

## UNDERSTANDING THE MODELS OF GRAMMAR

By

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### ABSTRACT

*This article provides comprehensive explanation about several models of grammar. The first model of grammar which is explained is considered from the functional grammar and associated with the American linguist Noam Chomsky that is Transformational Grammar. This model of grammar is consisted of three components they are phrase structure rule, the lexicon, and transformation. The second model of grammar which is explained in this article is Minimalist Grammar. This article also compares her understanding in two models of grammar they are Transformational Grammar and Minimalist Grammar.*

*Key word:* Grammar, transformation, minimalist

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### Introduction

There are many different models of the grammar of standard English, and it is not possible to say that one is 'right' and another is 'wrong'. Furthermore, there is a great variety in the use of terminology in different books on grammar, and again it is not possible to state that one usage is necessarily better than another.

While it is possible to provide a fairly comprehensive description of the grammatical structure of English (even if other linguist might prefer alternative analysis), there are inevitably a number of unresolved issues that cannot easily to be covered, and it is important for English teacher to be aware of the limits of their knowledge, and

to recognize that there are weaknesses in any kind of analysis.

Considering functional grammar which seeks to explain how sentences are linked together and how a text achieves coherence. This model of grammar is associated with the American linguist Noam Chomsky.

The models of this grammar are often termed transformational grammar (TG), it will be loosely based on the early model proposed by Chomsky, originally in Chomsky (1957) and then with some modifications in Chomsky (1965).

According Deterding (2001), much of that original model has subsequently been abandoned, and the current version, known as grammar and

outlined in Chomsky (1995). There is something one which can be the most important and controversial claims of Chomsky, that the language faculty is innate.

It might seem strange to discuss a model of grammar that has now largely been abandoned. However, the writer believes that it is worth introducing this model for two reasons: first, it has had immense influence on the study of language over the past 40 years; and second, it can still provide many valuable insight into the structure of language.

On the other side, minimalist grammar tries to provide a framework to explain the structure of all human languages. It assumes that this structure is hard-wired in the brain, and all humans are born with it (deterding 173, 2001).

If the structure of language is innate, then all languages are essentially similar, and studying any language can provide evidence about the structure. It is therefore important to extend the scope of the investigation beyond English. Consideration of how English varies from other languages such as Chinese and Malay, can provide valuable insights into the structure of Universal Grammar.

## Content

### Transformational Grammar

Transformational Grammar (TG) proposed by Chomsky, originally in Chomsky

(1957) and then with some modifications in Chomsky (1965).

### The Components of Transformational Grammar

Transformational Grammar (TG) consists of three main components:

- a. Phrase structure rules
- b. The lexicon
- c. Transformation

#### Phrase Structure Rules

PHRASE STRUCTURE RULES are a formal way of stating what a constituent consists of. For example:

- A prepositional phrase (PP) consists of a preposition (P) followed by a noun phrase (NP), such as *George is in the garden*. The phrase structure rule for PP would be:

$$PP \rightarrow P NP$$

- A noun phrase (NP) consists of an optional Det followed by an obligatory noun (N), such as *the hamburger* has a determiner before the noun, while other noun phrases, such as *David*, usually occur without a determiner, we can use the following rule:

$$NP \rightarrow (Det) N$$

- A verb phrase (VP) must have an obligatory verb, which may be followed by zero, one, or two noun phrases (representing intransitive, monotransitive, and ditransitive verbs respectively).

Furthermore, a verb phrase (VP) can have an optional adverb (Adv) and also one or more optional prepositional phrases (PP) at the end. The rule for a verb phrase is therefore:

**VP** → **V (NP) (NP) (Adv) (PP)\***

A verb phrase that includes all these components is *gave the boy a kick angrily in the playground on Monday*.

Finally, we need to state that a sentence consists of a noun phrase followed by a verb phrase:

**S** → **NP VP**

We can collect all these phrase structure rules together to form a mini grammar of English. This simple grammar is:

**S** → **NP VP**

**VP** → **V (NP) (NP) (Adv) (PP)\***

**NP** → **(Det) (Adj)\* N (PP)**

**PP** → **P NP**

The following sentences are regarded as ungrammatical:

1. That teacher strange likes smelly cheese.
2. That strange likes smelly cheese.
3. The that strange teacher likes smelly cheese.

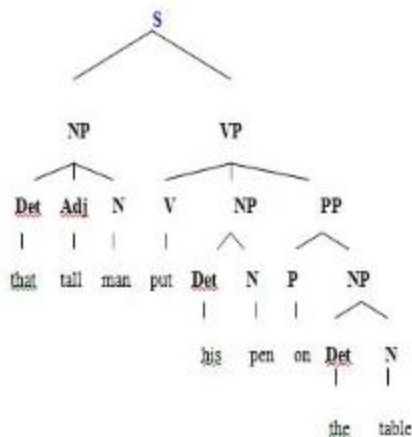
• **Trees**

In TG, the structure of sentences using inverted TREES, because the root of the tree, S,

is at the top. It might be more accurate to describe them as root systems.

