

## **MODULE 2      ECONOMY PRINCIPLES IN THE MINIMALIST FRAMEWORK**

Unit 1	Shortest Move
Unit 2	Greed and Procrastinate
Unit 3	Last Resort
Unit 4	Least Effort

This module is specially written to revisit the minimalist economy principles discussed in Module 4, Unit 4 of ENG 202 (Advanced English Syntax). We have a goal of retelling the same story in a language you can easily understand. At this time, we feel that you need to really understand the way the Program works rather than the terms.

### **UNIT1      SHORTEST MOVE**

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#### **1.0      INTRODUCTION**

In the introduction to minimalism in ENG 202, some economy principles of the Minimalist framework were mentioned. These are Shortest Move, Greed, Procrastinate, Last Resort and Least Effort. We are going to consider the first one in this unit.

#### **2.0      OBJECTIVES**

At the end of this unit, you should be able to:

- identify the economy principle and how it works; and
- state how to apply it in syntactic analysis.

## HOW TO STUDY THE UNIT

- a. Read this unit as diligently as possible.
- b. Find meaning of unfamiliar words in the unit using your dictionary.
- c. As you read, put major points down in a piece of paper or jotter.
- d. Do not go to the next section until you have fully understood the section you are reading now.
- e. Do all the Self-Assessment exercises in the unit as honestly as you can. In some areas where it is not feasible to provide answers to Self-Assessment exercises, go to the relevant sections of the unit to derive the answers.

### 3.0 MAIN CONTENT

#### 3.1 What is Shortest Move?

In the Government and Binding Theory, there is a movement rule that is known as *Subjacency Condition*. This rule helps to constrain the power of the *move-alpha* rule in order to prevent it from generating ungrammatical forms. Both the *move-alpha* and the *Subjacency condition* regulating it have been replaced in MP with *Operation Move*. Shortest Move economy principle is therefore the means through which the moved item regulates how far it can be moved. In this case, the movement is licensed by the moved item itself rather than being licensed by an external operation like the *Move-alpha*. The minimalism concept here is that the distance covered by syntactic objects in movement should be minimised.

Here we can revisit the concept of economy of derivation discussed above. The convention is that short steps are more economical than long ones. The idea of minimality is strongly upheld by scholars such as Zwart.

Economy of derivation

In deriving a representation, make the shortest possible movements (Zwart, 1996:12).

Minimality:

In a derivation, don't move across a place where you could have landed (Zwart, 1996:12).

### 3.2 How does it Operate?

Each object being moved has within it the features that match it with the nearest suitable destination. The item will only land in the nearest suitable destination without any need for external checks such as are provided by the subjacency condition.

Consider this following.

1. What did you call what they killed?

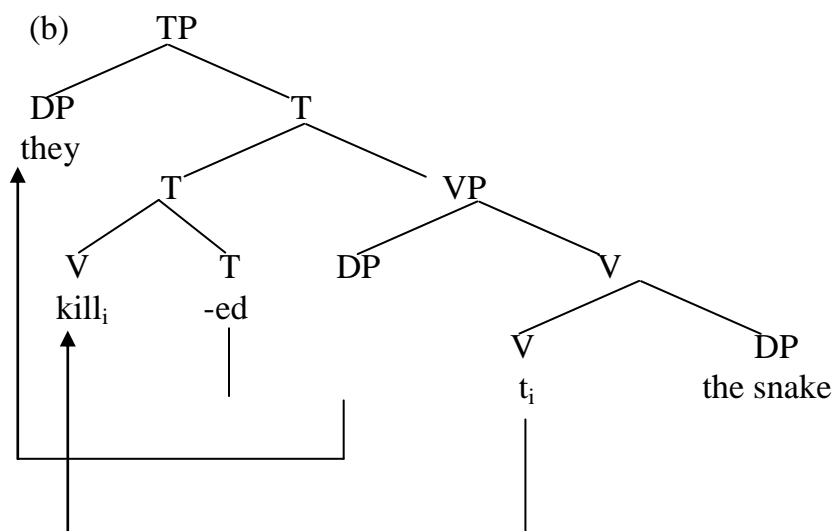
In this expression, we have two *wh*-words. Both have the same form: *what*. These *wh* words represent the same semantic object *a snake*. However, the first *what* refers to *cobra* the name of the snake, while the second *what* refers to the same snake but as the creature that was killed. Logically, it is expected we should assume that the embedded clause has been formed before it is merged with the matrix clause, this will inform the decision of putting the index *a* on *snake* (to become *snake<sub>a</sub>*) being part of the embedded clause while we put the index *b* on *cobra* in the matrix clause (to get *cobra<sub>b</sub>*). Therefore the first *what* that is semantically representing *cobra* will be co-indexed with *cobra* hence becoming (*what<sub>b</sub>*), while the *what* representing *snake* will also be co-indexed with *snake* to become (*what<sub>a</sub>*) Then we are going to have (2) below.

