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Deep and Surface Case

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DEEP AND SURFACE CASE

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0.   The present paper is concerned with illuminating the
mechanics of surface case.[1] By "surface" case I mean the morpho-
logical manifestation of government in what are traditionally
called case languages.   This is opposed to the abstract or "deep"
case of Chomsky's recent work (1979, 1980).   Abstract case is
a projection of government, defined by him for configurational
languages in terms of the minimal c-command relation.   I will
argue that the notion of government can be used to translate
Chomsky's abstract case into morphological case.

Case may be assigned to various structures in the course
of a derivation, and proper government is defined in accordance
with the way constituents are related on these levels.   Firstly,
there is structural case, which closely parallels Chomsky's
abstract notion of government in his binding theory.   Structural
case is divided into lexically-conditioned case, relevant to
particular lexical items in base structures, and syntactically-
conditioned case, which is either transformational or pertains
to surface structures.

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Secondly, I will discuss "logical" case, where an NP in the scope of a logical operator may be required to have a special case. Thirdly, and the most superficial way in which an NP may acquire case features, is when it is governed by INFL (inflection), in which case the relevant NP must bear nominative features. Evidence from Gothic free relatives, which are non-matching, suggests nominative follows all structural case-assignment.

The final way words can get case is from their traces. This is certainly true for wh-words in COMP, the traces of which are considered variables. I argue that all NPs in COMP get the case of coindexed anaphora, and that this is an extension of the general principle of percolation -- hence it may occur on any level of representation. COMP Assessibility, as conceived of by Groos and van Riemsdijk (1979), is subsumable under the rubric of case from trace. Lastly, the above model is seen to have significant implications both for possible case systems and linguistic change.

1. I assume that case is not assigned to lexical items but is checked against them. In accordance with the strict Lexicalist Hypothesis, words are entered into the lexicon fully spelled-out; that is, complete with endings and features. Within a paradigm, all variants are listed along with their possible case features. This avoids a proliferation of features and forms and is adequate for all kinds of agreement. Items participating in a syncretism are only listed once. Thus, the animate interrogative pronoun in German (for the relevant cases) has entries as in (1a), whereas the inanimate one needs only the entry in (1b).

(1a) wer: /ver/, [nom]; wen: /vēn/, [acc]

(1b) was: /vas/, [nom, acc]

Modern German requires that the case role of a wh-word in a free relative be the same in matrix and embedded clauses. Consequently, (2a) is excluded.[2]

(2a) *wen (acc)/*wer (nom) er beisst wird bald sterben
     *whom   /who   he bites will soon die

However, was 'what' may be interpreted as nominative in one clause and accusative in the other, as in (2b).

(2b) was (nom/acc) er za erzählen hatte, war nicht viel
     what   he to tell   had,   was not   much
   'what he had to tell wasn't much'

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An approach in which features are spelled-out as morphological formants is not able to accomodate the situation in (2b) so elegantly. Lexical items are not arbitrarily inserted when enough features to define them have been acquired, but rather are inserted directly into the output of the PS-rules in the base.

      2. In structural government, a governer X minimally c-commands the NP it governs. This is defined in (3b).

(3a)   a c-commands b iff the first branching node dominating a also dominates b and neither a nor b dominates the other

(3b)   a <u>minimally</u> c-commands b iff a c-commands b and there is no c such that a c-commands c and c c-commands b, but c does <u>not</u> c-command a
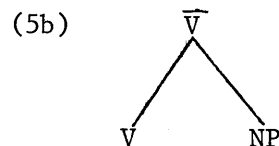
For Russian the configuration in (4) provides a general schema sufficient to include all structural government.
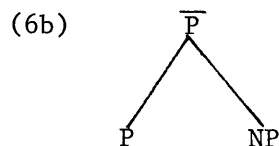
(4) $\bar{\bar{X}}$

           X   NP
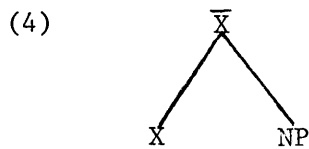
      where X = any lexical category

[-N] governers, that is P and V, predictably require the object NP to be accusative. In (5) X = V and in (6) X = P.