The trees must be consistent with the phrase structure rules; so wherever a node branches into further components, this must fit in with the phrase structure rule for that node.

For example: **That tall man put his pen on the table**



**The lexicon**

To allow the fully automatic of sentences using our simple grammar, we have to state which words are nouns, which are verbs, and so on. This is done in the LEXICON. The basic role of the lexicon is to provide a list of words and indicate the word class of each. For example, if the lexicon list *David* and *cheese* as nouns, *smelly* as an adjective, *the* as a determiner, and *ate* as a verb.

To state the mechanism of the lexicon list in TG by means of a LEXICAL SUBCATEGORISATION FRAME, which

specifies the environment under which a particular word can exist.

- The lexical subcategorisation frame for a monotransitive verb such as *love* is:  
love : V, \_\_\_\_\_ NP
- The lexical subcategorisation frame for an intransitive verb such as *shout* is:  
shout : V, \_\_\_\_\_ .
- The lexical subcategorisation frame for *ate*, which can be either intransitive or monotransitive, includes brackets to show that the following noun phrase is optional:  
eat : V, \_\_\_\_\_ (NP)
- The lexical subcategorisation frame for a ditransitive verb such as *give* is:  
Love : V, \_\_\_\_\_ NP (NP)

### Transformation

A TRANSFORMATION is a device for changing one sentence into another sentence without changing the meaning. For example,

[a] The spider ate the fly quickly.

[b] The spider quickly ate the fly.

In fact, if two sentences have the same meaning, it is often assumed that they should be related by a transformation. We will call the transformation that changes [a] into [b] ADVERB FRONTING.

Transformations have a formal specification.

- A STRUCTURAL DESCRIPTION (SD), which determines whether a sentence is suitable to undergo the transformation.
- A STRUCTURAL CHANGE (SC), which states the form of the sentence after it undergoes the transformation.

A simple specification of adverb fronting, the transformation that changes [a] into [b], is:

Adverb fronting:	SD:	NP	V	X	Adv
		1	2	3	4
	SC:	1	4	2	3

As another example of a transformation, let us consider [c] and [d] which have roughly the same meaning.

[c] David gave Ellen red roses.

[d] David gave red roses to Ellen.

As these two sentences have the same meaning, they should be related by a transformation. Let us call it INDIRECT OBJECT POSTPONEMENT.

Indirect object postponement:	SD:	X	V	NP	NP	Y
		1	2	3	4	5
	SC:	1	2	4	to 3	5

Let us consider the PASSIVE transformation, which changes an active sentence like [e] into its passive counterpart [f]

[e] Rosana ate the durian.

[f] The durian was eaten by Rosana.

Passive:	SD:	NP	V	NP	X
		1	2	3	4
	SC:	3	be	2-en	by 1

a man; or Mary saw someone who had just stolen her binoculars.

These are two different trees for an ambiguous sentence:

**Deep and surface structure**

- DEEP STRUCTURE is the output of phrase structure rules, before any transformations have applied. As transformations do not change meaning. The meaning of a sentence is determined by its deep structure
- SURFACE STRUCTURE is after all transformations have applied. This is the form that is actually spoken (or written).

**Synonymy and ambiguity**

- SYNONYMOUS is two sentences that have the same deep structure but different surface structure. For example,

[g] Simon yesterday sent his mother a card.

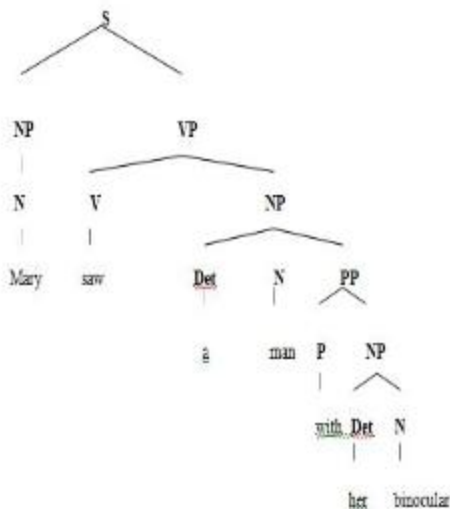
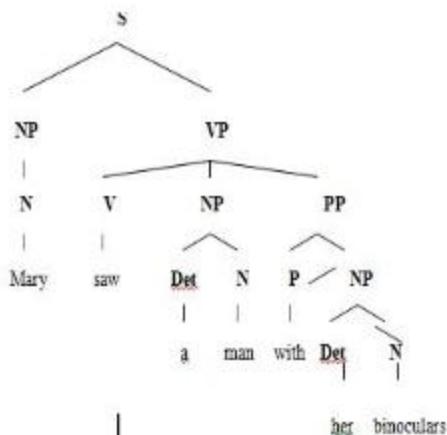
[h] Simon sent a card to his mother yesterday.