2. What<sub>b</sub> did you call what<sub>a</sub> they killed?

If you study this structure more carefully, you will discover that the *wh*-words are formed at different times. The first to be formed is *what<sub>2</sub>*. You can see this as it appears below.

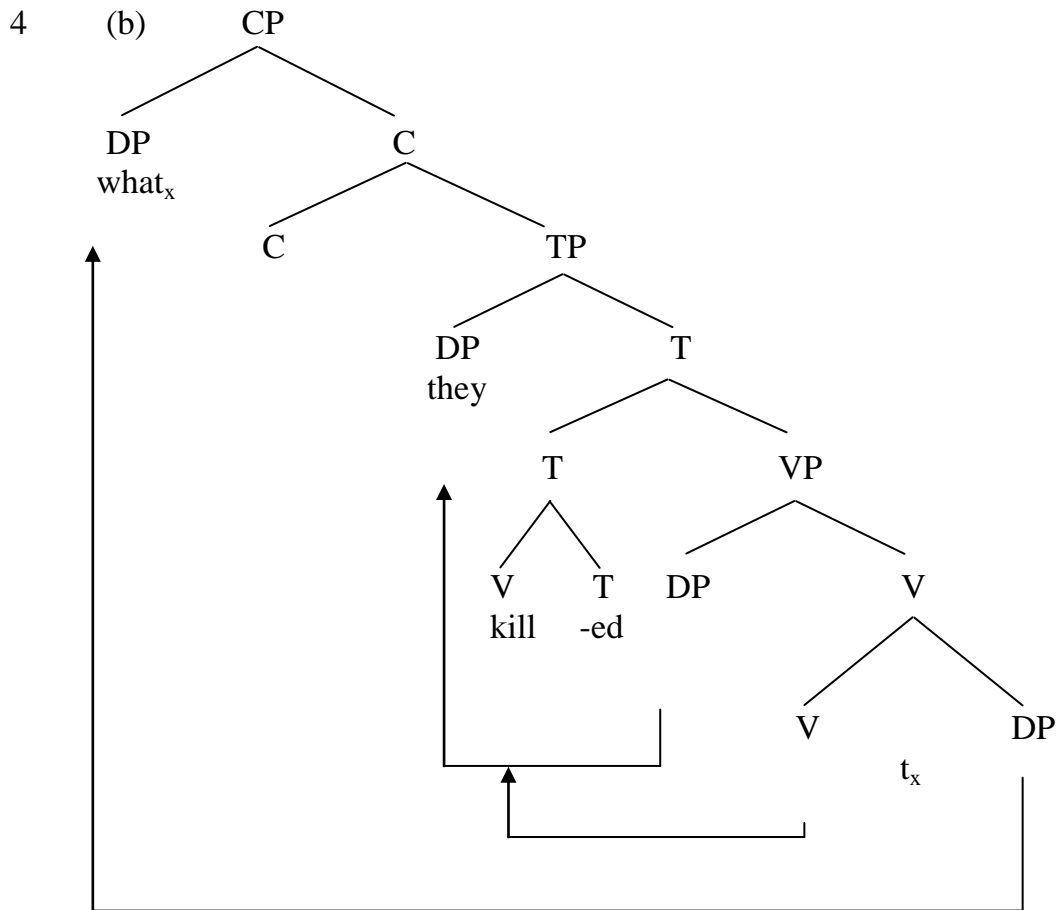
We should assume the initial statement to be as follows:

- 3 (a) They killed the snake.



