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## Remarks on Acceptability and Grammaticality

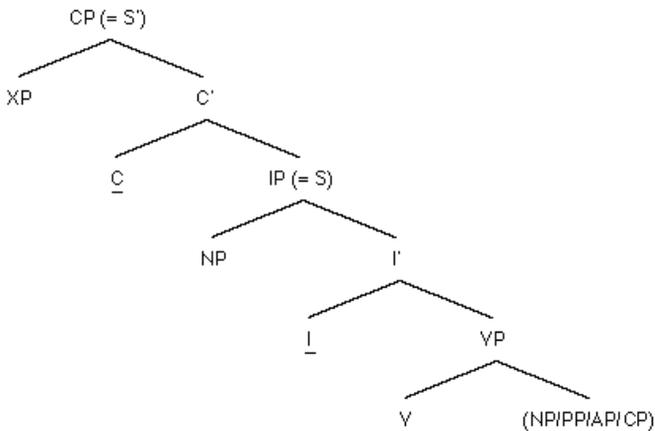
### Abstract

In the present paper a distinction is drawn between **acceptability** and **grammaticality**. These two concepts have often been confounded in the literature. Thus linguists have been prone to say that ‘the native speaker makes grammaticality judgments’. Nothing could be more mistaken. He makes acceptability judgments, and that is something entirely different. In this article, I shall make use of the sentence-schema which has been current since Chomsky (1986a) – a logical extension of X-bar syntax. Readers who are not familiar with the basic modules of modern TG-theory are referred to my articles in *Hermes*, 1 and *Hermes*, 2 (see references). In these two articles I adhered to the S-bar/S-schema of sentence structure. This is now obsolete. I shall adopt a relatively conservative view of bounding nodes (subjacency); i.e. I make no attempt to introduce the sophisticated theory of barrierhood developed in Chomsky (1986a). This is immaterial to the argument conducted in this paper.

### 1. The sentence-schema

The sentence-schema to be adopted looks as follows:

(1)



In (1) there are three **heads** (underlined): V is the head of VP (NP/PP/CP are possible complements of V); I (for **inflection** (i.e. it contains tense and agreement features)) is the head of I' and, ultimately, of IP – the sentence-nucleus; C (the **complementizer**) is the head of CP – the full clause. The NP hanging from IP is the subject; XP is the landing site for movement operations (in particular movement of maximal projections (including wh-phrases)).(1) can be converted into a **labelled bracketed string** in the usual way:

$$(2) \quad [_{CP} [XP] [C' [C] [_{IP} [NP] [I' [I] [_{VP} [V] ( [NP/PP/AP/CP] )]]]]]$$

and much simplified as follows:

$$(3) \quad [_{CP} [_{IP} NP [I' I [_{VP} V (NP/PP/AP/CP)]]]]]$$

Throughout we shall use simplified representations as in (2). (1) can be seen as X-bar syntax (which is a category-neutral generalization over lexical categories like N, V, A, and P (cf. XP in (1)) extended to the whole sentence.

## 2. The concept of I(nternalized)-language

Chomsky (1986b) introduces the notion of **I-language**. The I-language is the system of linguistic knowledge attained by the mature speaker of L (where L = an arbitrary language), i.e. his linguistic **competence** (cf. next section). The grammar of L is a **theory** of the structure of the I-language (constrained by the general linguistic theory, i.e. **universal grammar**). The grammar is formulated in terms of a number of sub-theories, or **modules**, e.g. the theory of **abstract case**, the theory of **thematic roles**, the theory of **bounding** (or **subjacency**), the theory of **government**, the theory of **traces**, the theory of **syntactic chains**, etc. As examples consider (4) and (5):

$$(4) \quad \text{It is unlikely that John will come}$$

(4) has the following I-language **representation** – at all levels of structure:

$$(4a) \quad [_{CP} [_{IP} \text{It is unlikely} [_{CP} \text{that} [_{IP} \text{John will come}]]]]]$$

In (4a) *it* is a pleonastic subject; it has no thematic role – it is a mere subject place-holder; *it* is assigned grammatical case by *is* (the theory of abstract case requires that every lexical NP be assigned abstract case (under government by some head)); *unlikely* governs and theta-marks the embedded CP; in the lower IP *John* is assigned case by *will*; *come* assigns a theta-

role to *John*. Next we turn to (5):

