Karel koupil auto.* (Charles bought a car).

Karel nekoupil auto nýbrž (koupil) motocykl.

(Charles didn't buy a car but (he bought) a motorcycle).

Karel nekoupil auto, nýbrž prodal motocykl.

(Charles didn't buy a car but he sold a motorcycle).

(An originally negated sentence would also be denied by a positive substitution).

KAREL nekoupil auto, nýbrž PETR (koupil auto)

(CHARLES didn't buy a car but PETER did)

and *Karel NEKOUPIL auto, nýbrž PRODAL (auto)*

(Charles didn't BUY a car but he SOLD it)

are unsuitable as they would be pronounced with differently placed intonation centres, i.e. these sentences are not identical with the original analyzed sentence. The element substituted in all possible operations (= 'auto' in our example) is the Communicative Unit with the highest degree of CD, the element substituted in all operations but one carries the next highest degree of CD etc. The elements that cannot be substituted at all belong to the theme.

3.3.2. As for the thematic part, it is more difficult to establish the gamut of CD in an objective, not only an intuitive way. But even here there exist some tests. For example, Dahl (1974, p. 78) noticed the difference in the interpretation of a sentence pair like

a) *Eva Marii závidí a totéž platí o Heleně.*

(Eve envies Mary and the same is true for Helen)

b) *Marii Eva závidí a totéž platí o Heleně.*

(Mary is envied by Eve and the same is true for Helen).

In a) 'Helena' is the 'Deep Structure subject' of second sentence, while in b) 'Helena' is the object. 'Eva' is the theme proper of a), while 'Marii' is the theme proper of b).

3.3.3. Also many authors who are trying to discover a 'neutral word-order' in Slavic languages, where FSP is the leading principle of word-order, in non-emotional sentences, (i.e. an abstract, context-free word-order) - e.g. Adamec (1962), ·Benešová (1968) and (1971), Bílý (1977b), Isačenko (1966), Kovtunova (1974), Sgall (1973) etc. - try to establish a scale of CD inherent to the semantics and grammatical forms of the given sentence with minimal context-dependence.

3.3.4. A remarkable fact of 'givenness degrees' (= CD degrees) was noticed by van Dijk (1977, p. 124-125): "Once upon a time there was an old king. He had three daughters. One of them was called Belle. She loved her father very much." The last sentence cannot be substituted with 'He was her best friend'. 'He' would stand in a sharp FSP contrast to the rest of the sentence. 'He' is not 'given' enough to be able to stand in this context. 'He loved her most of all' is acceptable as 'her' partially diminishes the FSP contrast. 'her' in the former sentence belongs to the Communicative Unit 'her best friend', which is rhematic, while 'her' in the latter sentence is a thematic CU itself in the Communicative Field of the highest rank (of the whole sentence). 'Her father was her best friend' is also acceptable as 'her father' reintroduces the king.

3.3.5. Even the simple test of Sgall (1970, p. 68-71) - I tell you about x that S - and the traditional definition of the theme as what the sentence is about, suit, e.g., better the subject than the object of the sentence 'Karel Evu miluje' (Charles loves Eve), showing the difference

of thematicity, in other words, the different degrees
of CD carried by 'Karel' and 'Evu'.

3.3.6. Other examples showing the degrees of 'givenness':
(5) *Karel Petra uhodil a Eva ho kopla.*

     (Charles punched Peter and Eve kicked him).

(6) *Karel Petra uhodil a Eva uhodila jeho.*

     (Charles punched Peter and Eve kicked HIM).

(5) is ambiguous as for a coreferential reading of the pro-
noun and 'Karel' or 'Petra', though the reading "'Petra'
is coreferential with 'ho'" is certainly prefered.
(Of course, a suitable context can disambiguate (5). For
example, (5) can be preceded by the question 'Proč Karel
pláče?'. Then 'Karel' is 'given to such an extent' that 'ho'
must presumably be interpreted as coreferential with 'Karel').
In (6) the same action ('punching') goes on but with a dif-
ferent 'victim'. (6) shows that 'thematicity' is not syno-
nymous with 'mentioned in the context'. 'Karel', which is
coreferential with 'jeho' is 'known' in the second clause,
but 'not given as for sentence roles' (as for the relations
between NPS).

3.4. The rules of intrasentential coreference are a part of
discourse coreference rules, as can be seen from some exam-
ples:
(7) * *(On) kouří a Karel pije kávu. / (On) kouří. Karel pije kávu.*

    * (He is smoking and Charles is drinking coffee. / He is smoking.
       Charles is drinking coffee).

However, it does not mean that the intrasentential and in-
tersentential rules are wholly identical. We can hardly
imagine (8) in a written story, but the 'telegraphic style'
of (9) seems quite acceptable.
(8) * *(On kouří, pije kávu a Karel nemá chuť jít ven.*

    * (He is smoking, drinking coffee and Charles doesn't want to go out).

(9) *(On) kouří. Pije kávu. Karel nemá chuť jít ven.*

    (He is smoking. He is drinking coffee. Charles doesn't want
      to go out).

3.5.1. The coreference rules must be formulated as non-coreference interpretation rules of the Surface Structure as Harada - Saito (1971) have shown that there exist sentences which cannot get the right interpretation in the cyclical way Jackendoff (1972, Chapter 4 and 5) proposes. (E.g. 'John considers himself to be hard for Bill to understand', where 'himself' according to Jackendoff's rule would become obligatorily coreferential with 'Bill'!). Neither can the usual coreference rules manage to identify which of two morphologically identical NPs is coreferent with another NP (e.g. in 'A friend of mine told a friend of mine that I hated him' - Fodor 1977, p. 182), without some identification indices. The NPs in question cannot be identified positionally, if they are to be interpreted cyclically, as both their linear position and grammatical function can be changed on a higher transformational cycle. However, my point is that with non-coreference rules we do not have to asign a coreferential reading to a pair of NPs. All we need is a non-coreference rule that excludes pairs where coreference is impossible and our knowledge of the world, the context and the semantics can usually determine the actual coreference relations or the non-coreference - as it happens in reality. Sentences like Fodor's example are ambiguous and in this rather special case (and without any context), there is no way to disambiguate them, neither in reality, nor in a linguistic theory.

3.5.2. (Another argument for the formulation of a non-coreference rule was given by Lasnik (1976, p. 11-15): Problems arise with the 'transitivity of coreference' (Wasow 1972, p. 19) in cases where a positive coreference interpretation is used:

    * *A woman he loved told him that John is stupid.*
'he' can be asigned coreferential reading with both 'him' and 'John', as we can see from the following examples:
A woman he loved told him that Eve is stupid and *A woman he loved told Mary that John is stupid* are okay. But then 'him' must be

marked non-coreferential with 'John'. With a non-coreference rule, we get 'John' non-coreferential with 'him' and the actual interpretation (depending on the consituation) is simply restricted by it).

3.6.1. The non-coreference rules must be anaphorical non-coreference rules, i.e. they do not determine, in fact, if two NPs are non-coreferential, but only if there can be an anaphorical relation between them. A typical case of two coreferential NPs which are not anaphorically related can be found in sentences with nominal predicates:

(10) *Ivan je předsedou. / Náš syn se jmenuje Petr.*

      (Ivan is the chairman. / Our son is called Peter).

(A sentence like (10) clashes with our coreference rule B (3.11.2). The only reason we use such grammatical patterns is to indicate explicitly the coreferential relation which cannot be obtained automatically via the proposed rule, because the nominal predicates are not 'names' like subjects or objects - they are predicated qualities.) There also exist cases of 'sententially asserted coreference', e.g.

(11) *Jitřenka a Večernice jsou tatáž planeta.*

      (Morning Star and Evening Star are the same planet),

that cannot be accounted for with coreference rules. I do not want to get involved in the long logico-philosophical discussions about (11) (whether 'Jitřenka' and 'Večernice' are just different names, or if they have different senses or even different referents), but anyhow, 'Jitřenka' and 'Večernice' are presented in (11) as two distinct entities and they are said to be identical first in the predicate. This means that they are not anaphorically coreferential. (This does not exclude the possibility of using them in a discourse as coreferential if we start from the assumption, or say first explicitely that they have the same referent).