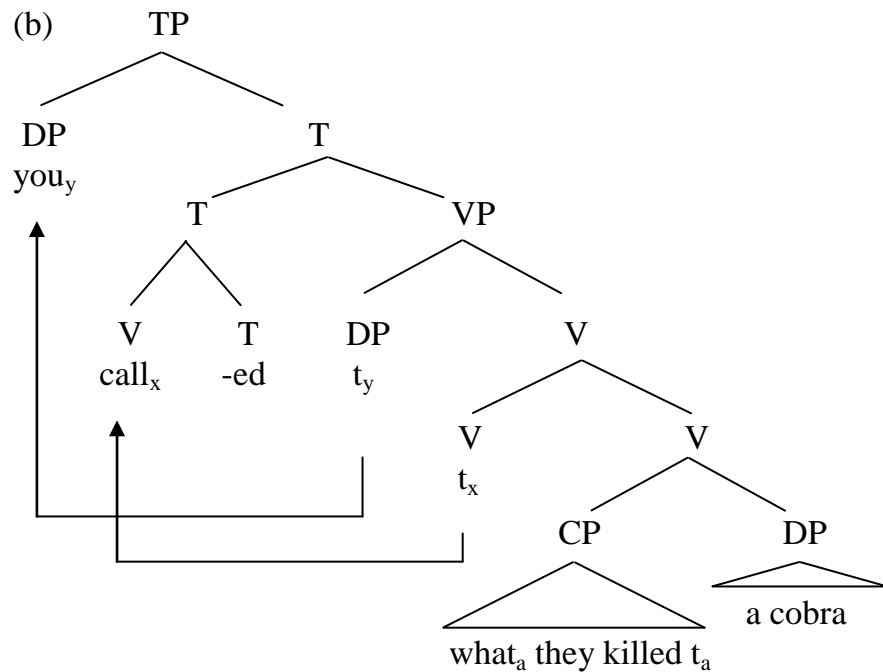
By moving the object (*the snake*) to a wh- position, we are going to have:

4 (a) what<sub>2</sub> they killed x<sub>2</sub>



By making the entire wh-clause an object of the di-transitive verb (*call*), the derivation becomes this:

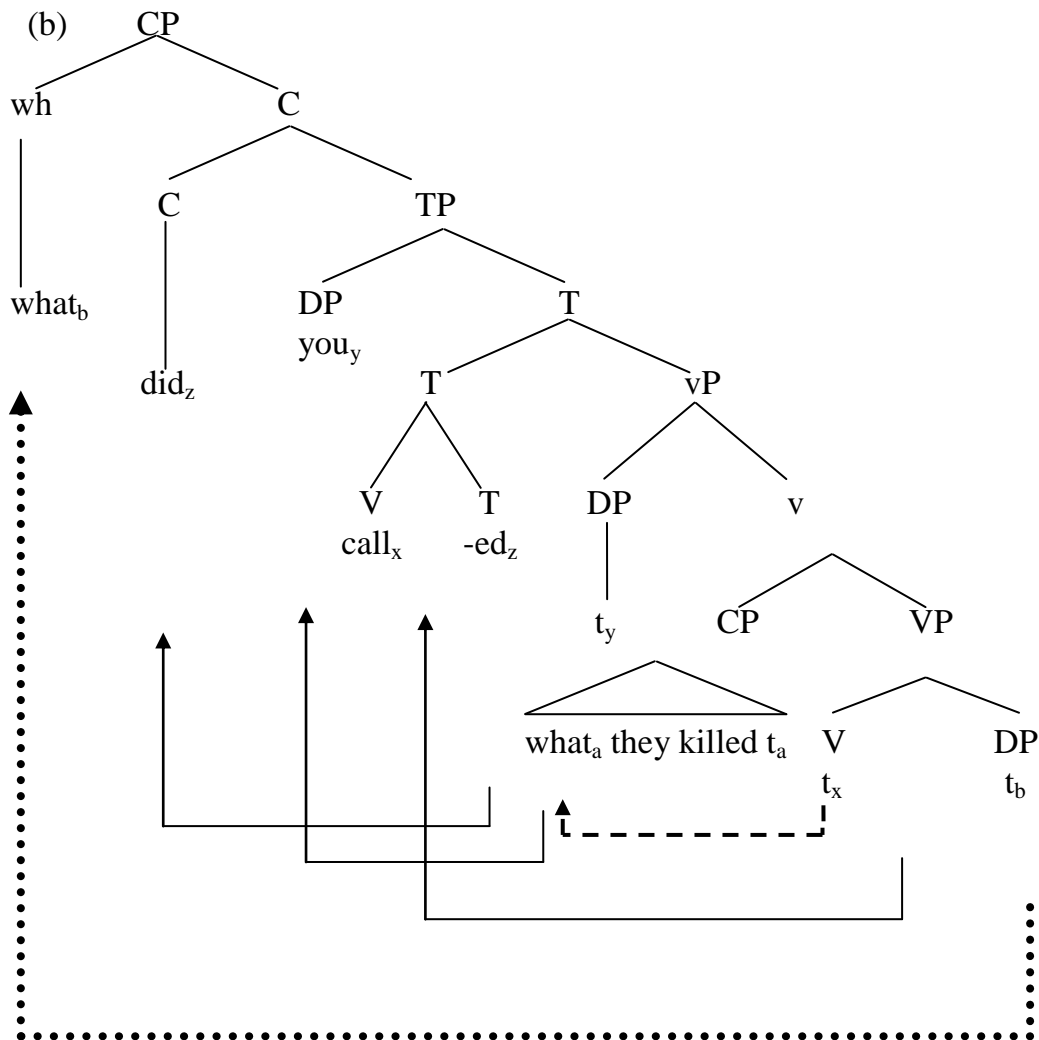
5 (a) You call [what they killed] a cobra