(5a)   videl knigu (acc)   (5b) $\bar{\bar{V}}$
        saw   book

                                        V   NP

(6a)   v Moskvu (acc)   (6b) $\bar{\bar{P}}$
        to Moscow

                                          P   NP

<u>knígu</u> 'book' in (5) and <u>Moskvú</u> in (6) are in the accusative since they are governed by [-N] governers. If, however, a V or P with inherent lexical governance properties had been inserted, the complement would appear in an oblique case. In (7) and (8) <u>zavódom</u> 'factory' and <u>knígoj</u> are in the instrumental case.

(7)   upravljal zavodom (instr)
       managed   factory

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(8)   s knigoj (instr)
       with book

The governers upravljál 'managed' and s 'with' here require
instrumental complements. One might even say they are sub-
categorized for NP [instrumental].

       The syntactically-conditioned case-assignment of (5)
and (6) is opposed to the lexically-conditioned case of (7)
and (8) in that the latter is relevant to base structures,
whereas the former must apply after transformational movement
rules have had effect. However, it is not sufficient to argue
that accusative and oblique pertain to different levels of
representation solely on the basis on the fact that Vs and Ps
"typically" govern the accusative. Later I will show that
logical case must intervene between lexical and syntactic
case. Crucially, the transformational component also must
follow lexical case, but precedes syntactic. Assuming that
Passivization involves movement, "Move α" must intervene between
these two points at which case can be assigned to NPs. It is
natural to suggest that they are associated with deep and sur-
face structures, respectively. The effects of Passive can be
demonstrated by comparing the German sentences in (9), or
the Serbo-Croatian ones in (10).

(9a)   wann werden wir (nom) gesehen
       when become we   seen
       'when are we seen'

(9b)   wann wird uns (dat) geholfen
       when become us   helped
       'when are we helped'

(10a) da   se   on (nom) hapsi
      that refl he   arrest
      'that he be arrested'

(10b) da   se   njemu (dat) prašta
      that refl him   forgive
      'that he be forgiven'

The (a) sentences have verbs that syntactically assign accusa-
tive after movement of the object NP, but the verbs in the (b)
sentences lexically govern the dative. Objects of verbs that
lexically govern oblique remain oblique under passivization
whereas objects of verbs without special governance are eventually
checked for nominative. This is because uns 'us' in (9b) and
njèmu 'him' in (10b) are moved after the dative case on them
has been checked, but wir 'we' and on 'he' in (9a) and (10a)
move before they would become subject to accusative checking.

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The behavior of lexical items that govern more than one case affords some supporting evidence for separating syntactically-governed case from lexical case. It appears, for Russian at least, that if a verb or preposition governs more than one case, in one of its usages it will govern accusative. In other words, it is either specified for lexical governance properties, or assigns accusative syntactically by default. Thus, v 'in' in (6) may also take the locative case. In (11) it has a locative interpretation.

(11) v Moskve (loc)
      in Moscow

Consider also the prepositions za 'behind' and pod 'beneath', which in Russian take accusative objects for direction and instrumental ones for location. (12) and (13) illustrate this.

(12a) za gorod (acc)   (12b) za gorodom (instr)
      '(to) outside the city'   '(at) outside the city'

(13a) pod stol (acc)   (13b) pod stolom (instr)
   '(to) beneath the table'   '(at) beneath the table'

If an oblique is not checked for in the base, a [-N] governer will require an accusative object on the surface.[3] Another consequence of this is that [-N] governers may never take nominative complements, since they either assign an oblique case lexically or accusative syntactically, just in case no lexical government specification exists.

3. Other categories may assign case when they are governers. In Russian we can let X in (4) also be equal to N, A, and Adv. Consider the following examples:
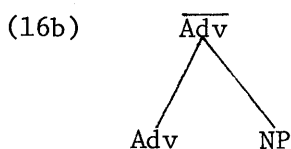
(14a) kniga Tolstogo (gen)   (14b)
      'book (of/by) Tolstoy'
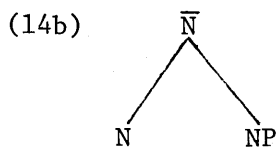
(15a) polnyj knig (GEN)   (15b)
      'full (of) books'
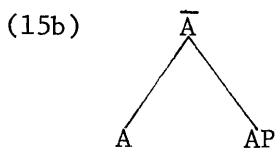
(16a) vniz golovoj (instr)   (16b)
      down (with) head
      'head lowered'

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This situation is distinct from that found in English, where
only [-N] governers assign case. Chomsky (1979) uses this to
motivate the presence of a preposition in the phrases in (17).