3.6.2. We may say that anaphorical coreference is above all a question of the sense. All anaphorically related NPs are related as to their sense, but only some of them have the

same referent in the extra-linguistic reality. (Cf. the difference between the English pronoun indicating type - 'one' - and the pronoun of token (= identity of sense and referent) or type (= identity of sense only) - 'it'. That a pronoun like 'it' or 'zero pronoun' can also express the identity of sense only, can be exemplified by (12):

(12) *Vlak Praha-Moskva měl včera zpoždění, ale dnes přijel včas.*

> (The train Prague-Moscow was late yesterday but today it
>
> has come in time).

This is, of course, the old Saussurean '6 o'clock train', which does not have to consist of the same engine, waggons etc. (Similarily: *Ještěrce upadl ocas, ale brzy ji naroste znovu.* (The lizard has lost its tail but it will soon grow up again).

3.6.3. That anaphorical coreference is primarily based on identity of sense, can also be observed in (13):

(13) *Slavík * ho má / * má jednoho / * má se v kleci.*

> ((Mr.) Nightingale has * him / * one / * himself in a cage .
>
> - Meaning: Slavík (proper name) má v kleci slavíka).

'Slavík' is a name, it does not m e a n 'slavík', anaphorical coreference is impossible. (13) could be only used in a context where 'slavík' (= ho) was 'given'.

(14) *Slavík zpívá jako ? jeden / ? takový / * on / * 'sv'.*

> ((Mr.) Nightingale sings as ? one / *such / *he / *himself).

(14) may be possible as a word-pun, where the humorous effect is reached just by the pretension that 'Slavík' does mean 'slavík'. However, we need a rather special semantics as in (14), which helps to explain: This is a joke. (13) can hardly be used as a joke.

3.7.1. There have been some attempts to incorporate certain notions such as 'theme', 'rheme' (or 'old information', 'new information' or 'presupposition','assertion') in the rules of coreference. (Kuno 1972b, 1975, 1976, Hinds 1975a, and above all Bickerton 1975 who has completely discarded the old syntactic framework). These attempts

have not been very successful because their theoretical
equipment is insufficient for this aim. Hinds and Kuno
try to use the theory of FSP in their analyses, but their
knowledge of FSP is minimal and distorted. For example,
Hinds (1975a, p. 92) 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 me-
chanical judgement based on sentence linearity only.
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 (Hinds 1975a, p. 85-87).

3.7.2. Kuno's lack of insight into FSP causes the terms
he uses to be extremely numerous (theme, contrastive
listing, exhaustive listing, neutral description, pre-
dictable theme, unpredictable theme, contrastive theme,
known part of sentence, unknown part of sentence, old in-
formation, new information etc., etc.) and extremely
vaguely defined. It seems impossible even for him to re-
member what he means with his vague definitions and
counter-definitions. For example, what is meant by 'pre-
dictable theme' is quite mysterious. 'Tom' in the follow-
ing dialogue is called 'unpredictable contrastive theme':
"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. 227)
'Tom' is as much (or as little) 'predictable' in this con-
text 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 sen-
tence they belong to was said, one could guess what
should have been there. (The criterion is Kuno's own).
In fact, it is even worse. In his latest version (Kuno
1976), he repeats that 'He' 'represents old predictable
information'. Then he claims again that 'Tom' in the
first dialogue represents 'unpredictable information'.
(Kuno 1976, p. 120-121). But suddenly in 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 h i m (= John), which is un-
 stressed because it d o e s n o t r e p r e s e n t u n-
 p r e d i c t a b l e i n f o r m a t i o n" (emphasis by the
author of this paper). If we used Kuno's criterion again
("...if that part of sentence is garbled..." etc.) we
shall find that 'him' d o e s r e p r e s e n t u n p r e -
d i c t a b l e i n f o r m a t i o n - the answer could have
been '...I like her better'.

   Kuno (1975) and (1976) presents ten rules of 'pronomi-
nalization' (one of them is the 'infamous' syntactic con-
straint), which are vague and largely unrelated and im-
possible to test because of his numerous definitions and
'counter-definitions'. Some of them are completely unne-
cessary, e.g. "Do not pronominalize the noun phrase of
the exhaustive listing interpretation" - Kuno (1975, p.
280) - which is modified (p. 281) by the possibility of
having stressed pronouns of 'exhaustive listing'. As Ku-
no'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' and an additional
exception rule to it.

3.7.3. Bickerton's treatment of 'pronominalization'
(Bickerton 1975) is radically different. He has completely

rejected the old syntactic rules and tries to use notions
similar to those of FSP: "Pronominalization flows bidi-
rectionally, and across sentence boundaries, from the pre-
supposed to asserted NP, and between presupposed NP, ex-
cept where one NP has been presupposed throughout its de-
rivational history and the other has not; in the latter
case, pronominalization shall be from the more-consist-
ently to the less-consistently presupposed". (Bickerton
1975, p. 32-33). However, his instrument, i.e. the sen-
tence bi-partition into 'presupposition' and 'assertion'
(in FSP terms: the context-dependent part and context-
independent part) is insufficient. Bickerton can manage
some constructions which consist of sharply delimited
themes and rhemes, but his rule cannot account for, for
example, (a) and (b):
(What happened to John?)
(a) * He was killed when John tried to escape.
(b)   The cops killed him when John tried to escape.
It is impossible to see any difference in 'presupposi-
tional consistency' between 'He' in the first and 'him'
in the second sentence.

3.8. One should not forget that any rule of coreference
can be valid for a sort of 'normal language' only, i.e.
a language in its 'basic functions', an abstraction from,
for example, the metalinguistic function (On křičí, že Pét'a
chce koláč. (He cries that Peter wants a cake.) is okay as a com-
pound of the 'baby language' and the metalanguage of the
speaker.), or the poetic function (A writer can certainly
use something like Tušil, že Petr udělal chybu (He had a feeling
that Peter had made a mistake) in a context that shall indicate
that 'Petr' looked at himself 'from the outside', as a neu-
tral observer. Even irony belongs here: On prostě nikdy ne-
uvěří, že i předseda národního výboru by se mohl mýlit! (He would
simply never believe that even the chairman of the National Committee
could be wrong). Restrictions on coreference can also be valid

only for the c o r e f e r e n t i a l i t y i n t e n d e d b y
t h e s p e a k e r. *On se podobá mému synovi* (He looks like my son)
can be said by a man whose son disappeared twenty years
ago, even if 'On' does have the same referent as 'syn', but
coreference is not intended by the speaker.

3.9.1. The first intrasentential anaphoric coreference rule is
A) A l l p r o n o u n s a n d 'e p i t h e t s' ('t h e b a s -
t a r d', 't h e p o o r m a n' e t c.) m u s t b e 'g i v e n'
f o r t h e s p e a k e r a n d, a s f o r t h e l i s t e n e r,
t h e y m u s t b e 'g i v e n' i n t h e c o n s i t u a t i o n
o r s o m e d e v i c e s m u s t s i g n a l t h a t t h e
s p e a k e r i s t o e x p l a i n l a t e r w h a t t h e
'f u l l N P' i s.
(I.e. the existence of the antecedents must be presupposed
by the speaker and the listener. Such existential presuppo-
sitions do not necessarily mean that the person or the thing
which is existentially presupposed is referred to with a con-
context-dependent Communicative Unit. As we shall see in
(23), it can be a rhematic and therefore inevitably context-
independent CU. Thus on the following pages, 'given' with
quotation marks is used meaning 'given in the wide sense of
(at least) an existential presupposition', not necessarily
meaning 'context-dependent').

