



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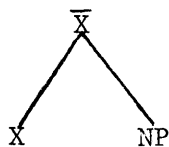
An approach in which features are spelled-out as morphological formants is not able to accommodate the situation in (2b) so elegantly. Lexical items are not arbitrarily inserted when enough features to define them have been acquired, but rather are inserted directly into the output of the PS-rules in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

2. In structural government, a governor 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 minimally 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 not c-command a

For Russian the configuration in (4) provides a general schema sufficient to include all structural government.

(4)

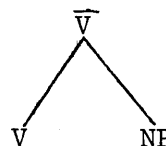


where X = any lexical category

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

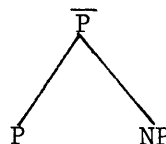
(5a) videl knigu (acc)
saw book

(5b)



(6a) v Moskvu (acc)
to Moscow

(6b)



knígu 'book' in (5) and Moskvú in (6) are in the accusative since they are governed by [-N] governors. 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) zavódom 'factory' and knígoj are in the instrumental case.

(7) upravljaj zavodom (instr)
managed factory

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- (8) s knjigoj (instr)
with book

The governors 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 surface 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 accusative 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 njemu '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

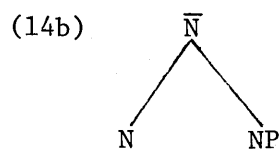
Consider also the prepositions za 'behind' and pod 'beneath', which in Russian take accusative objects for direction and instrumental ones for location. (12) and (13) illustrate this.

- (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'

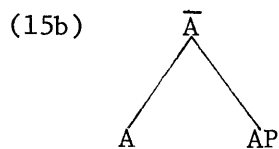
If an oblique is not checked for in the base, a [-N] governor will require an accusative object on the surface.³ Another consequence of this is that [-N] governors may never take nominative complements, since they either assign an oblique case lexically or accusative syntactically, just in case no lexical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

3. Other categories may assign case when they are governors. In Russian we can let X in (4) also be equal to N, A, and Adv. Consider the following examples:

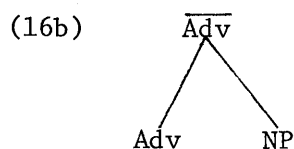
- (14a) kniga Tolstogo (gen)
'book (of/by) Tolstoy'



- (15a) polnyj knig (GEN)
'full (of) books'



- (16a) vniz golovoj (instr)
down (with) head
'head lowered'



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This situation is distinct from that found in English, where only [-N] governors 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] governors, 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] governors in Russian always assign case lexically. Firstly, genitive patterns as lexical with [-N] governors. 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 governor 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.

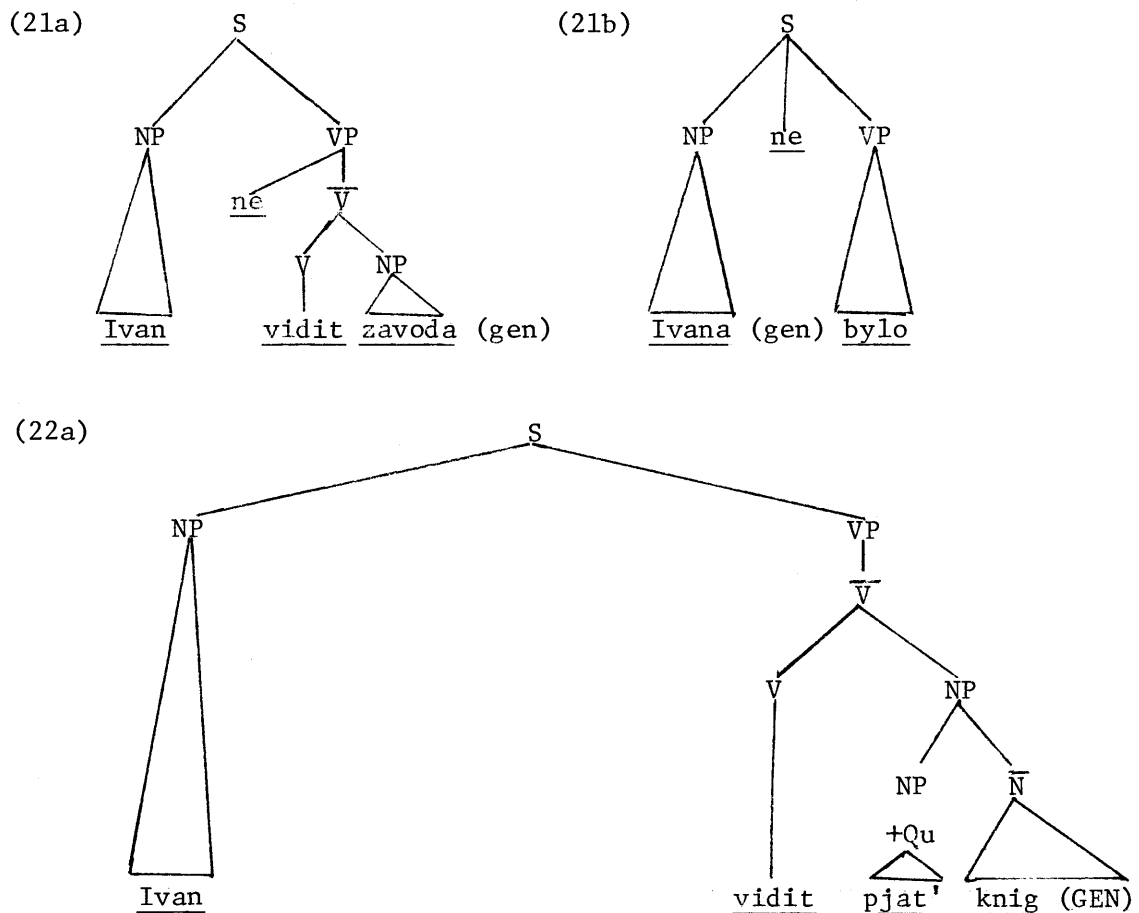
4. Let us now see how "logical" case fits into the model as so far developed, and how it interacts with the two kinds of case assignments discussed. Logical operators may determine the case of items within their scope. NPs in the scope of negation or quantification in Russian appear in the genitive case. 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'