(5) John is unlikely to come

(5) has the **D-structure** (5a) and the **S-structure** (5b):

(5a) [CP [IP NP-e is unlikely [IP John to come]]]

In (5a) the NP in the upper IP is an empty NP (it is generated because every sentence must have a subject – a requirement of universal grammar); it has no thematic role; *unlikely* governs and theta-marks the lower IP; *John* is assigned a theta-role by *come*, but *John* has no case: *to* is not a case-assigner, and in English adjectives (in casu *unlikely*) cannot assign case; consequently, *John* must move by **NP-movement** to the upper empty NP-position to receive case. In moving, *John* leaves a coindexed *trace*, which has the same categorial status as the moved constituent:

(5b) [CP [IP John<sub>i</sub> is unlikely [IP t<sub>i</sub> to come]]]

In (5b) *John<sub>i</sub> – t<sub>i</sub>* form a syntactic **A(rgument)-chain**. An A-chain always has one case (assigned to the head of the chain (*John*)) and one theta-role (assigned to the chain as such). In (4) *John* constitutes a one-member A-chain. It follows that (4) and (5) are synonymous.

This, in essence, is the idea underlying I-language representations. We shall make use of such representations, as we go along.

### 3. Grammaticality and acceptability

Chomsky (1965) draws an important distinction between **grammaticality** and **acceptability**. The two concepts correlate with the well-known notions **competence** and **performance**. It is important from the outset to emphasize that grammaticality is a **theoretical** concept, just as much as, say, NP or grammatical case (cf. Newmeyer (1983)). A sentence is grammatical if it is generated by the grammar and ungrammatical if it is not generated by the grammar. In other words, it is only possible to talk about grammaticality with reference to a specific formal representation of the native speaker's competence, as this has been constructed by the linguist. Grammaticality is part and parcel of the I-language. It is the linguist who constructed the grammar that can make grammaticality judgments, inasmuch as it is he who has explicit knowledge of the structure of the I-language.

The linguistically unsophisticated native speaker cannot make grammaticality judgments, but only acceptability judgments. He has no intuitions about grammaticality as a theoretical concept for the simple reason that (un)grammaticality can only be defined by studying the rules and principles that constitute the I-language.

Chomsky (1965) further points out that neither grammaticality nor acceptability are absolute concepts: there are degrees of grammaticality (cf. section 5) and degrees of acceptability. Furthermore, there is not a one-to-one correspondence between (un)acceptability on the one hand and (un)grammaticality on the other. The two parameters can be combined in the following ways:<sup>1</sup>

(6)	Acceptability	Grammaticality
(i)	+	+
(ii)	–	–
(iii)	–	+
(iv)	+	–

Clearly (6i) and (6ii) represent the ideal, and in the simplest cases this pattern holds. Consider (7):

- (7) (i) The cat climbed up the tree  
 (ii) \*Tree the up climbed cat the

Every native speaker will find (7ii) unacceptable, and in this case this judgment no doubt reflects the speaker's competence, i.e. his unconscious knowledge of the structure of the I-language. The linguist will explain the ungrammaticality of (7ii) by reference to I-language principles – in this case word-order parameters.

Consider next the following famous example from Chomsky (1957):

- (8) (i) %Colorless green ideas sleep furiously  
 (ii) \*Furiously sleep ideas green colorless

About these examples Chomsky remarks: "Sentences (8i) and (8ii) are equally non-sensical, but any speaker of English will recognize that only the former is grammatical".<sup>2</sup> In Chomsky (1965), the picture has changed. Chomsky had then developed the idea that the so-called **selectional**

<sup>1</sup> Ungrammaticality is indicated by asterisks; unacceptability by question marks; semantic anomaly by %.

<sup>2</sup> What Chomsky means by the term 'grammatical' here must be something like 'acceptable because it conforms with the word-order patterns of English'.

**restrictions** should be incorporated in the base component of a generative grammar in a specific way. This approach defined (8i) as **unsyntactic**. It is important in this connection to note that it was the theory itself that drew the distinction between unsyntactic and unsemantic. In other words, the concept of grammaticality is dependent on **levels of representation** – and levels of representation (syntactic, semantic, and phonological) are an integrated part of the structure of the I-language. We may note in passing that today (8i) would once again be considered syntactically well-formed, but semantically anomalous.