Do not mind the complexity of the tree diagram above. In the tree diagram above, we have two objects in the sentence: the direct object (the NP: *a cobra*) and the indirect object (the CP: *what they kill* which is a noun clause). Due to this complex VP structure, we develop a functional verbal structure having a *v* head written in lower case. This kind of verb is called a light verb. It is used in ditransitive constructions where a single verb will have two objects.

Moving *cobra* the object of *call* to a *wh*-position, it becomes *what* as shown below. Note that the *wh* movement paths are marked here with heavy rounded dashes. Now we have two *wh* positions. But the wonderful thing to know here is that these positions are not confused with each other due to the shortest move principle. The *wh* element in the embedded clause (*what they killed*) has its shortest move location within that clause; therefore, it cannot proceed to the matrix clause. Below, we tagged the *wh* position in the matrix clause <sub>b</sub> while we tagged the one in the embedded clause<sub>a</sub>.

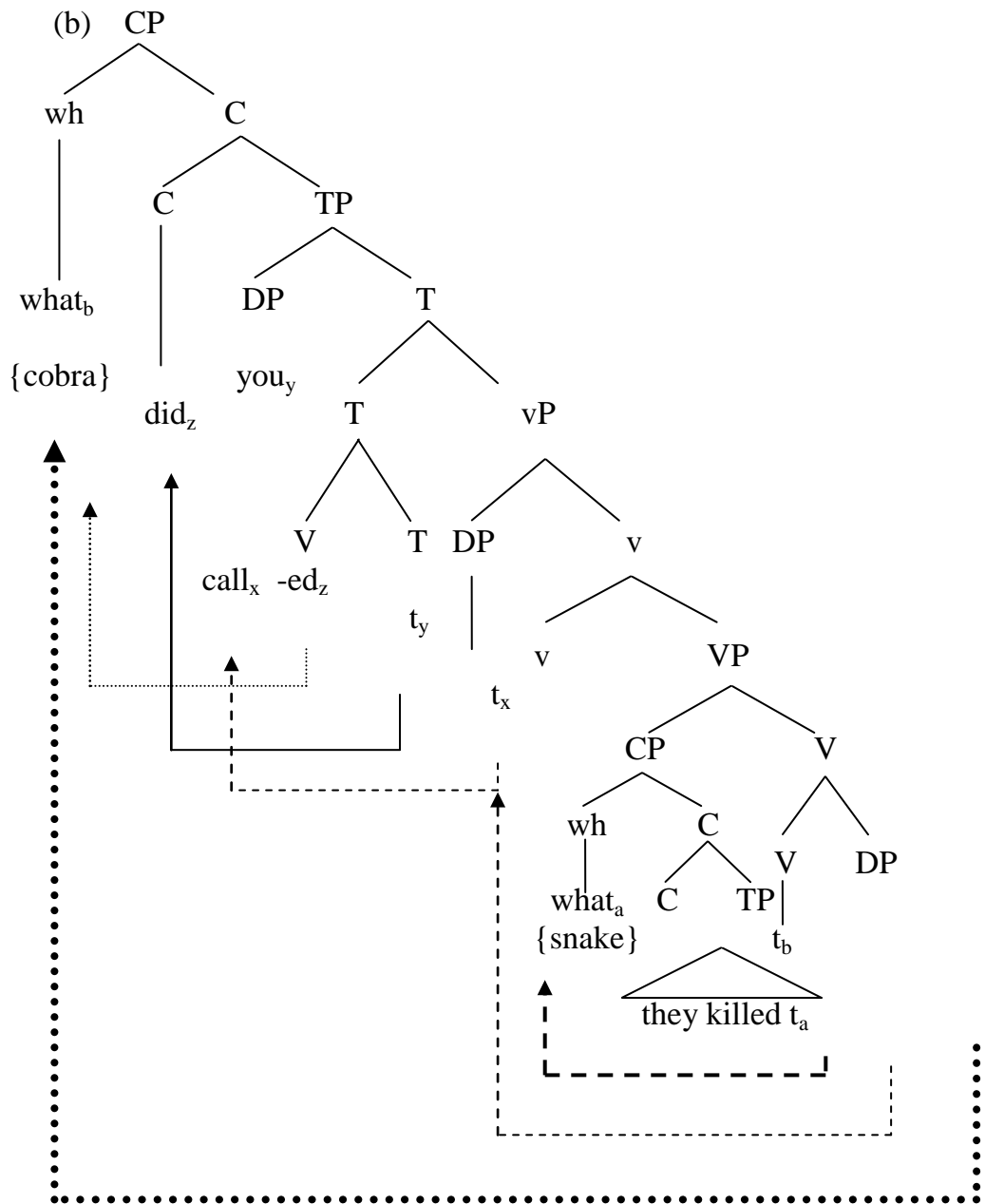
6 (a) What<sub>b</sub> did you call what<sub>a</sub> they killed?