[g] and [h] are synonymous as they share the same deep structure, though [g] has undergone adverb fronting while [h] has undergone indirect object postponement.

- AMBIGUOUS is one sentence can have two different deep structures. For example,

[i] Mary saw a man with her binoculars.

There are two possible interpretation of [i]: either Mary used her binoculars to see



## MINIMALIST GRAMMAR

Minimalist Grammar is a more recent model from Chomsky (1995). Many of the ideas presented in this chapter are derived from Radford (1997).

Minimalist Grammar tries to provide a framework to explain the structure of all human languages. All languages are essentially similar, and studying any language can provide evidence about the structure. It is therefore important to extend the scope of the investigation beyond English. Consideration of how English differs from other languages, such as Chinese and Malay, can provide valuable insights into the structure of Universal Grammar.

### Principle and Parameters

The central ideas of Minimalist Grammar are: **PRINCIPLES**, which are structural constraints that are fixed in all human languages. These are innate, so infants do not need to determine them from the linguistic data they hear. This simplifies the language acquisition process immensely. **PARAMETERS**, which describe much of the variation between languages. These differ from language to language, so infants just need to determine which setting their own language has for each parameter, and this helps explain how infants are able to master their native tongue quickly and efficiently.

In order to gain an understanding of these concepts, we will consider first one principle:

- The structure dependence principle,

And then tree parameters:

- The null subject parameters,
- The wh parameter,
- The head parameter.

### The structure dependence principle

The **STRUCTURE DEPENDENCE PRINCIPLE** states that all grammatical operation (such as movement) must take account of the structure of the sentence. For example, **Yes-No interrogatives in English**:

[1] John is singing

[2] Is John singing?

We convert [1] a declarative into [2] an interrogative by moving the auxiliary to the front.

The structure dependence principle does not apply to English, but to all languages. Such as, we consider movement in Malay. It uses an operation called topicalisation: a constituent can be moved to the front of the sentence to become the topic of the sentence. For example:

[3] Anjing galak itu dipukul oleh Pak Kerta dengan tongkat kayu

dog fierce that be beaten by  
Mr. Kerta with stick wooden

‘That fierce dog was beaten by  
Mr. Kerta with a wooden stick’

Malay can use topicalisation to move various constituents to initial position in a sentence. Thus [4] and [5] are both possible:

[4] Dengan tongkat kayu, anjing galak itu dipukul oleh Pak Kerta

with stick wooden, dog fierce that be beaten by Mr. Kerta.

[5] Oleh Pak Kerta, anjing galak itu dipukul dengan tongkat kayu.

by Mr. Kerta dog fierce that be beaten by stick wooden.

Topicalisation in Malay must refer to the structure of the sentence, so it is not possible just to move anything to the front.

[6] \* Tongkat kayu anjing galak itu dipukul oleh Pak Kerta dengan.

stick wooden dog fierce that be beaten by Mr. Kerta with.

[7] \* Pak Kerta anjing galak itu dipukul dengan tongkat kayu oleh.

Mr. Kerta dog fierce that be beaten with stick wooden by.

Dengan tongkat kayu is a prepositional phrase (indicating an instrument) and so is oleh Pak Kerta. (The latter phrase indicates the agent of the passive.). Separating the NP from the preposition which acts as the head of the PP results in an ungrammatical sentence.

### The null subject parameter

The NULL SUBJECT PARAMETER specifies whether finite clauses must have a

subject or not. English is not null-subject language, so [8] is not a grammatical sentence.

[8] \*Remember, when small, often went fishing.

In contrast, Malay is a null-subject language, so there is no need to state the subject if it can be determined from context. Sentence [9] is perfectly grammatical:

[9] Ingat-ingat, waktu masih kecil, sering pergi mancing.

remember when still small, often go fishing.

\* I remember, when I was still small, I often went fishing.'

(The pronoun saya 'I' could be added, but in Malay it is not obligatory)

The requirement for an English finite clause to have a subject means that, if there is no obvious subject, a dummy subject **it** must be used. In Malay, however, there is no requirement. Thus the English sentence [10] has it, but the Malay equivalent [11] have no subject.

[10] It is raining.

[11] Hujan

rain

'It is raining'

In summary, the two possible settings of the null subject parameter are:

- non-null-subject ( exemplified by English)
- null-subject (exemplified by Malay)

### The WH parameter

The WH PARAMETER specifies whether a question word gets moved to the front in WH-interrogatives.