Consider next the following paradigm:

- (9) (i) It seems certain [<sub>CP</sub> that [<sub>IP</sub> John will win]]  
 (ii) John<sub>i</sub> seems certain [<sub>IP</sub> t<sub>i</sub> to win]  
 (iii) \*John<sub>i</sub> seems certain [<sub>CP</sub> that [<sub>IP</sub> t<sub>i</sub> will win]]

(9i) and (9ii) are analogous to (4) and (5b). (9iii) presents a problem. Note that it is semantically fully transparent. The native speaker will find it unacceptable, and the linguist will find it unsyntactic: it violates some principle of the I-language. The crux of the matter here is that arguments cannot be moved out of a finite clause to another argument-position. The empty category – t<sub>i</sub> – is an NP-trace; NP-traces have no case; but in (9iii) t<sub>i</sub> is governed and case-marked by *will*. This is a violation of the A-chain principle formulated above.

The examples we have considered so far have conformed to (6i) and (6ii) – the unmarked case, we might say.

We now turn to some examples of (6iii). We shall be concerned with *centre-embedding* and *self-embedding*.

Consider (10):<sup>3</sup>

- (10) ?The politicians [who think [that [if the measures now proposed by the government should turn out to be without effect on the balance of payments] more drastic measures should be taken]] are likely to be right

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<sup>3</sup> The NP *The politicians who think that if the measures now proposed by the government should turn out to be without effect on the balance of payments more drastic measures should be taken* is the subject of *to be right*. This has been moved by NP-movement to the upper empty NP-position. Strictly speaking, therefore, there should be a trace between *likely* and *to be right*. Basically, the structure of (10) is analogous to that of (5a) and (5b) – apart from the successive embedding. (There are additional complications, such as the two passives and the fact that the NP *the measures now proposed by the government* is the subject of *to be*). The D-structure of (10) would be quite complex. The S-structure would contain four NP-traces and one wh-trace.

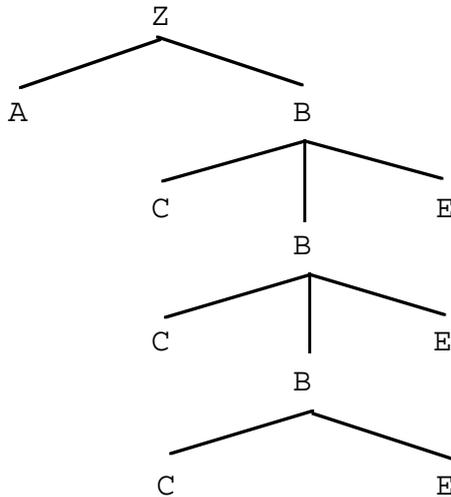
In (10) we find three successively embedded sentences. It is not unlikely that some native speakers will find (10) marginally acceptable. But it is grammatical: there is no non ad-hoc way of limiting the recursive power of the grammar. (10), then, is a reasonably good example of a fully grammatical sentence which is relatively low on the scale of acceptability. Chomsky and Miller give the following example (quoted in Chomsky (1965)):

- (11) ???Anyone who feels that if so many more students whom we haven't actually admitted are sitting in on the course than ones we have that the room had to be changed, then probably auditors will have to be excluded, is likely to agree that the curriculum needs revision

(11) is extremely low on the scale of acceptability, but it is generated by the grammar, and hence grammatical.

(10) and (11) are examples of centre-embedding. Let us now turn to self-embedding, which implies that one structure is centre-embedded in a structure **of the same type**. Schematically this is shown in (12):

(12)



(13) is an example: relative clauses have been successively centre-embedded in each other (cf. Jacobsen (1978)):

- (13) ???I will forget the malt [CP<sub>3</sub> which the rat [CP<sub>2</sub> which the cat [CP<sub>1</sub> which the dog worried] killed] liked]

Let us now apply the Passive transformation to the embedded CP1. The outcome is (14):

- (14) ???I will forget the malt which the rat which the cat which was worried by the dog killed liked

(14) is still unacceptable. Next we try CP2 and get (15):

- (15) ?I will forget the malt which the rat which was killed by the cat which was worried by the dog liked

(15) is better, but if we move one step further up to CP3, we get the perfectly acceptable (16):

- (16) I will forget the malt which was liked by the cat which was killed by the cat which was worried by the dog

(13) is totally unacceptable (this may be due to severe limitations on human short-term memory – but this is linguistically irrelevant). By successive application of Passive, we gradually create a **right-branching structure**. It is well known that right-branching structures are fully acceptable and fully grammatical. Observe that (16) of course **presupposes** (13); hence (13) is a fully grammatical sentence.