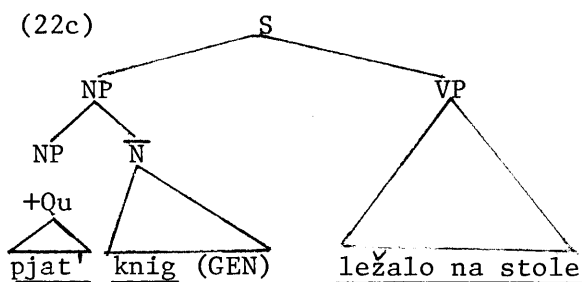
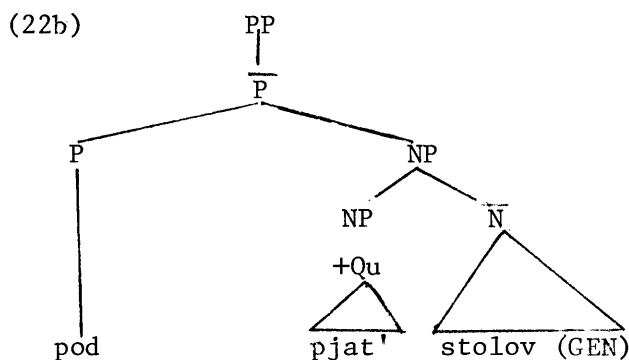
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- (19b) Ivana (gen) ne bylo NEG overrides expected nom
 not was
 'Ivan wasn't (there)'
- (20a) Ivan vidit pjat' knjig (GEN) QU overrides expected acc
 Ivan sees five books
- (20b) pjat' knjig (GEN) ležalo na stole QU overrides expected nom
 five books 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



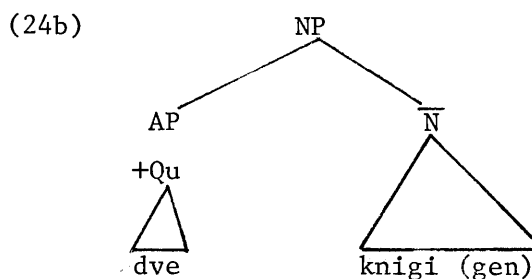
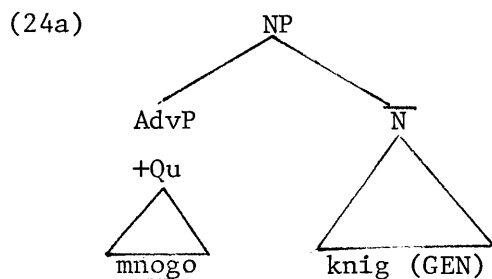
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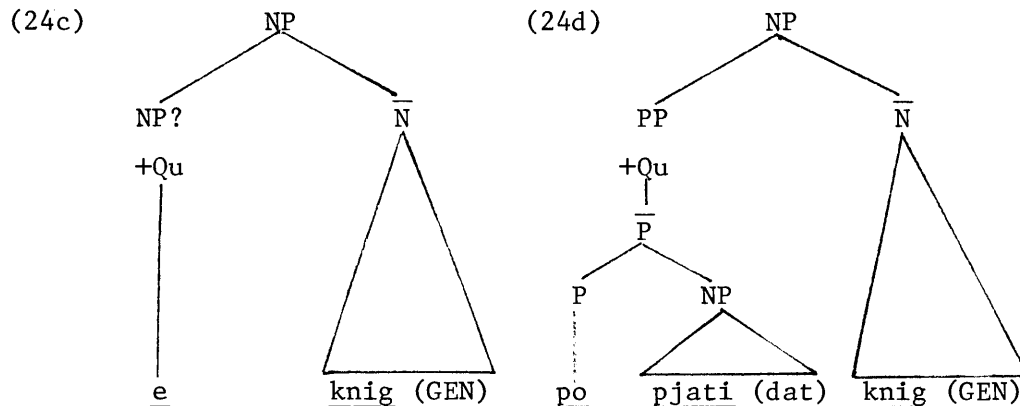
Three points should be noted about how logical operators are distinct from structural governors. Firstly, case-checking is conditioned by a grammatical feature rather than a particular category or lexical item. Thus, negative operators like net '(is) not' and nel'zjá 'can/must not' in (23a) and (23b) work the same way as simple negation.