(17) the destruction of the city, full of books, out of breath

of is inserted in order that city, books, and breath be assigned
case, since Ns, As, and Advs don't assign case in English.

     If we were to assume that genitive was the unmarked case
of [-N] governers, then the lexical exceptions in (18) should
follow the expected pattern.

(18a) pamjatnik poetu (dat)   (18b) upravlenie zavodom (instr)
      'statue (to) a poet'   'management (of) a factory'

(18c) bogatyj neft'ju (instr)
      'rich (in) oil'

Note that in (18a) the genitive poéta is also acceptable, although
the meaning becomes 'statue of a poet'

     However, there are several serious problems in this model
that suggest to me that [-N] governers in Russian always assign
case lexically. Firstly, genitive patterns as lexical with
[-N] governers. Why can Vs and Ps require genitive complements
when Ns and As in the modern languages can't tolerate accusative
ones? Secondly, there is no motivation for claiming genitive
checking is based on surface structures. Movement of a [-N] NP
complement to outside the domain of its governer does not make
it subject to alternative case strategies, nor does it oppose
the supposedly syntactic situations of (14)-(16) to the lexical
ones of (18). Nouns in Slavic rarely govern other than the
genitive, and appear to be unable exclusively to govern another
case. In spoken German, they are reluctant to govern, and verbal
government of genitive has been highly restricted. For these
reasons I suggest that, for the languages under discussion,
genitive assignment has been lexicalized to always take place
in the base.

     4. Let us now see how "logical" case fits into the model as so
far developed, and how it interacts with the two kinds of case assign-
ments discussed. Logical operators may determine the case of items
within their scope. NPs in the scope of negation or quantification
in Russian appear in the genitive case. Consider the sentences
in (19) and (20).

(19a) Ivan ne vidit zavoda (gen)   NEG overrides expected acc
           not see factory
      'Ivan doesn't see a/the factory'

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(19b) Ivana (gen) ne bylo   NEG overrides expected nom
                 not was
       'Ivan wasn't (there)'

(20a) Ivan vidit pjat' knig (GEN)   QU overrides expected acc
      Ivan sees   five books

(20b) pjat' knig (GEN) ležalo na stole   QU overrides expected nom
      five books   lay   on table

(20c) pod   pjat' stolov (GEN)   QU overrides expected acc
      '(to) under five tables

The logical operators in (19) and (20) c-command everything that
will, in the representation of logical form, be within their
scope. They can be roughly diagrammed as in (21) and (22).[3]

(21a) ... (21b) ...

(22a) ...

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(22b)

          pod   pjat'   stolov (GEN)

(22c)