3.9.2. The necessity for pronouns to have an 'antecedent'
in the consituation can be heard in a usual sort of dialogue:
Person A is sitting alone in an otherwise empty room where
several other people can usually be found. Person B pokes
his head in and asks: *Je tady?* (Is he in here?). A replies: *Kdo?*
(Who?) regardless of the logical truth that the answer should
be an instant *'Ne'* (No) for any other person than A. (In dif-
ferent circumstances, say, if only one specific person is
missing in a place where he should have been, it is possible
to ask without any disturbance in communication. Under such
circumstances, the pronoun is somehow 'deictic', the 'ante-
cedent' is pointed out by the consituation).

3.9.3. Pronouns and epithets that are supposed by the speaker to be 'given' even for the listener via his knowledge of the world, do not need an explicit antecendent in the consituation (i.e. real 'backward pronominalization' is possible). (15) is okay if I speak with a Swedish linguist:

(15) *Když jsem s ním v Praze mluvil, tvrdil Sgall, že ...*

(When I spoke to him in Prague, Sgall claimed that ...)

Sgall has published a lot about general linguistics (in English) and is internationally well-known. (16) is awfully awkward, as I cannot suppose that the existence of Eva Nováková is known to the same listener:

(16) *?? Když jsem s ní v Praze mluvil, tvrdila Eva Nováková, že ...*

(?? When I spoke to her in Prague, Eva Novakova claimed that ...)

Even relatives and friends can be supposed by the speaker to be 'given'. In this case there is a certain amount of the speaker's 'dictate of givenness'. (However, there exists a limit to the speaker's 'dictate' as we have seen in the above mentioned dialogue), but on the other hand, it is reasonable to 'presuppose' that a person has his/her friends and relatives:

(17) *Když jsem s ní naposledy telefonoval, říkala moje matka, že ...*

(When I phoned her last time, my mother said that ...)

(18) *Když jsem s ním naposledy telefonoval, říkal jeden známý z Prahy, že ...*

(When I phoned him one of my acquaintances from Prague said that ...).

3.9.4. Other 'given' NPs are generic ones. If A and B are talking about C who was attacked by a hippopotamus in Africa, A can explain:

(19) *Když má zatarasenou cestu k ústupu, může i malé zvíře člověka napadnout.*

(If it has its way of retreat blocked, even a little animal can attack a man).

A hippopotamus is obviously not a little animal, 'malé zvíře' is 'new' in the context, but as it is generic,

it is in a way 'given' by A's and B's knowledge of the
lexicon and, above all, by their knowledge of the fact
that there exist various little animals. Therefore the
full NP can be coreferential with the zero subject of
the subclause. (19) is certainly pronounced with an in-
tonation centre on 'malé'. We may assume that 'zvíře' is
'given' as a natural class hippos belong to. But the zero
subject stands for the whole NP, which is 'new' in the
context. But it seems to me that there does exist a weak
context-dependence even for generic nouns. The hippopot-
amus belongs to the class of big animals. 'Little ani-
mals' is an antonym 'given' indirectly, via 'big animals'.

3.9.5. We can find a host of similar cases with 'back-
ward pronominalization', where there is no explicit ante-
cedent of the pronoun in the consituation. Nevertheless
it must be 'presupposed' in some way.

(20) *Ve svém bytě si nikdo nečistí boty záclonami.*

     (In his flat nobody polishes his shoes with curtains).

Since the possessive reflexive is coreferential with 'no-
body', it cannot have an 'antecedent' in the extra-lin-
guistic reality. It does not have to be preceded by a con-
text with the word 'nobody', either. All that is needed
is a situation where somebody is suspected of the inten-
tion/has used the curtains. 'Nobody' is, regardless of
the fact that negated 'někdo' must become 'nikdo' in
Czech, just an antonym to 'somebody', i.e. the reflexive
does have a 'given' antecedent.

    Sometimes it is enough to use 'indefinite' NPs prece-
ded by coreferential pronouns if the speaker doesn't con-
sider it necessary to specify an NP that is 'given' for
him only (21) or if both the speaker and the listener un-
derstand who is talked about (22).

(21) *Když se ho ptali, jistý člověk při výslechu řekl, že...*
      (When they asked him, a (certain) man said at the inter-
      rogation that...).

(22) *Jestli (on) nepřestane, tak někdo/jeden pán dostane přes hubu.*
      (If he doesn't stop, somebody / a certain gentleman will get
      clobbered).

3.9.6. Reinhart (1977, Chapter 3) discusses the differ-
ence between 'determinate NPs' and 'indeterminate NPs'
in English. She claims that the former (definite NPs,
generic indefinite NPs, specific indefinite NPs) allow
'backward pronominalization', the latter (indefinite NPs,
'focus definite NPs' (= NPs bearing sentence stress) etc.)
do not. This is just an enumeration of possibilities.
The division 'existentially presupposed' versus 'not pre-
supposed' is a generalization of all such cases. Besides,
Reinhart is wrong as for 'focus definite NPs', which can
be seen in (23).(We shall return to (23) in (3.11.10)).

3.9.7. The necessity of an 'antecedent' in the consitua-
tion plus the possibility of signalling 'explanation fol-
lows' can be observed in the following dialogues:

A: *Kdo to udělá?*

(23) B: *Jestli (on) bude moci, udělá to Karel/KAREL to udělá.*

(If he can, CHARLES will do it).

(24) *Jestli Karel bude moci, udělá to on (sám).*

(If Charles can, he will do it himself).

(25) **ON to udělá/Udělá to ON, jestli Karel bude moci.*

(*HE will do it, if Charles can).

(26) *KAREL to udělá/Udělá to KAREL, jestli bude moci.*

(CHARLES will do it, if he can).

(27) **On to udělá/Udělá to, jestli KAREL bude moci/*

/jestli bude moci Karel.

(*He will do it, if CHARLES can).

The rheme proper must be the NP in the sentence 'X to
udělá', therefore the answer (27), where the intonation
centre is not placed on 'x', is wrong. (26) is correct
for the same reason. However (25) is wrong (without
pointing at Charles). If we compare (25) with (24) and
(23), we notice two differences: The pronominal (or zero)
subject in (23) has no antecedent, but the subclause
signals in the context of the previous question that ex-
planation can follow in the main clause. In (24), the pro-
noun has an antecedent. (25) is wrong as the pronoun, which

is the rheme proper, has no antecedent and neither the grammatical pattern, nor the intonation can promise an 'explanation afterwards'.

3.10.1. Practically all descriptions of coreference rules (with some exceptions like Lakoff 1968, Lasnik 1976, Bresnan 1977, Bolinger 1977) were exclusively directed to 'pronominal coreference', viz. the coreference of a full NP with a pronoun (or several pronouns). The only examined category of full NPs coreferential with other full NPs were the 'pronominal epithets' like 'the bastard, the bum, the sissy' etc., which were claimed to funktion as specialized pronouns (Jackendoff 1972, p. 110, Lakoff 1968, Droste 1977).

(28)   * *(On) věří, že Karel vyhraje.*

     * (He believes that Charles will win).

(29)   * *Ten blb věří, že Karel vyhraje.*

     * (The idiot believes that Charles will win).

However, as Lasnik (1976) has shown, the epithets are not pronouns and they do not function as such generally:

(30)   *(On) ví, že (on) dnes (on) nevyhraje.*

     (He knows that he won't win today).

(30a) *Karel ví, že dnes nevyhraje.*

     (Charles knows that he won't win today).

(30b) *Ten darebák ví, že dnes nevyhraje.*

     (The rascal knows that he won't win today).

(31)   * *(Ten darebák) ví, že ten darebák dnes nevyhraje.*

     * (The rascal knows that the rascal won't win today).

(32)   * *(Karel) ví, že Karel dnes nevyhraje.*

     * (Charles knows that Charles won't win today).

The epithets in (30b) and (31) show the same restrictions as full NPs in (30a) and (32). Also sentence stress influences coreference of epithets and other full NPs in the same way:

(33)   *Když vstoupil do pokoje, Věra Karla napadla.*

     (When he entered the room, Vera attacked Charles).