- (23a) Ivana (gen) net not 'Ivan isn't (here)'
 (23b) ètoj knigi (gen) nel'zja (pro)čitat' impossible (to) read '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 governors are suggested.



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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) eti (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 eti.

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 governors, which assign accusative, are susceptible to logical case conditions. However, even if a lexical governor 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 zavódom 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 entire complement NP 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 $\left\{ \begin{array}{l} \text{dvux (GEN) moix (GEN)} \\ \text{moix (GEN) dvux (GEN)} \end{array} \right\}$ 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] governors work differently from the [-N] governors 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 interpreted, or translated, into some kind of deep level of logical form. However the model of grammar is able to accommodate 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, except those that lexically take obliques, the behavior of the topic marker wa in Japanese, which "replaces" subject marker ga and object marker o, 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 sehen 'see' assigns [accusative] to its object NP, and this feature percolates down to find a trace coindexed with wen. Note that the contents of COMP will always be ungoverned in matrix sentences, regardless of whether a full NP or a wh-word is "in question". Consider (33).⁵

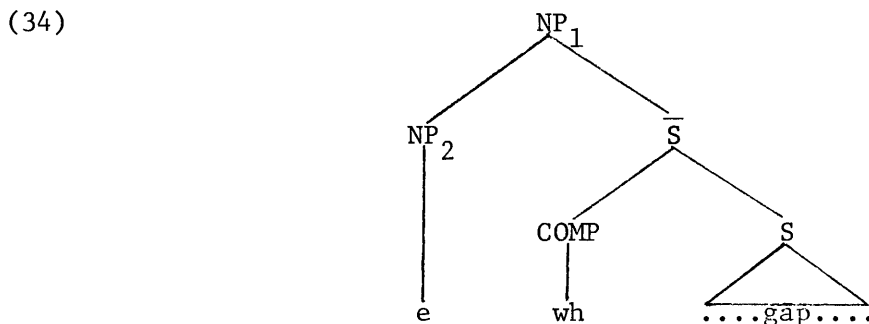
(33) meinen (acc) Freund_i (acc) kann ich sehen t_i
 my friend_i can I see

Here again the NP in COMP gets the case of its trace. That wh-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 NP₂ is empty, is an extension 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 Riemsdijk (1979) is correct, we have the structure in (34) for free relatives.



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.

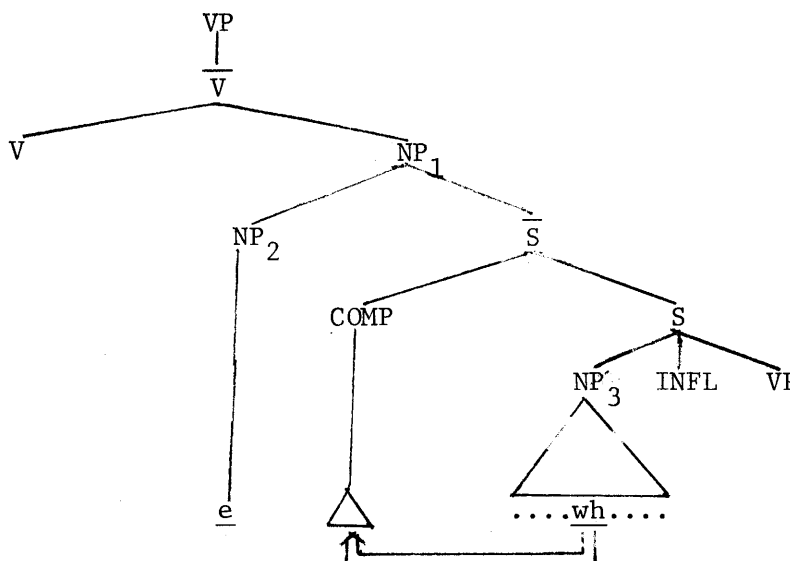
If e is indeed coindexed with the wh-word (as Groos and van Riemsdijk must assume), then it is clear that upper lexical case should also get to COMP before lower syntactic case. The oblique case on NP₁ in (34) percolates down to e and, finding no lexical

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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 NP₁ and percolates down to NP₂ and over to NP₃ 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_i is_i 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] governors 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)
'I don't have the time'

(39b) imam vremena (gen)
'I have the time'

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

(40) Russian (a) v pjat' dneĭ (GEN) (b) s pjat'ju (instr) knjigami (INSTR)
in five days with five books
S-Cr (c) za pět dññ (GEN) (d) sa pět knjigā (GEN)
in five days with five books

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

The numeral pět 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 accommodate external 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 assignment" 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 embedded 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 premise that by investigating 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 discussions 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 S 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 redundancy of my model. Perhaps, case is assigned by a single rule "Assign Case", whose operation is parametrized 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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