pjat' knig (GEN)   ležalo na stole
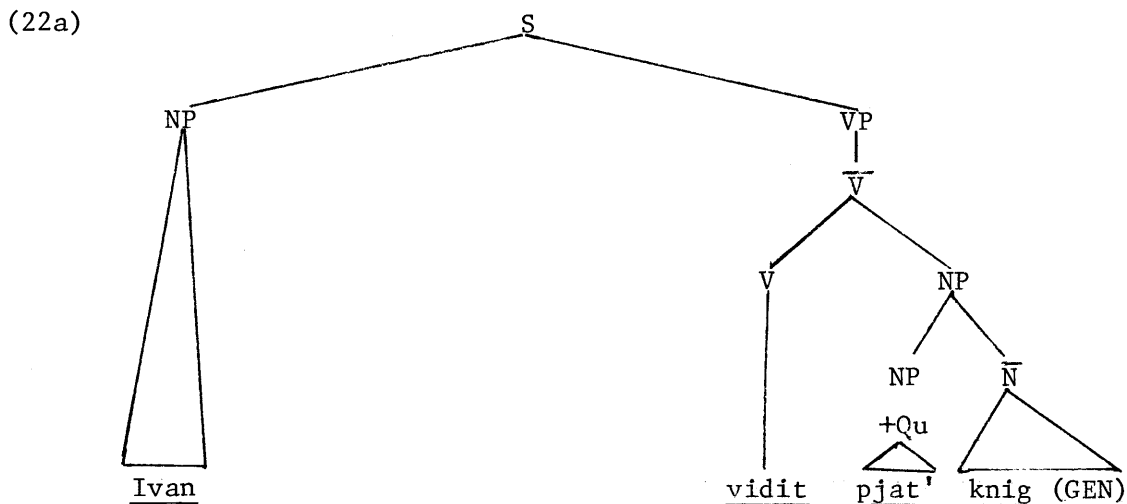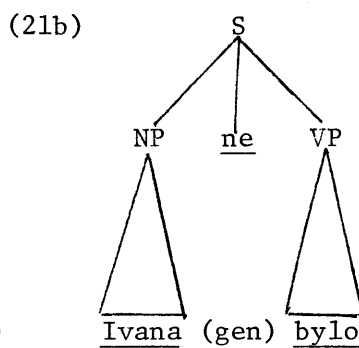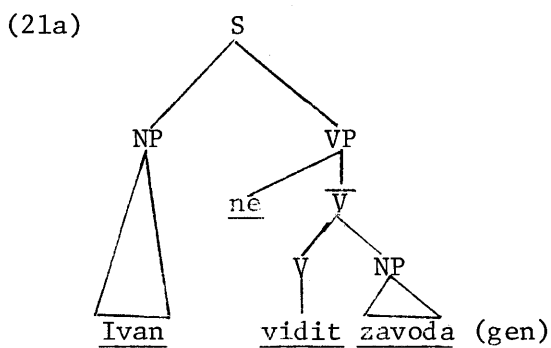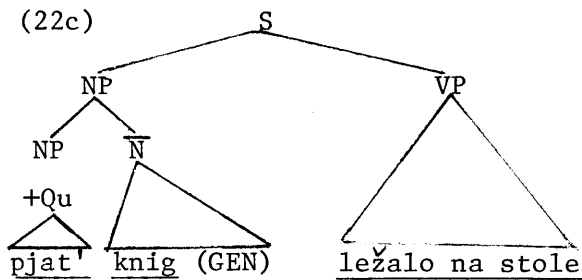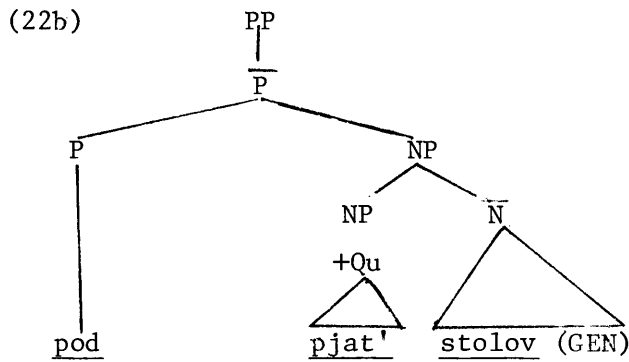
Three points should be noted about how logical operators are distinct from structural governers. Firstly, case-checking is conditioned by a grammatical feature rather than a particular category or lexical item. Thus, negative operators like net '(is) not' and nel'zjá 'can/must not' in (23a) and (23b) work the same way as simple negation.
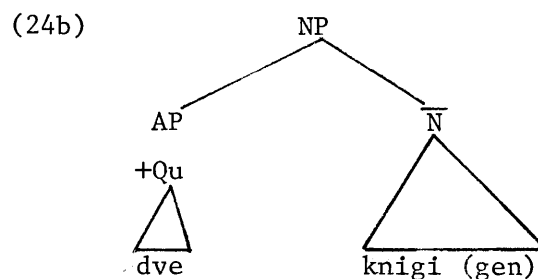
(23a) Ivana (gen) net   (b)   ètoj knigi (gen) nel'zja (pro)čitat'
                   not   this book   impossible (to) read
        'Ivan isn't (here)'   'this book can't be read'

Also, quantifiers like mnógo 'many', as well as adjectival ones (dva, tri, četyre 'two, three, four'), zero ones (in the partitive construction), and the distributive prepositional phrase containing po all may require genitive. Examples may be found in (24), where structures for these logical governers are suggested.