(34)   * *Když vstoupil do pokoje, Věra napadla Karla.*

     * (When he entered the room, Vera attacked CHARLES).

(35)   *Když vstoupil do pokoje, Věra toho lumpa napadla.*

(When he entered the room, Vera attacked the rascal).

(36)   **Když vstoupil do pokoje, Věra napadla TOHO LUMPA.*

*(When he entered the room, Vera attacked THE RASCAL).

(30a) - (36) show that, in many cases the epithets stand
in similar relations and have similar coreference restric-
tions as Full NPs. (Since coreference rules seem to be
identical at least in European languages, it is possible
to claim that it is the intonation centre that plays the
decisive role in (33) - (36) and not the sentence linearity
as we can compare them with their English translations,
in which the linearity remains unchanged and only differ-
ent intonation centres are deployed).

The reason why the epithets were considered to func-
tion as pronouns was that they were always compared with
other full NPs, as in (28) and (29). In such sentences,
they do often show the same restrictions as pronouns.
(But not always).

3.10.2. Lakoff (1968, p. 16-21) claims that there is a
whole hierarchy of the semantic load (or as we would say:
of degrees of CD) carried by various NPs. Proper names
are claimed to stand highest, then come descriptive NPs,
these are followed by epithets, the lowest rank is occu-
pied by (u n s t r e s s e d - MB) pronouns. Lakoff can 'prove'
it with some suitable examples. The elements on the same
hiearchical level can be coreferential only when they are
morphologically identical, otherwise to make coreference
possible we are told to start with an element standing
higher in the hiearchy followed by a lower one.

In fact, it is more complicated than Lakoff believes.
In 'ideal' (read 'strictest') conditions, where corefer -
ence possibilities depend only on the 'semantic load'
(= degrees of CD) of the NPs in question and linearity,
say, in short co-ordinate sentences, we get the following
results:

(37)   *Vstoupil do pokoje a zapálil si cigaretu.*
        (He entered the room and lighted a cigarette).

(38)   **Vstoupil do pokoje a ten lump si zapálil cigaretu.*
        *(He entered the room and the rascal lighted a cigarette).

(39)   **Vstoupil do pokoje a muž v červené košili si zapálil cigaretu.*
        (He entered the room and the man in the red shirt lighted
        a cigarette).

(40)   **Vstoupil do pokoje a náš nejlepší šachista si zapálil cigaretu.*
        (He entered the room and our best chessplayer lighted a cigarette).

(41)   **Vstoupil do pokoje a Karel si zapálil cigaretu.*
        (He entered the room and Charles lighted a cigarette).

(42)   *Ten lump vstoupil do pokoje a zapálil si cigaretu.*

(43)   **Ten lump vstoupil do pokoje a muž v červené košili si zapálil
        cigaretu.*

(44)   **Ten lump vstoupil do pokoje a náš nejlepší šachista si zapálil
        cigaretu.*

(45)   **Ten lump vstoupil do pokoje a Karel si zapálil cigaretu.*

(46)   *Muž v červené košili vstoupil do pokoje a zapálil si cigaretu.*

(47)   *Muž v červené košili vstoupil do pokoje a ten lump si zapálil
        cigaretu.*

(48)   **Muž v červené košili vstoupil do pokoje a náš nejlepší šachista
        si zapálil cigaretu.*

(49)   **Muž v červené košili vstoupil do pokoje a Karel si zapálil
        cigaretu.*

(50)   *Náš nejlepší šachista vstoupil do pokoje a zapálil si cigaretu.*

(51)   *Náš nejlepší šachista vstoupil do pokoje a ten lump si zapálil
        cigaretu.*

(52)   **Náš nejlepší šachista vstoupil do pokoje a muž v červené košili
        si zapálil cigaretu.*

(53)   **Náš nejlepší šachista vstoupil do pokoje a Karel si zapálil
        cigaretu.*

(54)   *Karel vstoupil do pokoje a zapálil si cigaretu.*

(55)   *Karel vstoupil do pokoje a ten lump si zapálil cigaretu.*

(56)   **Karel vstoupil do pokoje a muž v červené košili si zapálil
        cigaretu.*

(57)   *Karel vstoupil do pokoje a náš nejlepší šachista si zapálil
        cigaretu.*

(58)   *Karel/náš nejlepší šachista/muž v červené košili/ten lump
       vstoupil do pokoje a on si zapálil cigaretu.

As can be seen from (48), (49), (52), (53), (56), there is
no difference in our very strict paradigm between 'Karel',
'náš nejlepší šachista' and 'muž v červené košili'. All of
them function as 'proper names', without any hiearchical
difference exept for (57). Just the opposite - they confirm
the second of Lakoff's claims: Two NPs of the same rank
must be morphologically identical lest coreference be im-
possible. (58) does not allow coreference as can be deduced
from Mistrík's analysis of enclitical and full pronouns.
(Zero subjects correspond to enclitics, pronominal subjects
to full pronouns). Possible sentences with identical NPs
like 'Karel vstoupil do pokoje a Karel si zapálil cigaretu',
which, according to Lakoff, should be acceptable, do balance
on the very border of acceptability. I am not sure myself,
if I consider them acceptable or not. But one may say that
such sentences are much better than, for example, (38)-(41)
and (43)-(45), where coreference is completely out of ques-
tion. That such sentences (and even similarily constructed
texts) deviate from the ordinary, gives the possibility of
using them to get special stilistic effects. This strategy
of constructing a text is, e.g., used in 'Švejk' in the
scene with the drunken army chaplain Katz (Part I, Chapter
10/II), where it can be considered as an expression of the
author's ironical attitude towards Katz.

3.10.3. The epithets can be of two sorts:
1) subjective qualifications by the speaker of the referent.
But they do not have to be pejorative or ironic ('ten dobrák').
'Ten chudák', 'ten smolař' etc. are also possible.
2) generalizations referring via a definite description to
a class which contains the referent of the first NP as a 'nat-
ural subclass'. But the subclass can even be identical with
the whole original class. Thus 'Karel' can be such a subclass
of ' náš nejlepší šachista', but not vice versa in our strict
paradigm. (Compare (57) and (53). It is difficult to keep

one paradigm for all variants without being forced to con-
struct strange situations. A sentence similar to (57) is
much more natural: Charles is to play for the world chess-
team championship in 10 minutes and

(59)   *Karel vstoupil do baru a náš nejlepší šachista vypil na ex*
       láhev whisky. (!)

       (Charles came in the bar and our best chessplayer drunk a bot-
       tle of whisky in one draught).

Thus (57) would be quite okay in a world where it is un-
thinkable that best chess players should smoke.

3.10.4. There is an interesting question: Why the subjec-
tive qualifications often demand (and perhaps compulsorily
in subject position) the demonstrative pronoun. One reason
may be the general use of the demonstratives in emotional
sentences (Havránek - Jedlička 1960, p. 196). There is no
doubt that sentences with such epithets are emotionally
coloured. As for the necessity of the demonstratives in
subject positions, it may depend on the rather exclusive
status of subjects, not only in the grammatical pattern,
but in FSP as well. For example, as Sgall (1973, p. 205)
has shown, subjects are the only CUs of the first syntac-
tical plan, (the plan consisting of structurally indispen-
sable components of a sentence - Poldauf (1964, p. 241)
and (1962, p. 343-344)), that can be interpreted as con-
text-independent in the unmarked interpretation of word-
order when standing before the predicate. The consequence
of this is that subjects can be used for introducing new
themes in a given Communicative Field, while, e.g., ob-
jects cannot. (With some exceptions like certain 'thought
subjects' as in 'Karla bolí hlava' (Lit. 'Charles (accusa-
tive)aches head (nominative)') etc.). Therefore it is ne-
cessary to indicate that an epithet in subject position is
not a new theme, that it is context-dependent.

The whole paradigm of (37)-(58) is valid just for the
subjects of coordinate sentences. Coreference between a sub-
ject and non subject or between two non-subjects is about

as free as the intersentential coreference in a discourse:

(60)   *Zapálil si cigaretu a otec se na Karla nevražívě podíval.*

         (He lighted his cigarette and father looked at Charles hostilely).