I have emphasized throughout that (un)grammaticality is determined by the grammar itself (as this has been constructed by the linguist). It happens not infrequently that linguists make different grammaticality judgments **without disagreeing on data**. Chomsky and Lasnik (1977) discuss such examples as (17) and (18):

- (17) That he left is a surprise  
 (18) (\*) He left is a surprise

In order to account for (17) and (18), they posit a grammatical **filter** which covers a wide range of phenomena. The effect of this filter is that (18) is ruled ungrammatical. We are not here concerned with the precise nature of this filter – it would lead us too far afield to become involved with details. The crucial point is that – given the filter – it is **the grammar itself** that characterizes (18) as an ungrammatical sentence. Bever (1970) argues that (18) is indeed a grammatical sentence, appealing to the following principle to explain the unacceptability of (18):

- (19) The first N ... V ... (N) sequence is processed as the main clause unless the verb is marked as subordinate.

(19) is an extralinguistic processing principle – independent of the grammar.

Finally, I give a couple of examples of (6iv). It is well known that relative pronouns can be deleted in English (in contradistinction to e.g. German or French). However, the relative pronoun cannot be deleted if it is in subject-position. In Ken Kesey's novel *One Flew over the Cuckoo's Nest* we find the following sentence on the first page:

(20) (\*)They got sensitive equipment detects your fear.

In (20) there is no subject-pronoun in front of *detects*. No doubt many linguists would rule (20) ungrammatical (a case of (6iv)). Clearly the sentence is acceptable – a sociolectal phenomenon.

A far more technical example is discussed by Langendoen and Bever in an article from 1973 entitled “Can a not unhappy person be called a not sad one?” Through a long series of syntactic arguments they reach the conclusion that the NP *a not unhappy person* is unsyntactic, but it is acceptable by virtue of a specific extragrammatical processing principle, analogous to (19). (The reader is invited to consult Langendoen and Bever's article – it is a perfect example of succinct syntactic argumentation).

#### 4. The systematic study of ungrammatical sentences

Originally I proposed to call this article “In Defense of Ungrammaticality”. The idea was that ungrammatical sentences provide us with as much insight into the nature of the I-language as do grammatical ones. Consider the following paradigm:

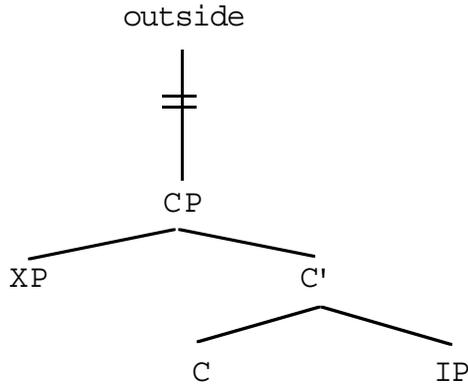
- (21) (i) They believe [<sub>IP</sub> John to have fallen behind the schedule]  
 (ii) John<sub>i</sub> is believed [<sub>IP</sub> t<sub>i</sub> to have fallen behind the schedule]  
 (iii) \*They say [<sub>CP</sub> [<sub>IP</sub> John to have fallen behind the schedule]]  
 (iv) John<sub>i</sub> is said [<sub>CP</sub> [<sub>IP</sub> t<sub>i</sub> to have fallen behind the schedule]]

The crucial example is (21iii). It is evident that this example would never occur in a corpus, and thus the questions it poses would never be answered. (21iii) can either be the result of an informant test, or, what is rather more likely, a product of the linguist's own intuition. (21iii) leads up to the systematic study of an ungrammatical sentence. The four examples in (21) show that there is a decisive difference in the syntactic potential of the verbs *believe* and *say*. Only the interacting modules that make up the internal structure of the I-language can shed light on the problems. Specifically, the modules we need here are (22):