(24a)   NP   (24b)   NP

   mnogo   knig (GEN)   dve   knigi (gen)

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(24c)

(24d)
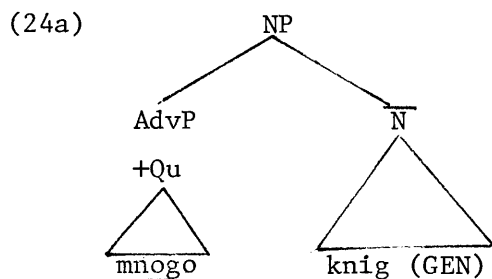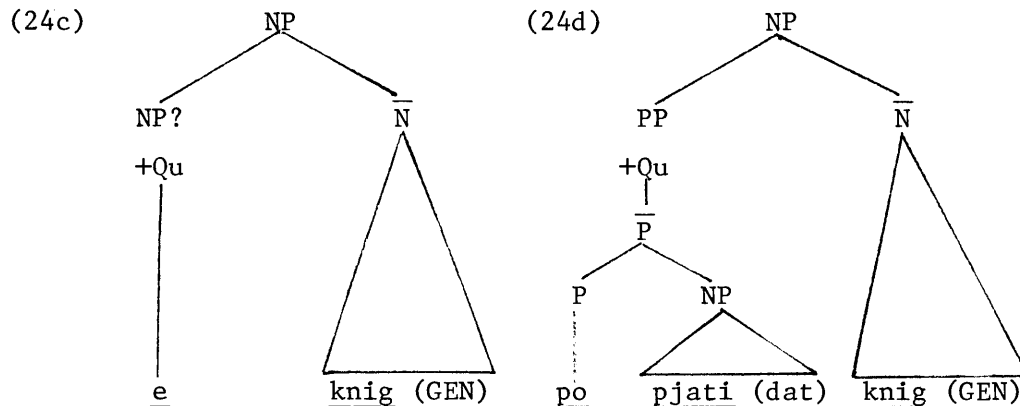
In (24) we can see that it is truly the presence of the feature [+Qu] that conditions case assignment. Note that the unique behavior of the P po in (24d) follows automatically since the number, and only the number, is governed by po, leaving the [+Qu] phrase to require genitive on N. It also follows that Russian dva, tri, četyre cannot participate in the structure in (24d), since these are APs and prepositions require NP objects.

Secondly, it is obvious that logical operators are not restricted to the structure in (4). In addition to being able to c-command through phrasal nodes, they can also govern the case of N. Russian adjectives and determiners (which are probably also adjectives) may be outside the scope of the quantifier, as in (25).

(25) èti (NOM) zamečatel'nye (NOM) pjat' let (GEN) nezametno prošli (pl)
     these   remarkable   five years imperceptibly passed

Note that subject-verb agreement in (25) is determined by the nominative determiner èti.

Thirdly, and crucially, logical operators must intervene between lexically- and syntactically-conditioned case-checking. Compare (26a) and (26b) with (27a) and (27b).

(26a) Ivan vidit   knigu (acc)   (26b) Ivan ne vidit knigi (gen)
      'Ivan sees a/the book'   'Ivan doesn't see a/the book'

(27a) Ivan upravljaet zavodom (instr)
           manages   factory
      'Ivan manages a/the factory'

(27b) Ivan ne upravljaet zavodom (instr)
      'Ivan doesn't manage a/the factory'

Syntactic governers, which assign accusative, are susceptible to logical case conditions. However, even if a lexical governer is

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negated, the case it requires appears on its complement. This
implies that logically-conditioned case-assignment is relevant
after lexical insertion, where lexically-conditioned case holds
sway. The fact that <u>zavódom</u> in (27b) is not genitive has
nothing to do with the relative scopes of the verb and the
logical operator. This can be demonstrated by (28) and (29),
where Vs and Ps that inherently assign an oblique case take
the <u>entire complement NP</u> in that oblique case.

(28) Ivan upravljaet pjat'ju (instr) zavodami (INSTR) (cf. 20a/22c)
      Ivan manages   five   factories

(29) pod pjat'ju (instr) stolami (INSTR) (cf. 20c/22c)
      '(at) under five   tables'

The genitive of NEG in (27b) and QU in (28) and (29) is overridden
by the inherently governed instrumental case. From these data I
conclude that logical case pertains to a single level, and that
this level is ordered between lexical and syntactic case.