(61)   *Zapálil si cigaretu. Otec se na Karla nevražívě podíval.*

         (He lighted his cigarette. Father looked at Charles hostilely).

(62)   *Matka mu odpustila, ale otec se na Karla pořád hněvá.*

         (Mother has forgiven him but father is still cross with Charles).

(63)   *Matka mu odpustila. Ale otec se na Karla pořád hněvá.*

         (Mother has forgiven him. But father is still cross with Charles).

3.10.5. With a different grammatical structure the paradigms obtained would be different. I am not so cruel so as to start again with anything like (37)-(58). Just two examples:

(64)   *Ti, kdo Karla znají, tvrdí, že náš nejlepší šachista vyhraje.*

         Those who know Charles claim that our best chessplayer will win).

(65)   *Ti, kdo našeho nejlepšího šachistu znají, tvrdí, že Karel vyhraje.*

         (Those who know our best chessplayer claim that Charles will win).

The difference between (57) and (53) versus (64) and (65) will be explained together with (66)-(69) versus (1)-(4) in 3.11.5.-6.

(66)   *Když začal psa bít, (to) zvíře se rozzuřilo.* '

         (When he started beating the dog, the animal became raging).

(67)   ?*Když (to) zvíře začal bít, pes se rozzuřil.*

         ?(When he started beating the animal, the dog became raging).

(68)   ?*Pes se rozzuřil, když začal (to) zvíře bít.*

         ?(The dog became raging when he started beating the animal).

(69)   ?*(To) zvíře se rozzuřilo, když začal psa bít.*

         ?(The animal became raging when he started beating the dog).

(66) is quite natural. (67)-(69) are more or less strange (especially without the demonstrative pronoun), but I wouldn't dare to say they are impossible. Why are (66)-(69) different from (1)-(4), which are repeated here for the sake of convenience?

(1)   *Když Marie dostala dopis, (ona) omdlela.*

        (When Marie got the letter, she fainted).

(2)   *Když (ona) dostala dopis, Marie omdlela.*

        (When she got the letter, Marie fainted).

(3)   *Marie omdlela, když (ona) dostala dopis.*
       (Marie fainted when she got the letter).
(4)   * *(ona) Omdlela, když Marie dostala dopis.*
       *(She fainted when Marie got the letter).

3.11.1. There is a combination of various FSP means in an
isolated sentence interpreted in a 'neutral', 'unmarked'
way. First of all, there is the 'inherent FSP structure'
of the given grammatical pattern, and semantic pattern
minus the actual CD load of NPs the coreference possi-
bility of which is to be determined. This inherent FSP
structure is completed with NPs' specific degrees of
CD, depending on their 'semantic loads'. If the inher-
ent FSP structure makes the CD difference of a pair
of 'NP slots' very large, the 'semantic load' of the
NPs in question cannot worsen it even more. A degree
of CD carried by Communicative Units is something rel-
ative in two senses. It is relative to other CUs of
the same Communicative Field - this is what papers on
FSP are mostly about (a sort of 'syntagmatic CD') -
and to other Communicative Units in the CF of the ab-
stract formula for 'neutral word-order'. It is also
relative in another way - we can compare the amount
of CD carried by an element with the CD carried by
another element which could have stood in the former's
place. This aspect of FSP - 'a paradigmatic CD' - is
rather neglected. Still we can find some allusions in
several papers quoted here and in some other FSP papers
- e.g. Firbas (1959, p. 51-53), Palek (1968, p. 261).
Firbas analyzes sentences (a) - (e):

       (a)   A girl broke a vase.
       (b)   The girl broke a vase.
       (c)   The girl broke the vase.
       (d)   The girl broke it.
       (e)   She broke it.

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He discusses the possibility of various CUs being context-dependent. 'A girl' must be context-independent. 'The girl' can be either context-dependent or context independent. (It can be used as a literary trick - an author can pretend that it is 'known', though the reader hears about the girl for the first time). 'She' with the unmarked intonation, i.e. without sentence stress, must be context-dependent. But all these three CUs are themes proper in, say, (a), (b), and (e). As Communicative Dynamism is, according to Svoboda (1974, p. 40), 'an abstraction from and generalization of the reciprocal of contextual dependence', we may say that the 'paradigmatic CD' expresses the potentiality of an expression to belong to the context-dependent or the context-independent part of a Communicative Field. Similarily, the CD scale of the 'inherent FSP structure' of a given grammatical pattern, as well as the inherent degrees of CD in a context-free sentence with neutral word-order, reflect the tendencies of various CUs to function as the theme proper or the rheme proper - e.g., the most rhematic but one CU in the neutral word-order is the most natural candidate for the rheme proper if the original most rhematic CU is deleted.

3.11.2. Now we can formulate another rule:
B) Coreference, both 'forward' and 'backward', is possible only when the degree of Communicative Dynamism carried by the 'antecedent' (= the CU with lower CD) is not substantially lower than that carried by 'postcedent'. This rule is subject to the following restriction:
C) Sentences of second-instance level allow coreference only if coreference is possible in the first-instance level sentence from which the second-instance level sentence is derived.

Of course, not all sentence patterns get only one 'neu-

tral' FSP interpretation. Firbas (1974, p. 22) admits the
existence of structures insusceptible to FSP, viz. those
that allow more than one 'unmarked' FSP interpretation.
(And such cases of multifunctionality must be most fre-
quent in isolated written sentences). Language is not
a closed and perfectly balanced system. In such cases, it
is sufficient if one of the FSP interpretations allows
coreference, then the structure in question is considered
to be able to allow coreference.

3.11.3. In a longer discourse, it is at times felt by the
speaker/writer that the referent which has been referred
to as 'given', say with pronouns, should be 'reintroduced',
expressed via a full NP again to make the discourse more
comprehensible. Intersententially, there seems to be no
limit on how often the referent can be 'reintroduced'.
There can be at least one full NP per sentence. Intrasen-
tentially, the 'reintroduction' may clash with the FSP
rules of intrasentential coreference. (The difference be-
tween intrasentential and intersentential coreference pos-
sibilities (cf. (7) - (9)) is probably another argument
against attempts to expand FSP analyses beyond sentence
boundaries. FSP is just the means of attaching a sentence
to the consituation, but not the force organizing the com-
plete text coherence). T h u s , as we shall see in (98),
in more complex sentence structures,
which resemble more of a complex dis-
course than of a minimal utterance
unit (= a sentence), the FSP rule can be
overruled by the 'renaming need'.

3.11.4. To make the following part simpler, example sen-
tences are mainly restricted to 'prononominal coreference',
i.e. the coreference of a pronoun with a full NP. Some ex-
amples found in Czech literary texts will be used, but,
for the sake of argument, it is necessary to rely mainly
on constructed examples, as the marked sentences, where

coreference is impossible, cannot be found in any text
for obvious reasons.

3.11.5. In (1) - (4), only (4) with the full NP in the tem-
poral subclause placed after the main clause does not al-
low coreference. Such a temporal subclause is normally
rhematic and the rhematic full NP cannot be coreferent
with the pronominal (or zero) subject of the main clause,
which is the theme proper (= carries the lowest degree
of CD). One could get the impression that a pronominal
subject of a main clause cannot be coreferential with the
full NP placed after the main clause, i.e. one could be-
lieve in the existence of a purely syntactic restriction.
But it is not so. It is difficult to find a counter-ex-
ample with temporal subclause, which is quite unambiguous
as for the FSP structure of the whole sentence. But with
another type of adverbial subclause, the zero or pronomi-
nal subject can be coreferential with the full NP in the
subclause:

(70)   *Mohl by se uzdravit mnohem rychleji, kdyby jen Karel dodržoval*
       rady lékaře.

       (He could have got cured much quicker, if only Charles had
       kept the doctor's advice).