### 3.3 Why do we consider it an economy principle?

The two instances of *what* are copied from different locations having different features. *What<sub>a</sub>* is representing the object of *kill*; it therefore carries a bundle of features that still represent its earlier agreement with the features of *kill*. These features remain in it while it is moved. It cannot be copied into a position meant for *what<sub>b</sub>*, which represents the object of *call*. Therefore, it still has all its features with which it displays its agreement with the verb. We reproduce the structure below. Note that we have included the semantic representation of the moved items enclosed in braces { }; while the first *what* is decoded as *cobra* the second one is decoded as *snake*.

7 (a) What<sub>b</sub> did you call what<sub>a</sub> they killed?



Try and trace out the movement of the two *wh* words in the tree diagram above. Take note of the following conventions.

- i) .....> round dashes tense movement
- ii) -----> flat dashes verb movement
- iii) —————> unbroken line DP (noun) movement
- iv) - - - - -> heavy flat dashes wh movement
- v) .....> heavy round dashes wh movement

Although, it was the same snake that was also called a cobra, the truth is that the morphosyntactic features of *snake* as an object of *kill* differ from the morphosyntactic features of *cobra* as an object of *call*. So each of

these *wh* words carries the features with which it initially agrees with the verb in its initial phase of derivation. While being moved, the moved item cannot skip the nearest *wh* slot that matches its morphosyntactic features.

### **SELF-ASSESSMENT EXERCISE**

- i. With your pencil, trace the paths of each of the movements in the tree diagram in (7b) above, and distinguish them from one another.
- ii. How does Shortest move help simplify movement rule? Discuss this with your colleagues.

### **4.0 CONCLUSION**

In this unit, we have discussed the shortest move economy principle. This principle is replacing the Subjacency Principle of the Government and Binding theory.

### **5.0 SUMMARY**

In this unit, we have seen the following important issues:

Shortest move prefers a shorter movement to a longer one. The items moved carries along its features which help determine a suitable landing site. A suitable landing site should not be skipped during movement.

### **6.0 TUTOR-MARKED ASSIGNMENT**

Use the Shortest Move Principle to explain the movement operations in the following expressions.

1. How do you describe how he did it?
2. When did he say what you told him?
3. What he said was what I heard.

### **7.0 REFERENCES/FURTHER READING**

Chomsky, Noam (1991). "Some Notes on Economy of Derivation and Representation", in Freidin, Robert (Ed.). *Principles and Parameters in Comparative Grammar*. Cambridge, Mass: MIT Press [also published as chapter 2 of Chomsky 1995].

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## **UNIT 2 GREED AND PROCRASTINATE**

### **CONTENTS**

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- 2.0 Objectives
- 3.0 Main Content
  - 3.1 Greed
  - 3.2 Procrastinate
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- 7.0 References/Further Reading

### **1.0 INTRODUCTION**

In this unit, we are going to discuss two among the economy principles. These are greed and procrastinate principles. Greed principle actually shows that items that are moved have within them some features that inform such movement operations. On the other hand, procrastinate justifies the reasons for a delay in syntactic movement.