      Returning briefly to the problem of syntactic adnominal
genitive, we can see that it patterns as a lexical case with
respect to logical government as well. Compare (30) and (31)
with (14a) and (18a)

(30) kniga $\begin{Bmatrix} \text{dvux (GEN) moix (GEN)} \\ \text{moix (GEN) dvux (GEN)} \end{Bmatrix}$ prijatelej (GEN)

      'a/the book (of) my two friends'

(31) pamjatnik   dvum (DAT) poetam (DAT)
      'a monument (to) two poets'

The lexical case, be it genitive, or some semantically-marked case,
takes precedence over logical case. These [+N] governers work
differently from the [-N] governers in (20a) and (28a). Genitive
is relevant before logical case and pertains to the base, even
though its appearance is entirely predictable structurally.

      I conclude from the data in (26)-(31) that logical case is
relevant at a level of structure intervening between "deep"
structure (where lexical case is checked) and surface structure
(by which syntactic case must be checked). Presumably, logical
scope relations can be defined as soon as lexical insertion has
taken place. Note that logical case can be checked on the basis
of tree structures alone. These need not necessarily be inter-
preted, or translated, into some kind of deep level of logical
form. However the model of grammar is able to accomodate what
I have called "logical" case, it definitely exists and needs to
be contended with. In fact, it may be a powerful and explanatory
enough device to account for a wide range of phenomena. Some
things that come to mind are the genitive object of the Old

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Church Slavonic supine, which alternates with accusative objects
for all Vs, <u>except</u> those that lexically take obliques, the be-
havior of the topic marker <u>wa</u> in Japanese, which "replaces"
subject marker <u>ga</u> and object marker <u>o</u>, but accrues to oblique
and lexically-conditioned case markers, and even ergative case
systems, where the first argument of the verb is marked [absolutive].

   5. I have assumed throughout that a percolation mechanism
gets case from non-terminal nodes down to terminal ones, which
is where case is checked against forms.

   Percolation in this model is seen as sending features from
the maximal projection of a category down to the terminal nodes.
Case is then matched against the forms of the lexical items.
Every terminal [+N] node must at some point be approved in this
way for case. In addition, it is necessary to assume percolation
takes place only after all NPs have been marked for the appropriate
case at each level of representation. Every [+N] node must have
a case feature associated with it--the Case Filter excludes caseless
items in the output of the syntax.

   Percolation takes place after case has been assigned to
whatever NPs are subject to case-checking on each level. Sending
features up and down the tree is probably an ongoing process that
distributes features whenever relevant. If a feature percolates
down to an empty node, the feature is then checked against the
nominal coindexed with that node. This is how case from trace
gets to have effect in (32).

(32)   wen$_i$ (acc) kannst du sehen t

       whom   can   you see

The verb <u>sehen</u> 'see' assigns [accusative] to its object NP,
and this feature percolates down to find a trace coindexed with
<u>wen</u>. Note that the contents of COMP will always be ungoverned
in matrix sentences, regardless of whether a full NP or a <u>wh-</u>
word is "in question". Consider (33).[5]

(33)   meinen (acc) Freund$_i$ (acc) kann ich sehen t$_i$
       my   friend   can I   see

Here again the NP in COMP gets the case of its trace. That <u>wh-</u>
words always get their case from trace is an artifact of their
always being moved to COMP, which is an ungoverned position.

   In embedded clauses, however, this is not necessarily so.
Free relatives provide an excellent testing-ground for the syntax
of case. I believe that COMP Accessibility, which says that COMP
in (34) may be accessible just in case NP$_2$ is empty, is an exten-
sion of case from trace, which in turn is part of the percolation

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algorithm. If the COMP hypothesis of Groos and van Riemskijk (1979)
is correct, we have the structure in (34) for free relatives.

(34)
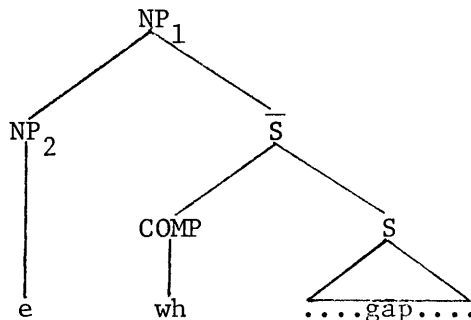
The NP in the matrix sentence may be required to have the same
case as the fronted wh-word, or there may be a case conflict.
If there is a conflict, there are at least two possibilities:
the structure is starred, as in Modern German (keeping in mind
the syncretism facts of (1) and (2)), or it is acceptable, as
in a number of classical Indo-European languages.