The conditional subclause doesn't have to be interpreted
as the most rhematic CU. It can be interpreted as a sort
of 'parenthetical clause' carrying low CD. This interpre-
tation makes coreference possible. If we tried to formu-
late coreference rules in syntactic terms, we would be
compelled to go the way generativists did - we would be
forced to start enumarating exception rules and exception
rules to exception rules to save the original syntactic
assumption.

3.11.6. (37) - (58) also exemplify the cooperation of FSP
factors. The 'NP CU' in the second coordinate sentence
carries higher CD than the 'NP CU' in the first sentence,
because of the linear arrangement of the construction.
If the second NP also stands higher in the above-mentioned

hiearchy of the 'paradigmatic CD' (= the semantically de-
termined inherent CD of the second NP is higher than that
of the first NP), the difference in degrees of CD is too
big to allow coreference. The border cases are the above-
mentioned (3.10.2.) sentences with identical NPs, which
lie on the same level in the hiearchy. They may be unac-
ceptable for some, the point is that different speakers
show different sensitivity to small nuances in degrees
of CD. However, those who accept the more or less dubious
sentences, inevitably accept all 'sound' sentences as well.

Now we can also understand the difference between (57)
and (53) versus (64) and (65). The inherent FSP of the
sentence pattern in (65) makes less demands on the NPs in
question, the structure 'can afford' a little increase of
the CD difference (an epithet versus a full NP) without
prohibiting coreference. Similarily, in (67) and (68)
(Cf. (2) and (3)), the epithet instead of the pronoun in-
creases the CD difference (= decreases acceptability), and
in (69), compared with (4), the epithets helps to diminish
the CD difference, acceptability is increased.

3.11.7.

(71)   *On by to dělal úplně jinak, ozval se Karel.*

   (He would have done it in quite a different way, remarked Charles).
(72)   **Karel by to dělal úplně jinak, ozval se (on).*

   *(Charles would have done it in quite a different way, remarked he).
(73)   **Ten lump souhlasí, řekl Karel.*

   *(The scoundrel agrees, said Charles).
(74)   **Karel řekl, že ten lump souhlasí.*

   *(Charles said, that the scoundrel agreed).

As I have already said, one can find counter-examples
to all non-FSP rules of coreference. One could, for example,
believe, that at least 'pronominalization forward' is always
possible. Not even that is true. In sentences with 'semi-
direct speech', the subject of the 'parenthetical' introduc-
tory main clause (the theme proper of the whole sentence)
must be the full NP regardless of the linear arrangement,
otherwise the CD difference would be too large. But is not

enough. The NP in the rhematic subclause must be a pro
noun or zero pronoun. There is a sharp FSP division
of sentences with verba dicendi into the thematic main
clause and the rhematic subclause. Not even the full NP in
the main clause can 'afford' to be coreferential with the
epithet in (73) and (74), which adds too much 'semantic CD'
to the 'NP slot' in question, that belongs to the rheme
anyway.

3.11.8. Some more examples:

(75) *Předvedl nám ukázku šéfovy špatné nálady.

        *(He gave us a sample of the boss's bad temper).

(76) Převedl nám ukázku šéfovy neblaze proslulé špatné nálady.

        (He gave us a sample of the boss's infamous bad temper).

The semantics of the full NP in (76) makes it possible
to interpret the boss's notorious bad temper as something
already known from the context, something, in a way, 'given'.
Then coreference is possible.

(77) Mohl by být mým bratrem, ač Karel vůbec není mým příbuzným.

        (He could have been my brother, though Charles ,is not at all

            a relative of mine).

Also concessive subclauses can be interpreted as parenthe-
tical afterthoughts (carrying low degrees of CD, in spite
of the final position). Therefore they can allow coreference
of their full NP with the zero subject, which is the theme proper.

(78) * (On) očekává, že Karel dostane Nobelovu cenu.

        *(He expects that Charles will get the Nobel prize).

(79) Jeho žena očekává, že Karel dostane Nobelovu cenu.

        (His wife expects that Charles will get the Nobel prize).

(80) Všichni kdo četli jeho knihu očekávají, že Karel dostane
        Nobelovu cenu.

        (All who have read his book expect that Charles will get
          the Nobel prize).

In (78), the pronominal subject (or zero subject) is the
theme proper with the lowest possible degree of CD, which
cannot be coreferential with 'Karel' that belongs to the
rheme. In (79) and (80), the pronoun is an amplification/

/belongs to the amplification of the head noun. The degree
of CD carried by the pronoun is still very low (it still
belongs to the theme), but it is higher than in (78). The
CD difference is smaller, coreference is allowed.

(81) * *Trápí ho, že Karel udělal chybu.*

     * (It worries him that Charles has made a mistake).

(82)   *Rodiče ho ještě litovali, když Karel dostal trojku z chování.*

     (His parents even felt sorry for him when Charles got grade 3

      in manners).

Here we can see that it is not sufficient to say that pro-
nominal non-subjects can stand before full NPs. (82) is
correct, 'ho' carries the lowest CD, but structure-wise
it is in the 'object slot' with the inherent lowest but
one degree of CD, and, besides, the subclause can be pro-
nounced with falling intonation after 'ještě litovali'.
The CD difference is not decisively large. Coreference is
allowed. In (81), it is much more difficult to interpret
the pronominal subject as coreferential with the follow-
ing NP. This object is a sort of 'semantic subject'. The
sentence describes what the object experiences, which
means that the 'inherent CD' is lower than in (82).

3.11.9. Now I will present some excerpts. Since the linear
order 'full NP first, pronoun after' is the usual one,
only the opposite order (which is quite unusual - about 1
case per 10 pages of fiction) is exemplified. The sentences
are taken from K. Čapek's 'Válka s mloky' (War with the
Newts) and the first part of J. Hašek's 'Švejk'. Both books
have been translated all over the world and anybody can
check that the same constructions are usually possible in
different languages; it is reasonable to expect the FSP
rules of coreference to have universal character. There may
be some exceptions, however, they probably depend on FSP
interpretation of the sentence construction in question in
the given language and do not refute the expected universal
validity of identical or similar FSP rules. Russian trans-
lations complement the original Czech examples.

One should not forget that a different translation does
not necessarily mean that the same grammatical pattern and
order of coreferential NPs is prohibited in a language.
When asking informants about coreference, I noticed that
informants very easily changed the given sentence line-
arity and order of NPs, i.e. the task of simply repeating
a sentence with coreferential relations is difficult
enough, so that one can expect that even a translator of
a book can make such changes depending on performance only.

(83)   *Oni tam prý mají své město, ti čerti.*

       У них там будто бы свой город, у этих чертей.

(84)   *Prý tam má být námořním kapitánem, ten Vantoch.*

       Он, говорят, капитан морского судна, этот Вантох.

In (83) and (84), the full NP, 'vytýčené téma', is a sort
of afterthought elucidation of the pronoun/zero subject,
therefore the full NP carries a very low degree of CD.

(85)   *Nakonec, vyslechnuv všechna obvinění, prohlásil Švejk: ...*

       Выслушав все обвинения, Швейк сказал: ...

In (85) the highest degree of CD is carried by the sentence
of direct speech, both the 'zero subject of the participle'
and the full NP carry a low degree of CD. Within the the-
matic part, the FSP structure is similar to that of (2).
The FSP explanation is more general than the possible syn-
tactic explanation that the 'subject' of the participle
must be coreferential with the subject. The FSP explanation
is valid even for a full subclause:

(86)   *Potom co vyslechl všechna obvinění, prohlásil Švejk: ...*

(87)   *Část jeho rozhovoru byla vyplněna osobním poměrem polního kuráta
       k ženám a kartám.*

       Часть разговора была посвящена отношению к женщинам и к картам.