### **2.0 OBJECTIVES**

At the end of this unit, you should be able to:

- identify the application of greed and procrastinate as economy principles; and
- state how to apply these principles in your syntactic analysis.

### **HOW TO STUDY THE UNIT**

- a. Read this unit as diligently as possible.
- b. Find meaning of unfamiliar words in the unit using your dictionary.
- c. As you read, put major points down in a piece of paper or jotter.
- d. Do not go to the next section until you have fully understood the section you are reading now.
- e. Do all the Self-Assessment exercises in the unit as honestly as you can. In some areas where it is not feasible to provide answers to Self-Assessment exercises, go to the relevant sections of the unit to derive the answers.

### 3.0 MAIN CONTENT

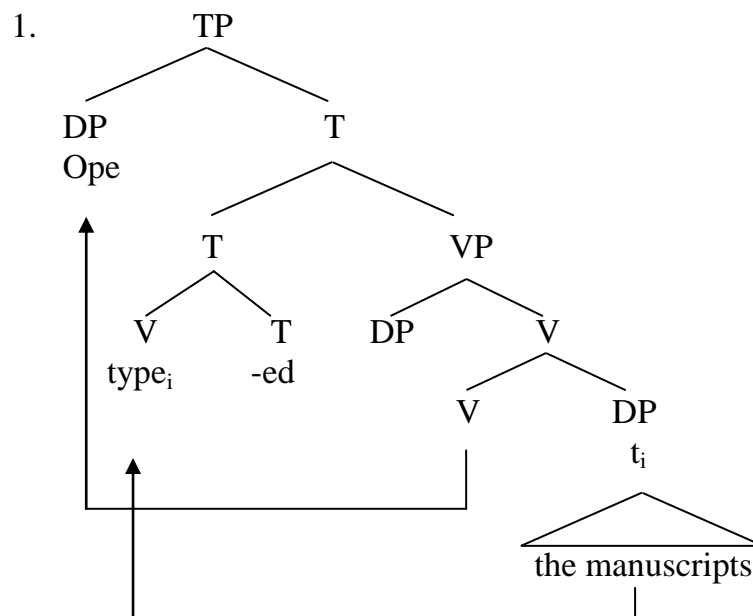
#### 3.1 Greed

You should have read that Greed requires that an element will not move unless it wants to check its own feature. This principle provides evidence for the reason for syntactic movement. We are going to evaluate this with language data and see how it works. Let's first consider the principle as follows.

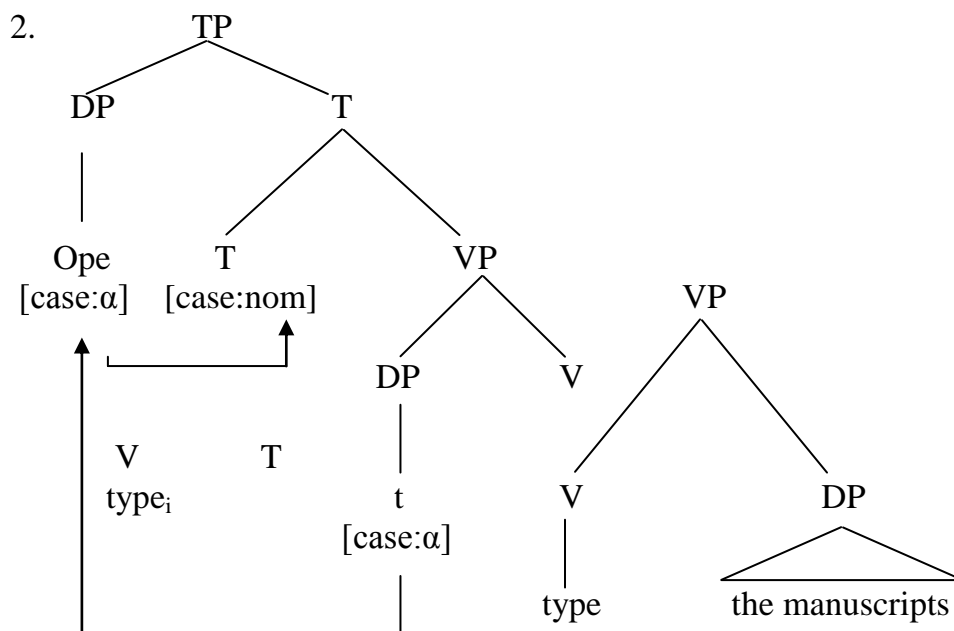
#### **Greed:**

Move only to contribute to personal licensing  
(Zwart, 1996:2)