According to Harbert (1980) Gothic is a language with non-
matching free relatives. He notes that there exists some kind
of hierarchical principle regulating which case appears on the
wh-word in the headless relative. His examples provide the
following data:

(35)

		matrix case role	embedded case role	case of FR
	1	acc	nom	acc
matrix	2	dat	nom	dat
triumphs	3	dat	acc	dat
	4	gen	acc	gen
	5	nom	acc	acc
relative	6	nom	dat	dat
clause	7	acc	dat	dat
triumphs	8	acc	gen	gen

These results fall naturally from the model of primary case-
marking I am putting forward. Lexical case in the lower clause
gets to be checked on the wh-word first, even before movement.
It makes intuitive sense to say that the wh-word is coindexed
with e, since e c-commands COMP and is semantically identified
with it. As Koster points out, the situation of free relatives
is nevertheless bizarre, since an empty node c-commands the wh-
word rather than the other way around.

If e is indeed coindexed with the wh-word (as Groos and van
Riemsdijk must assume), then it is clear that upper lexical case
should also get to COMP before lower syntactic case. The oblique
case on NP_1 in (34) percolates down to e and, finding no lexical

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item against which to check case features, goes over to the coin-
dexed COMP. This, too, is empty. wh-Movement can subsequently
place any non-case-marked (i.e., not yet checked for case) wh-word
into COMP.[6] It is then matched against the oblique feature al-
ready present. This approach naturally predicts that there cannot
be a free relative situation in Gothic involving two obliques,
and indeed there is a curious gap in the corpus--no examples are
attested involving both dative and genitive.[7]

      6. Situations 1 and 5 in (35) deserve some comment. They
imply that nominative checking must follow accusative checking,
since accusative always has precedence over nominative. Assuming
nominative to result from government by INFL (or its trace), we
can consider the problem situation in diagram (36) to demonstrate
that nominative pertains to an extremely surfacey level of repre-
sentation.

(36)
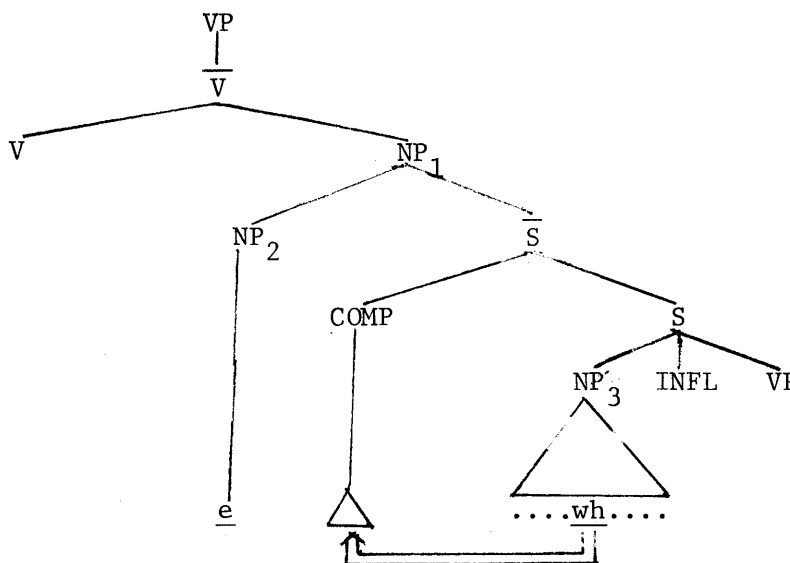
The wh-word in (36) ends up being accusative. Case is marked
on NP_1 and percolates down to NP_2 and over to NP_3 in COMP before
nominative checking is initiated. Of course, nominative can
precede case from trace, as in (37).

(37) wer_i (nom) t_i kommt
        who   is coming

This example provides further support for the hypothesis that case
from trace, as an extension of percolation, happens after case-
assignment at each level of case-checking.

      7. I have argued that case is assignable to NPs at various
points in a derivation, and that the case feature percolates
down to terminal [+N] nodes, where it is checked against lexical
items. If no lexical item is present, the feature is checked

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against coindexed nodes. I have isolated at least the following
four types of case, in order of application: lexical case,
logical case, syntactic case, and nominative (or surface) case.[8]
This model predicts that languages should differ in terms of
what structures can interact with case. English, for example,
only has nominative left (plus case from trace which follows
from percolation).