- (22) (i) Government  
 (ii) Case theory  
 (iii) Bounding (subjacency)

The study of the verb *believe* (and a number of related verbs) shows that they can eliminate a CP in front of an embedded nonfinite clause (as in (21i) and (21ii) – cf. also (5a), (5b), and (9ii)). It is an invariable condition – in terms of the structure of the I-language – that **CP is an absolute barrier to government**. Consider the following configuration:

(23)



In (23) C (and XP (under certain conditions)) can govern into IP; but nothing from outside can govern into IP across CP. This principle is empirically well motivated in a number of cases (for some modifications, see Chomsky (1986a)). The next module we need to consider is case theory, which, as noted above, states that every lexical NP should occur in a case-marked position at S-structure. Case is always assigned under government. This is not the case in (21iii): *John* is ungoverned: *say* cannot govern and case-mark *John* because of the intervening CP. Finally, we need the subadjacency module. In general, this states that a constituent cannot move too far: it can cross only one **bounding node**. There is no general agreement on which nodes are bounding – this may be subject to parametric variation from language to language (cf. Chomsky (1986a) and below). As far as English is concerned, the bounding nodes seem to be NP and IP. If this is the case, we have an explanation for the grammaticality of (21iv): *John* has moved from the (caseless) subject-position of the embedded IP, crossing two nodes, one of which, CP, is not bounding. There remains one difficulty with respect to (21iv): an empty category (except PRO, which we will not consider in this paper) – in casu NP-trace should be governed. But how could the trace in (21iv) be governed? there is an intervening CP – a barrier to government. One possible solution would be to say that the passive participle *said* in (21iv) can neutralize the CP as a barrier to government,

unlike the finite verb *say* in (21iii). This may seem ad-hoc, but an explanation is surely called for (remember: we want to **explain**, not just **describe** things). The other examples are straightforward with respect to (22), with one caveat: in English passive participles, though governors, are not case-assigners; hence the NP-trace in (21ii) is governed (as it should be) and caseless (as it should be).

Next we turn to a different set of examples. Consider (24):<sup>4</sup>

- (24) (i) The suit [<sub>CP</sub> which<sub>i</sub> [<sub>IP</sub> I bought t<sub>i</sub>]] is too big for me  
 (ii) He knows [<sub>CP</sub> where<sub>j</sub> [<sub>IP</sub> I bought a suit t<sub>j</sub> [<sub>CP</sub> which<sub>i</sub> [<sub>IP</sub> t<sub>i</sub> was too big for me]]]]  
 (iii) \*The suit [<sub>CP</sub> which<sub>i</sub> [<sub>IP</sub> he knows [<sub>CP</sub> where<sub>j</sub> [<sub>IP</sub> I bought t<sub>j</sub> t<sub>j</sub>]]]] was too big for me

(24i) and (24ii) present no problems: a *wh*-word has crossed only one IP: there is no subjacency-violation. But (24iii) is ungrammatical: *where* is all right, but *which* is wrong: *which* has crossed two IPs – a subjacency-violation. Notice that *which* cannot move successive-cyclically, because the lower XP is already filled by *where*: it has to move at one swoop.

It was Ross (1967) who first discussed this type of example. It is clear that (24) is an experiment – a deliberate study of ungrammaticality with the sole purpose to unravel the truth about the structure of the I-language ((24iii) would never occur in a corpus). Ross explained (24iii) in terms of his so-called **Wh-Island Constraint**:

- (25) No *wh*-word can be moved out of a syntactic domain which itself contains a *wh*-word.

This is what has happened in (24iii): *which* has been moved out of a domain which contains *where*.