An item will not move unless it has uninterpreted features that can be interpreted in the landing position where it moves to. The diagram below illustrates this sentence: *Ope typed the manuscripts*. The movement of the verb *type* from V to T is due to greed. This means that the verb moves by itself in order to satisfy its own un-interpretable tense feature and lands at T where tense feature is interpretable. We assume that the verb could not have changed its form from *type* to *typed* if it remains at V.



*Ope* also moves from the subject position of the VP and lands at the Specifier position of the TP. This happens because the subject has an uninterpretable case feature. It is believed that the T can interpret nominative case. For the nominative case of the subject to be interpreted, this subject has to be copied to merge with T where nominative case is believed to be interpretable.



### 3.2 Procrastinate

This is an economy principle that ensures that, during computation, any element that can wait should wait. This simply means that syntactic operations especially movement operations can be delayed only to occur later in the derivation. Consider the following expressions.

3. What is your name?
4. Your name is what?

Both 3 and 4 above are questions, but they differ in derivation. The first one has succeeded in moving the *wh* operator to the sentence-initial position before the phonetic realisation is reached. On the other hand, the second question delayed the movement of the *wh* operator from being moved to the sentence-initial position until after the pronunciation stage is reached. Even if the inversion actually took place as expected, it occurred covertly. So it does not have phonetic evidence of the movement.

After same meaning, it can be deduced that the question that does not involve overt movement actually permits the movement later after the structure has been removed from the PF (the pronunciation stage). This movement could not meet up with the PF realisation because it was delayed. This is a case of procrastinate as found in this model. As we can see here, the procrastination has saved us the effort of moving the *wh*- operator in the PF (the pronunciation). It is therefore more economical than the situation where there is no delay in movement.

Procrastinate may yield ungrammatical structures as the case when pronoun function as object of some phrasal verbs such as *cut off*, *take up*, and *turn down* etc. Consider the instances in (5) and (6) below.

- 5 (a) Tom turned John down  
 (b) Tom turned down John
- 6 (a) Tom turned him down  
 (b) \*Tom turned down him

We believe that *John* is also raised in 5(b), but that does not happen until the Spell-out. The movement happens after *John* has been placed after the particle. So only the semantic content of *John* actually undergoes that movement.

For the derivation in (6), the raising of the pronoun *him* cannot be delayed to occur after the Spell-out. Therefore 6(b) which enforces Procrastinate on the raising of the pronoun will make the derivation to crash.

### **SELF-ASSESSMENT EXERCISE**

Briefly describe to a friend how these two economy principles can affect syntactic movement.

Answer: Read sub-sections 3.1- 3.2 above for the answers.

## **4.0 CONCLUSION**

The two principles described above have to do with movement. Greed shows why the movement must occur. Procrastinate on the other hand shows why the movement must be delayed.

## **5.0 SUMMARY**

In this unit, we learnt that items are moved because they have uninterpretable features to be interpreted. We also learnt that such movement can be delayed. The former results from the principle called Greed, while the latter is simply called Procrastinate principle.

## **6.0 TUTOR-MARKED ASSIGNMENT**

1. Discuss the economy principle involved in the derivation of each of these expressions.
  - (a) You can go?
  - (b) They came when?
2. Explain how greed can inform verb movement in English.

## 7.0 REFERENCES/FURTHER READING

- Boskovic, Zeljko (1995). "Case Properties of Clauses and the Greed Principle". *StudiaLinguistica*49, 32-53.
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- Lasnik, Howard (1999). *Minimalist Analysis*. Oxford: Blackwell Publishers, chapter 6 (for last resort).
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- Wilder, Chris & Damir Cavar (1994). "Word Order Variation, Verb Movement, and Economy Principles." *StudiaLinguistica*48, 46-86.

## UNIT 3 LAST RESORT

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- 3.0 Main Content
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  - 3.2 *Do*-insertion as a last-resort polar questions
  - 3.3 *Do*-insertion as a last resort in sentence negation
- 4.0 Summary
- 5.0 Conclusion
- 6.0 Tutor-Marked Assignment
- 7.0 References/Further Reading

### 1.0 INTRODUCTION

A syntactic movement is considered a Last Resort operation when it occurs purposely to save the derivation from crashing. In such a case, that operation becomes so necessary that it cannot be ignored or delayed further.