Logical case and syntactic case tend to get lexicalized,
which may explain the bizarre behavior of [+N] governers mentioned
above. A neat example of logical case being lexicalized can
be drawn from Serbo-Croatian. Serbo-Croatian differs from Russian
in that it lacks logical case. Thus, ne + V in general does not
require genitive on its NP complement, although some lexical
items, whether affirmative or negative, do. Compare the Russian
in (26b) and (23a) with the Serbo-Croatian in (38) and (39).

(38)   ne vidim knjigu (acc)
       not I-see book
       'I don't see a/the book"

(39a) nemam vremena (gen)   (39b)   imam vremena (gen)
      "I don't have the time'   'I have the time'

With quantifiers the data are even more striking. Recall that
Russian illustrates "case-switching" resulting from the fact
that logical governers intervene between lexical and syntactic
ones. Serbo-Croatian does not behave this way, since logical
governers have been lexicalized and hence override other lexical
governers outside their scope. Relevant examples are given in (40).

(40)   Russian (a) v pjat' dnej (GEN) (b) s pjat'ju (instr) knigami (INSTR)
                   in five days   with five   books

       S-Cr   (c) za pêt dânâ (GEN) (d) sa pêt knjigā (GEN)
                   in five days   with five books

       NB: v/za in these usages govern the accusative, s/sa govern
            instrumental

The numeral pêt in Serbo-Croatian governs the genitive regardless
of whether it is in an NP marked accusative or oblique. Note
that these numerals have a frozen form (with accusative desinence).
The quantifier cannot change morphologically to accomodate ex-
ternal governance because it is a fixed lexical form.

A case-checking model avoids the globality inherent in a
rule-oriented approach. We have seen that a rule of "case assign-
ment" would need to be global enough to have access to the base
representation and the lexicon, logical form, surface structure,

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and, at the level of surface structure, must be able to look down
the tree indefinitely to find the case of a trace left deeply em-
bedded by successive cyclic wh-movement. Instead, I conceive
of case as a kind of well-formedness condition on lexical items
in representations, which may be checked at all these points
in the derivation.[9] Otherwise, feature clusters would be
mapped into morphological material right before the phonology
(if limited to a single level at all) and case assignment to
lexical items would be global. I have shown, however, that the
conditions on case are distinct enough to warrant several possible
places at which case may be assigned to an NP.

The operation of surface case has been investigated with
the hope of demonstrating that diverse systems can be predicted
from the theory of government by allowing different levels of
linguistic organization to interact with case. It is apparent
that case is assigned to NPs on various levels of representation,
although the exact parameters involved need to be determined.
The present study was carried out under the premis that by in-
vestigating a limited phenomenon, such as is surface case, one
can often shed light on the general properties of the theory
of language, and with the belief that further research into more
complex case systems will fill out and make more precise the model
advanced here.

FOOTNOTES

[1] This paper owes its present form largely to repeated dis-
cussions with Wayles Browne, Wayne Harbert, and Carlos Piera.
I would also like to thank Noam Chomsky and Randy Hendrick for
encouraging me in my work on case, as well as Joe Emonds,
Linny Gerstein, and Charles Townsend, who have shaped my
thinking in more ways than I care to admit in print.

[2] Examples (2a), (2b), and the data in (35) are due to Harbert
(1980). Plurals are typed in UPPER CASE LETTERS, singulars in
lower case.

[3] Similar facts are available for verbs.

[4] Arguments for these structures can be found in my 1979 LSA
paper on Slavic numerals, as well as in Babby (1980).

[5] Bob Freidin has suggested to me that *meinen Freund* in (33)
has actually been stylistically moved to a TOPIC position sister
to S̄ after accusative assignment. This causes problems for
Koster's (1975) analysis of Dutch and German, which I have
implicitly adopted in my account of case.

[6] This restriction may not hold for some languages, notably
Classical Greek.

[7] In all fairness, this gap may be an artifact of the size of
the corpus.

[8] Whether these all pertain to distinct levels of linguistic
organization or not needs to be investigated. David Pesetsky
has pointed out to me the redundance of my model. Perhaps,
case is assigned by a single rule "Assign Case", whose operation
is parametricized by general conditions on whatever components
it is restricted to for a given language.

[9] Agreement in general can be conceived of as a feature matching
function, where conflicts often give rise to surface variants.

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