For a long time it was believed that (25) was universal. But this is not true. In fact, it does not even hold across the North Sea. Let us turn to the

<sup>4</sup> So far we have been concerned only with NP-movement. (24)–(33) all involve **Wh-movement** in relative and interrogative clauses. Basically, what this means is that a *wh*-word moves from the IP-domain to XP (cf. (1)), leaving a coindexed *wh*-trace. XP is a **non-argument position**. The chain created is a **non-argument chain**, an **A'-chain**. Case is assigned to the *wh*-trace and inherited upwards to the moved *wh*-word, as illustrated in (i) and (ii) (we ignore the phenomenon of inversion):

- (i) [<sub>CP</sub> [<sub>XP</sub>] [<sub>IP</sub> you saw *whom*]]  
 (ii) [<sub>CP</sub> [<sub>XP</sub> *whom*<sub>i</sub>] [<sub>IP</sub> did you see t<sub>i</sub>]]

Also an A'-chain has one and only one thematic role. In the text, the representations are much simplified, and only the S-structures are given.

following Danish examples:

- (26) (i) Habitten [<sub>CP</sub> som<sub>i</sub> [<sub>IP</sub> jeg købte t<sub>i</sub>]] er for stor til mig  
 (ii) Han ved [<sub>CP</sub> hvor<sub>j</sub> [<sub>IP</sub> jeg købte en habit t<sub>j</sub> [<sub>CP</sub> som<sub>i</sub> [<sub>IP</sub> t<sub>i</sub> var for stor til mig]]]]  
 (iii) Habitten [<sub>CP</sub> som<sub>i</sub> [<sub>IP</sub> han ved [<sub>CP</sub> hvor<sub>j</sub> [<sub>IP</sub> jeg købte t<sub>j</sub>]]]] var for stor til mig

(26iii) corresponds to (24iii). (26iii) is perfectly acceptable and must be generated by a grammar of Danish. ((26iii) is a clear instance of (6i)).

In the same way (27) and (28) are grammatical (where *om* = *whether*):

- (27) [<sub>CP</sub> Hvem<sub>i</sub> [<sub>IP</sub> undrede du dig over [<sub>CP</sub> om [<sub>IP</sub> Peter så t<sub>i</sub>]]]]  
 Who did you wonder whether Peter saw  
 (28) [<sub>CP</sub> Hvem<sub>i</sub> [<sub>IP</sub> undrede du dig over [<sub>CP</sub> om [<sub>IP</sub> t<sub>i</sub> så Peter]]]]  
 Who did you wonder whether saw Peter

Apparently, then, Danish allows long-distance movement in a class of environments that differs from English: subjacency seems to be subject to context-determined parametric variation.

That this may be the case is shown by another constraint – also formulated by Ross (1967) – **the Complex-NP-Constraint**. Originally this constraint said:

- (29) No element may be moved out of a sentence which is headed by a lexical NP.

Let us proceed to consider the following examples (cf. Jensen (1979)):

- (30) (i) \* [<sub>CP</sub> Which car<sub>i</sub> [<sub>IP</sub> did John meet [<sub>NP</sub> the boy [<sub>CP</sub> who<sub>j</sub> [<sub>IP</sub> t<sub>j</sub> smashed t<sub>i</sub>]]]]]]  
 (ii) \*The suspect [<sub>CP</sub> who<sub>j</sub> [<sub>IP</sub> the police doesn't believe [<sub>NP</sub> the theory [<sub>CP</sub> that [<sub>IP</sub> t<sub>j</sub> did it]]]]]]  
 (iii) \* [<sub>CP</sub> Hvilken ring<sub>i</sub> [<sub>IP</sub> bryder han sig ikke om [<sub>NP</sub> den tanke [<sub>CP</sub> at [<sub>IP</sub> han skal i t<sub>i</sub> først]]]]]]  
 (iv) \*Den ring [<sub>CP</sub> som<sub>i</sub> [<sub>IP</sub> Hans ikke bryder sig om [<sub>NP</sub> den tanke [<sub>CP</sub> at [<sub>IP</sub> han skal i t<sub>i</sub> først]]]]]] er en boksering

Notice that all the examples in (30) also involve Wh-movement (the Danish relative *som* is the wh-word). If we assume that a **combination** of IP and NP are bounding nodes in Danish (but not a combination of two IPs), the relevant constituents in the Danish examples (30iii) and (30iv) have crossed three bounding nodes: two IPs and an NP. In (26iii) two IPs have been crossed, but no NP. The same is true of (27) and (28). In other words, it might seem that in Danish subjacency-violations consistently involve a combination of an IP (S in the older theory) and an NP. Needless to say,

these conclusions are tentative, and more research is needed to substantiate this hypothesis (for discussion, see also Smith (1989)).