To create a WH-interrogative in English, the question word needs to be moved to the front (and the subject and first auxiliary inverted), such as in [12]:

[12] What did you say?

In contrast, in Malay questions, the question word does not occur at the start but remains in place ('in-situ'), for example:

[13] Kamu berkata apa?

You say what

What did you say?

We can therefore describe English as a WH-movement language while Malay is a WH-in-situ language.

### The head parameter

The HEAD PARAMETER determines where in a phrase the head occurs. In English, the head of phrase tends to come at the start of the phrase, for example:

[14] books on the table

The head is *books*, which is start; and in the phrase.

In English, determiners and adjectives normally precede the head noun while in Malay, these follow the head noun in the phrase.

[15] buku biru yang diatas meja itu.

Book blue which at top table that

All modifiers-adjectives, prepositional phrases and the determiner follow the head noun.

Similarly, in English a prepositional phrase follows an adjective as in [16]:

[16] angry with my mother.

But if we add intensifier, a single short word, it precedes the adjective as in [17]:

[17] very angry with my mother.

In Malay, however, all of the modifiers follow the head:

[18] marah sekali dengan ibu saya.

angry very with mother my

In summary, English and Malay are the head-first language.

### Determiner Phrases

We have known that the head of a noun phrase such as *the book* is *book*, which occurs at the end of the phrase not the beginning. In this section, *the book* is not a noun phrase at all, but a DETERMINER PHRASE, which the head of phrase is indeed at the front.

There are some reasons for analysing the determiner as the head of the phrase. We can notice the sentence [19], *this* cannot omitted but *book* can be,

[19] I like this book

If *this* is obligatory but *book* is optional, maybe there are some grounds for regarding *this* as the head of phrase.



### Binary feature

One of the characteristics of the parameter settings is the assumption that there are exactly two possible settings for each parameter.

These are examples of BINARITY, a feature which characterizes much of Minimalist Grammar. It is possible that all linguistic characteristics can be described in terms of binary features.

Binary features are found:

- In phonology, so that consonants are either [+ voiced] or [- voiced] and vowels can be described as either [+ rounded] or [- rounded].
- In semantics:
  - uncle is [- female] [- parent].
  - aunt is [+ female] [- parent].
  - mother [+ female] [- parent]
- In the same way, it is possible to describe grammatical characteristics of words in terms of binary features, for example:
  - dogs is [+ plural]
  - dog is [- plural]
  - coin is [+ count] (because you can say *two coins*)
  - money is [- count] ( because you cannot say *\*two moneys*)

The four possible combinations of these two features are illustrated in Table 1.

Example	Plural	Count
Chair	-	+
chairs	+	+
furniture	-	-
scissors	+	-

Table 1. Illustrations of some of the binary features for nouns

- In classification of personal pronouns:
  - *we* and *they* are [+ plural]
  - *I* and *he* are [- plural]
  - *me* and *him* are [+ objective] (because they tend to occur as the object of a verb)
  - *I* and *he* are [- objective] (because they are usually the subject)
  - *I* is [+ speaker] [- listener]
  - *you* is [- speaker] [+ listener]
  - *he* is [- speaker] [- listener]

The binary classification of some of the personal pronouns of English is shown in Table 2.

Pronoun	Speaker	Listener	Plural	Objective
<i>I</i>	+	-	-	-
<i>you</i>	-	+	-	-
<i>live</i>	-	-	-	+
<i>we</i>	+	-	+	-
<i>those</i>	-	-	+	-

Table 2. Classification of pronouns in terms of binary features

In Table 2. some cells are left empty (i.e. the feature is not specified). For example, you can

be either singular or plural, so the plural column is left empty. You might note that the whole meaning of I is captured in terms of its feature specification: [+ speaker] [- listener] [- plural] [- objective].

For a complete classification of all the personal pronouns, we would need a few more features. For example:

- [+ female] is needed to differentiate *she* from *he*
- [- animate] is needed to describe *it*
- [+ possessive] is needed to handle possessive pronouns, such as *my*, *your*, and *his*, and nouns in possessive form, such as the *boy's* and *Mary's*.

## CONCLUSION

While it is possible to provide a fairly comprehensive description of the grammatical structure of English (even if other linguists might prefer alternative analysis), there are inevitably a number of unresolved issues that cannot easily be covered, and it is important for English teacher to be aware of the limits of their knowledge, and to recognize that there are weaknesses in any kind of analysis.

Based on the explanations, it can be concluded that

1. Synonymous sentences have one deep structure but two surface structures.

2. An ambiguous sentence has two deep structures but one surface structure.
- 3.

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