In (87) the second NP, which is the most rhematic part of
(87), is constructed as a 'transformed sentence with full
predication'. What I mean is this: It is possible to insert
a reflexive possessive pronoun in such a construction. Only
'full predications' allow it. (Compare 'osobní poměr pol-
ního kuráta ke svým milenkám' with '* nábytek polního kuráta
ve svém bytě' with the hidden predication. The FSP structure

of the latter phrase is (according to Svoboda (1968)):
'nábytek' - lowest CD in the phrase, 'polního kuráta' -
higher CD, 'v jeho bytě' - the highest CD). The full
predication has the following FSP interpretation: 'pol-
ního kuráta' has the lowest degree of CD in the phrase,
'osobním poměrem' higher CD, 'k ženám a kartám' the
highest CD in the phrase. Thus, while 'polního kuráta'
is rhematic, coreference is still possible, because the
difference between CD degrees of 'jeho' and 'polního
kuráta' is not too large.

(88)   *...a dohonila ho, až když si Švejk zašel kupovat cigarety*
       do trafiky.

       ...и догнала его, только когда он зашёл в лавочку за сига-
       ретами.

'ho' carries the next lowest CD in (91). Only the zero
subject expressed via verbal congruence carries lower CD.
'Švejk' belongs to the Communicative Unit with the high-
est CD. However, within this CU (= the Communicative
Field of the subclause), Švejk is a CU carrying a low
degree of CD. Coreference is possible.

(89)   *...a v rohu na kavalci seděl, jako by se jich stranil, muž*
       v prostředních letech.

       ...а в углу на койке, как бы сторонясь всех, сидел шестой -
       мужчина средних лет.

The inserted subclause in (89) has a zero subject corefer-
ential with 'muž v prostředních letech', which carries
the highest degree of CD. The subclause essentially ampli-
fies the meaning of the main verb (i.e. carries higher CD
than the verb), which is the transition in (89). Therefore
even the 'zero subject' carries a relatively high degree
of CD. The difference between the zero subject and the
full NP is limited. Neither here can we say that the core-
ferentiality depends only on the grammatical construction.
If it were so, we could change CD degrees and (90) would
still be okay:

(90)   **Seděl, jako by se jich muž v prostředních letech stranil,*
       v rohu na kavalci.

93

(91)   *Kapitán mu mlčky pokynul a drobný Singhalec skočil do vody.*

Капитан молча кивнул ему, и маленький сингалезец пригнул в воду.

The enclitic 'mu' carries a very low degree of CD, it would probably be called the theme proper of the first sentence. We have seen that coreference in, e.g. (39) - (41) was impossible. The difference between (91) and (39) - (41) lies in the inherently relatively higher CD in an enclitic pronoun than in a 'zero subject'. Both of them are very thematic, but, according to Firbas' analyses, it is the zero subject/pronominal subject in languages with obligatorily expressed subjects, that carries the lowest possible degree of CD (= is the theme proper). (One can say that the inherent scale of CD, which was mentioned in connection with 'neutral word-order' is a kind of tendency of Communicative Units to function as the theme proper and (at the other side of the scale) the rheme proper).

(92)   *Za druhé při nadbytku materiálu, který se mu kupil pod rukama, schovával pan Povondra hlavně dlouhé články, ...*

Во вторых ввиду чрезмерного обилия накоплявшихся у него материалов, пан Повондра сохранял главным образом большие статьи,...

'mu' can be coreferent with 'pan Povondra', which is not rhematic.

(93)   *..., tak mu do huby nalejte slivovici, aby se ten pes trochu vožral, ...*

..., влейте ему в глотку сливянцу, чтобы пес был немного павеселе.

The enclitic carries the next lowest degree of CD, the full NP carries a low degree of CD in the rhematic clause and is even more thematized via the demonstrative pronoun 'ten'.

(94)   *...a za chvilku přibĕhne kluk, kterej se u nĕho učil, abychom šli pana hostinskýho vodříznout, (že prej visí na klice u okna).*

...через минуту прибегает мальчонка, который был у него в ученье, кричит, чтобы мы скорей сняли трактирщика: (он висит на оконной ручке).

The pronoun belongs to the essential amplification of the already rhematic head noun 'kluk' in the first sentence; it can be coreferent with 'pana hostinskýho'.

(95)   ...(mohl jej oslovit také holandsky nebo anglicky neboť cti-
hodný starý Batak neuměl slovo malajsky...)

...(c таким же успехом мог бы обратиться к нему по-голландски
или по-английски, так как достопочтенный старый батак не
знал ни слова по малайски...)

The pronominal object carries the next lowest degree of CD
of the whole sentence. But even the full NP carries a low
degree of CD within its rhematic sentence. Coreference is
possible.

(96)   ...a půjdeme jej shánět, poněvadž myslím, že bez polního oltáře
se nedá mše sloužit.

...,и пойдем искать этот алтарь, потому что без него, думается,
слушать обедню нельзя.

(96) is similar to (95).

(97)   Když otevřel třetí láhev, přišel obchodník se starým nábytkem
a polní kurát mu prodal ...

Когда была откупорена третья бутылка, пришел торговец старой
мебелью, и фельдкурат продал ему ...

In (97), the zero subject carries the lowest degree of CD
of the whole complex. 'polní kurát' carries a much higher
degree of CD, but it is followed by a lot of even more
rhematic material. Besides, in this context, there is
a strong need to reidentify the referent,otherwise it would
mean   'obchodník prodal kurátovi'. (Když otevřel třetí láhev,
přišel obchodník se starým nábytkem a prodal mu ...).

In 3.11.3. we mentioned the re-naming tendency that can
overrule the FSP rules. (98) exemplifies this:

(98)   Scházela mu polovička levého ucha, kterou mu usekl jeho pro-
tivník za mládí v souboji kvůli prostému konstatování pravdy,
že Bedřich von Zillergut je prachpitomý chlap.

У полковника недоставало половины левого уха, которое ему
отсек в дни его молодости противник на дуели, возникшей из-за
простой констатации факта, что Фридрих Краус фон Циллергут -
большой дурак.

3.11.10. It remains to illustrate Rule C:
For example, (1) - (3) can be first-instance level sentences
to other sentences like (99) - (103).

(99)   *(Ne), když dostala dopis EVA, (tak) omdlela/když EVA dostala dopis, (tak) omdlela.*

(No, when EVE got the letter, she fainted).

(100) *(Ne), když dostala TELEGRAM, (tak) Marie omdlela.*

(No, when she got the TELEGRAM, Mary fainted).

(101) *(Ne), když dostala dopis, Marie se ROZZUŘILA.*

(No, when she got the letter, Marie became RAGING).

(102) *(Ne), když Marie dostala dopis, ROZZUŘILA se/ona se ROZZUŘILA.*

(No, when Marie got the letter, she became RAGING).

(103) *(Ne), Marie omdlela, když (ona) dostala TELEGRAM.*

(No, Marie fainted when she got the TELEGRAM).

(9 9) - (103) allow coreference as well as the original (first-instance level) sentences (1) - (3). But (104) does not allow coreference, because neither does (4).

(104) **Omdlela, když Marie dostala TELEGRAM.*

*(She fainted when Mary got the TELEGRAM).

Sentences like (105) and (106) are not counter-examples to Rule C, because they do not have to be second-instance level sentences. They are just first instance level sentences with marked word-order:

(105) *Ona se ROZZUŘILA - (totiž) když Marie dostala dopis.*

(106) *Ona se, když Marie dostala dopis, ROZZUŘILA.*

(105) and (106) are just 'Ona se rozzuřila' with the attached afterthought/embedded parenthetical 'když Marie dostala dopis'. 'Marie', the theme proper in the thematic clause, can be coreferential with the theme proper of the whole construction. In another sentence type, the parenthetical interpretation is quite impossible and there can be no doubt about the non-coreferential interpretation:

(107) **(Ne), (on) očekává, že Karel PROHRAJE.*

*(No, he expects that Charles will LOSE).

The difference between (108) and (109) against (110) and (111) cannot depend on the 'obligatory reflexivization', because we get the same paradigm even in languages without possessive reflexives, e.g. in English.

(108) *PETR kousl svého psa.*

(PETER bit his dog).

(109)   *Petr kousl SVÉHO psa.*

      (Peter bit his own dog).