## 5. Degrees of grammaticality

I have talked about degrees of acceptability. I also hinted from the outset that there might be degrees of grammaticality.

Consider the following sentences (or rather NPs) adapted from Chomsky (1986b):

- (31) (i) \*The man [<sub>CP</sub> to whom<sub>i</sub> [<sub>IP</sub> I wonder [<sub>CP</sub> what<sub>j</sub> [<sub>IP</sub> he gave t<sub>j</sub> t<sub>i</sub>]]]]]  
 (ii) \*The man [<sub>CP</sub> whom<sub>i</sub> [<sub>IP</sub> I wonder [<sub>CP</sub> what<sub>j</sub> [<sub>IP</sub> he gave t<sub>j</sub> t<sub>i</sub>]]]]]  
 (iii) \*The man [<sub>CP</sub> to whom<sub>i</sub> [<sub>IP</sub> I wonder [<sub>CP</sub> what<sub>j</sub> [<sub>IP</sub> PRO to give t<sub>j</sub> t<sub>i</sub>]]]]]  
 (iv) \*The man [<sub>CP</sub> whom<sub>i</sub> [<sub>IP</sub> I wonder [<sub>CP</sub> what<sub>j</sub> [<sub>IP</sub> PRO to give t<sub>j</sub> to t<sub>i</sub>]]]]]

All the NPs are ungrammatical in that they display subadjacency-violations: two IPs have been crossed. Chomsky, however, argues that the four NPs show varying degrees of grammaticality (and consequently varying degrees of acceptability) and ascribes this to two different parameters:

- (32) (i) The finite/nonfinite parameter: extraction from a nonfinite clause is easier than extraction from a finite clause (this has always been the case).  
 (ii) A low-level S-structure filter: A VP can more easily contain an NP-trace plus a PP-trace than two NP-traces.<sup>5</sup>

This gives us the following pattern, where, in each case, one of the asterisks marks the subadjacency-violation:

- (33) (i) \*\*The man to whom<sub>i</sub> I wonder what<sub>j</sub> he gave t<sub>j</sub> t<sub>i</sub>  
 Extraction from a finite clause; t<sub>i</sub> is a PP-trace, t<sub>j</sub> is an NP-trace.  
 (ii) \*\*\*The man whom<sub>i</sub> I wonder what<sub>j</sub> he gave t<sub>j</sub> to t<sub>i</sub>  
 Extraction from a finite clause; both traces are NP-traces.  
 (iii) \*The man to whom<sub>i</sub> I wonder what<sub>j</sub> to give t<sub>j</sub> t<sub>i</sub>  
 Extraction from a nonfinite clause; t<sub>i</sub> is a PP-trace, t<sub>j</sub> is an NP-trace.  
 (iv) \*\*The man whom<sub>i</sub> I wonder what<sub>j</sub> to give t<sub>j</sub> to t<sub>i</sub>  
 Extraction from a nonfinite clause; both traces are NP-traces.

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<sup>5</sup> Strictly speaking, it is not an NP-trace; all the traces in (31) are wh-traces, which categorially either have NP-status or PP-status.

Given such patterns, it seems to me entirely natural to employ such symbols as (34):

- (34)      \*  
           \*\*  
           \*\*\*  
           ?  
           ??  
           ???

to indicate varying degrees of grammaticality and varying degrees of acceptability. But – in principle – asterisks (ungrammaticality) and question marks (unacceptability) should be kept apart.

In generative grammar it happens many times – as has already been shown – that it is the theory that decides with respect to (un)grammaticality. Let us turn to the following examples. They are instances of **Topicalization** (a constituent is fronted) and **Left Dislocation** (a constituent appears at the front and is linked to a pronoun). Ross (1967) considers such sentences as (35)-(38):<sup>6</sup>

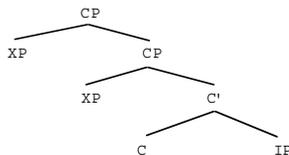
- (35) An A, you'll never get in this class  
 (36) My father, *he* was tight as a hoot owl  
 (37) I believe that an A you'll never get in this class  
 (38) I acknowledged that my father, *he* was tight as a hoot owl

Ross's theoretical framework forced him to accept all these sentences as grammatical. However, it is clear that (37) and (38) are less acceptable than (35) and (36): in (37) and (38) Topicalization and Left Dislocation have operated in embedded clauses.

Emonds (1976) draws a distinction between **root transformations** and **structure-preserving transformations**. Root transformations operate only on the top sentence in a complex sentence. Emonds argues that Top-

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<sup>6</sup> Topicalization and Left Dislocation can also be analysed in terms of (1). Specifically, Topicalization involves movement of a maximal projection to XP; by contrast a left dislocated constituent (for syntactic reasons that need not bother us here) is base-generated by **adjunction** to CP:



icalization and Left Dislocation are root transformations and would therefore characterize (37) and (38) as ungrammatical sentences. This prediction is borne out by (39)-(41) (from Emonds (1976)), which are clearly much worse than (37) and (38):

- (39) \*I told you that this movie, you wouldn't like *it* much
- (40) \*Bill hopes that John's sister, *she* won't do anything rash
- (41) \*They put so much furniture in here that this room, *it* really depresses me

(39)-(41) are all instances of Left Dislocation in embedded clauses.

It should be underscored that there was no data-dispute between Ross and Emonds. The structure of the theory was at issue, and only that. In my view Edmonds's analysis is correct.

## 6. The data-base of a generative grammar

It has frequently been said about transformational-generative grammar that it is mainly oriented towards English. Perhaps it used to be like that, but this is no longer the case. A large number of languages have now been thoroughly studied within the confines of the paradigm (Chinese, Japanese, Italian, Spanish, Dutch, French, German, Norwegian, Swedish, Icelandic, Yiddish, Danish, and many more). It is also a fact that more than 60% of MIT-dissertations are concerned with languages other than English (cf. Newmeyer (1983)). To a large extent it turns out to be the case that the fundamental principles are the same, which would indicate that the theory of universal grammar with a certain measure of parametric variability has not yet been falsified. Whether it is the correct theory we do not know of course, for the correctness of a theory cannot be proved.

A generative grammar is a deductive calculus – starting from an axiom – CP for example. The data-base derives almost exclusively from introspection. But this does not mean that inductively gleaned data are not respected or incorporated in the theory. Consider in this respect finally the following examples:

- (42) A man who likes beer is coming to dinner
- (43) I know a man who likes beer
- (44) I gave it to the man who likes beer
- (45) John is taller than the man who likes beer

These sentences show relative clauses modifying different types of heads: in (42) the subject, in (43) the direct object, in (44) the indirect object, and

in (45) the object of a comparative. We can now posit a hierarchy, the **Accessibility Hierarchy**, formulated by Keenan and Comrie (1977). It can be stated as in (46):

(46) Subject > direct object > indirect object > object of a comparative

(46) is known as an **implicational universal**. (46) builds on data collected from a large variety of languages. What (46) says is for example that if relativization is possible on the indirect object, it is also possible on the direct object and the subject. There are no languages in which relativization is possible on the indirect object, the subject, but not the direct object. There is at least one language, Malagasy, spoken in Madagascar, which only allows relativization on the subject, but on none of the other constituents; and so on.

How does the generativist handle such valuable insights? He asks: how can the child acquiring his native language know this? He cannot possibly have learnt it. The answer seems simple: the child knows (46) from birth – it is innate, genetically determined. This genetically transmitted linguistic knowledge should be incorporated in an explicit deductive theory. This might be effected within the confines of the theory of parametric variation. Consequently, we reformulate (46) as (47):

(47) Subject > direct object > indirect object > object of a comparative  
           1                  2                  3                  4

The theory of parametric variation says that universal grammar contains a small set of open parameters with strictly limited possibilities. The acquisition of a language presupposes that the value of these parameters be fixed – given input data. Thus one might postulate a **relativization parameter** and say for example that – for a given language – the value is fixed at 2. It follows automatically that relativization on the indirect object and the object of a comparative is ungrammatical, whereas relativization on the direct object and the subject is grammatical. In this way an inductively formulated implicational universal has been incorporated into an explicitly formulated deductive theory (cf. also Smith (1989)).

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