(110)   ** (On) kousl PETROVA psa.*

      *(He bit PETER'S dog).

(111)   ** ON kousl Petrova psa.*

      *(HE bit Peter's dog).

(108) has as its 'presupposition' (first-instance level sentence 'Někdo kousl svého psa', which is okay. (109) has the first-instance level sentence 'Petr kousl něčího psa'. This sentence is okay, it does not say anything about the possibility of identifying 'Petr' = 'někdo', but it does not prohibit it, either. Coreference is possible according to the FSP rule both in (108) and (109) and becomes obligatory because of the semantics of the reflexive 'sveho'. (110) comes from '*(On) kousl něčího psa', which is wrong. (According to our Rule A, the pronoun must be 'given' and therefore, it cannot suddenly be coreferential with the indeterminate 'někdo'). (111) comes from '*Někdo kousl Petrova psa', where intended coreferential reading is prohibited by Rule B.

(112)   ** Jeho bratr zabil hraběte.*

      * (His brother killed the count).

Normally, (112) is hardly possible. However, with changed intonation, e.g.

(113)   *Jeho BRATR zabil HRABĚTE.*

(113) is okay for example in the following situation: A is telling B a romantic story he has read. In the intricate story, somebody murdered somebody, but A's telling is so chaotic, that B must ask:

B: Počkej. Kdo zabil koho?

A: (To je přeci jasné) Jeho BRATR zabil HRABĚTE.

      (Wait a moment. Who killed who? It is clear ...)

then both 'JEHO BRATR' and 'HRABĚTE' are the rheme and coreference is possible as the CD difference is very small. When commenting (59) (in 3.10.2.), I omitted a similar possibility with two highly rhematic Communicative Units:

(114)   *ON/TEN LUMP/MUŽ V ČERVENÉ KOŠILI/NÁŠ NEJLEPŠÍ ŠACHISTA/KAREL*
        vstoupil do pokoje a ON si zapálil cigaretu.

Coreference is possible for the same reason as in (113).
Also (23) (in 3.9.7.) comes from a first-instance level
sentence ('presupposition') 'x to udĕla', therefore (23)
is possible. Similarily, we can explain Postal's sentences
(in 2.5.4.) with the difference between the first-instance
level sentence to (a), which is 'Somebody kill his wife',
and (b), which comes from the impossible '* His wife killed
somebody'. 'His' must be 'given' according to our rule A.
Therefore it cannot be coreferential with 'somebody', which
is 'new'. As for the 'incredulity questions' and 'quiz mas-
ter questions', their FSP structure is different from true
questions - even (b) is allowed.

It may be of some interest to show how the coreferential
interpretations in second-instance level sentences are lim-
ited by our rules A and B in the respective first-instance
level sentences, in a more detailed way, since such sen-
tences are very difficult to explain for generativists.
(The English examples are used in order to avoid the 'Slavic
distraction' caused by possessive reflexives).

(115)   ? *It was HIM Peter's dog bit, (not her).*

(116)   * *It was PETER his dog bit.*

(117)   * *It was PETER's dog that he bit.*

(118)   * *It was Peter's DOG that he bit, (not his cat).*

(119)   ? *It was HIS dog that Peter bit.*

(120)   *It was his DOG that Peter bit.*

(115) is a bit strange (but not impossible) as its first-
instance level sentence is something like 'Peter's dog bit x'
and it may be rather difficult to imagine a context where
we know whose dog bit somebody without knowing who was bitten.
However, the coreferential interpretation of the first-
instance level sentence is not prohibited by our rules. Co-
reference is possible in the second-instance level sentence
(115).
In (116), Rule A prohibits coreference in the 'presupposition'
which is something like 'His dog bit x'. The same is true for

(117) with its 'presupposition' "He bit x's dog".(118) does
not allow coreference, either. The 'presupposition' is "He
bit Peter's x", where the coreferential reading is blocked
by our Rule B. (119) is also a little strange, as it is
rather unusual to find a context where we know that Peter
bit somebody's dog but we do not know whose dog it was.
However, the 'presupposition', which is "Peter bit x's
dog", does not make the coreferential reading impossible.
(120) has as its 'presupposition' "Peter bit his x", which
allows coreference according to our Rule B.

3.12. Now we are also able to judge the merits of the old
'precede and command rule'. The rule is correct as a 'rule
of thumb' showing the usual coreference possibilities in
a majority of sentences. The reason why the rule can be
used in this way depends on the relatively high degree of
correspondence between certain syntactic structures and
FSP structures, which can be observed everywhere (e.g. the
statistical tendency to use subjects as themes proper can
be observed even in languages with 'free word-order', not
only in languages with grammatical and grammaticalized word-
order (English). Thus it is, for example, quite probable
that a .Communicative Unit of the highest Communicative Field
that precedes another CU of the same or lower CF would carry
a low degree of CD and one cannot use a full NP as the sec-
ond CU lest the difference be too big. The rule is wrong (as
many modified additional rules testify) because it cannot
guarantee the correct interpretations in all sentences. (The
correspondence between the syntactic and FSP structures is
much less than 100 % }. The old rules were formulated in terms
of 'FSP symptoms', in terms of only two devices signalizing
the FSP structure: the sentence linearity and the embedded
structures. This does not catch the kernel of the problem,
viz. the FSP structures. When other means of FSP override
the two signalizers, the rule cannot predict the correct co-
reference interpretations.

(After I had written this paper, I received Szwedek (1976).

He is, as far as I know, the first Slavic author interested
in coreference in Slavic languages in a way similar to mine.
However, the greatest part of the book is just an 'introduc-
tion in FSP for beginners' (p. 32-93). As for the intersen-
tential coreference, Szwedek only came to the rather obvious
conclusion (p. 83-84) that sentence stress marks non-coref-
erential NPs. This is not wholly correct, either, as (121)
shows:

(121)   *Karel a Petr šli do lesa. Zpátky se vrátil jen Petr.*

       (Charles and Peter went to the forest. Only Peter came back).

(122)   *Karel a Petr šli do lesa. * Zpátky se vrátil jen on.*

       (Charles and Peter went to the forest. *Only he came back).

(122) is impossible without pointing at 'Peter'. The pro-
noun, which implies specificity, is not made specific by
the preceding context. As for the intrasentential corefer-
ence, Szwedek accepts (p. 93) the old 'precede and command'
rule).

SUMMARY

    Intrasentential coreference rules can be reduced to the
following:

    The difference of CD degrees between two NPs that are
to receive a coreferential interpretation in a first-in-
stance level sentence, i.e. the difference between the
summed up 'syntagmatic' and 'paradigmatic' CD degrees of
two NPs cannot exceed certain limits, which can vary slight-
ly from one speaker to another. No syntactically formulated
coreference rule is necessary. As for second-instance level
sentences, coreference is possible only if the original
first-instance level sentence allows the coreferential
reading. There is a gradual transition between intrasen-
tential and intersentential coreference. In more complex
sentence structures, which resemble more of a complex dis-
course than a minimal utterance unit (= a sentence), the FSP
rules of intrasentential coreference can be overruled by
the 'renaming need' of a discourse. As for pronouns and
epithets, their antecedents' existence must be presupposed

in the consituation, i.e. they must have an 'antecedent'
in the context, situation or our knowledge of the world.

POSTSCRIPT

An objection may arise that the rules presented here
are perhaps correct but that they are so general and ab-
stract that they are impossible to formalize. Of course,
in comparison with the formalized rules of, say, American
generative grammar (which, however, have not succeeded
in describing any language satisfactorily), these rules
are really difficult to formalize, as is the whole theo-
ry of FSP. An interim solution may lie in an enumeration
of 'border patterns' allowing coreference and such a list
may be compared with actual sentences. Allow me to use a
parallel. The theory of chess exists regardless of the
fact that its formalization is still so inadequate that
computers play chess rather badly. One may formulate rules
which other people (who are 'language grandmasters' in
comparison with computers) can understand though the rules
are not expressed in a way a machine can 'understand'.

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