### 2.0 OBJECTIVES

At the end of this unit, you should be able to:

- identify the Last Resort economy principle and how it works; and
- state how to apply the principle in syntactic analysis.

### HOW TO STUDY THE UNIT

- a. Read this unit as diligently as possible.
- b. Find meaning of unfamiliar words in the unit using your dictionary.
- c. As you read, put major points down in a piece of paper or jotter.
- d. Do not go to the next section until you have fully understood the section you are reading now.
- e. Do all the Self-Assessment exercises in the unit as honestly as you can. In some areas where it is not feasible to provide answers to Self-Assessment exercises, go to the relevant sections of the unit to derive the answers.

### 3.0 MAIN CONTENT

#### 3.1 *To*-insertion as a Last Resort

We can also see the use of *to* particle as last-resort in indicating indirect object in di-transitive constructions.

1. He gave the book out.
2. He gave me.
3. He gave me the book

The following structures are all ill-formed.

4. \*He gave the book me.
5. \*He gave me it
6. \*He gave it me

The ill-formed structures above are rescued with the insertion of *to* particle to derive the well-formed structures in (7) and (8) below.

7. He gave it to me
8. He gave the book to me.

#### 3.2 *Do*-insertion as a Last Resort in Polar Questions

In the construction of polar questions in English, the auxiliary verb will be copied and moved out of the TP. Since the subject remains in the TP, the result will be an inversion.

9. He can read
10. Can he read?
11. He read
12. \*Read he?

Verb movement is a feature in Elizabethan English. The ill-formed structure above could still converge (not crashing) as shown below.

13. Readeth he?

However, contemporary English does not allow the kind of movement in (13) above. So only the auxiliary can be copied in this manner. As a result of this, The Last resort operation that rescues this derivation from crashing is the insertion of the *do* auxiliary. The rescued structure is shown below.

14. Does he read?



### 3.3 *Do*-insertion as a Last Resort in Sentence Negation

Negation in English involves the movement of the auxiliary into the Negation Phrase (NegP). This NegP is higher than the TP. So the auxiliary has to be copied and moved to merge with the negator (Neg).

15. He can read
16. He *cannot* read

In a situation where there is no auxiliary verb, we cannot generate sentence negation without *not*. (Take note; this generalisation does not include the use of negative adverbs such as *rarely*, *hardly*, *no longer* and *seldom*. It does not include the use of another set of words we call *n-words* in the literature. These are, *no one* and *anybody*).

17. \*He not read.

In Elizabethan English, the verb will be copied out of the TP into the NegP. That is why we have the following construction in the Bible using Elizabethan English.

18. He readeth not.

Contemporary English does not move the main verb into the NegP. In the absence of any auxiliary to be moved the derivation tends to crash. In order to rescue the derivation, the grammar inserts *do* auxiliary between the subject and the negator as a last resort operation.

### SELF-ASSESSMENT EXERCISE

Briefly describe to a friend how these two economy principles can affect syntactic movement.

Answer: Read sub-sections 3.1-3.3 above for the answers.

### 4.0 CONCLUSION

This principle explains why some derivations that would have crashed could still be rescued. This clearly shows that language is rather linguistic than strictly being logical. Language has a self-repair method.

### 5.0 SUMMARY

In this unit, we have discussed some of the cases of Last Resort principle in English expressions. These are just cases cited to illustrate the principle.

## 6.0 TUTOR-MARKED ASSIGNMENT

Cite two examples each for the following:

1. *to*-insertion as last-resort
2. *do*-insertion as last-resort

## 7.0 REFERENCES/FURTHER READING

Chomsky, Noam (1991). "Some Notes on Economy of Derivation and Representation." In: Freidin, Robert (Ed.). *Principles and Parameters in Comparative Grammar*. Cambridge, Mass.: MIT Press [also published as chapter 2 of Chomsky 1995].

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- Zwart, C. Jan-Wouter (1996). "'Shortest Move' versus 'Fewest Steps.'" In: Abraham, Werner; Samuel David Epstein, Höskuldur Thráinsson.

## UNIT 4    LEAST EFFORT

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- 2.0 Objectives
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  - 3.2 Reduced clause
  - 3.3 The Use of pro form
- 4.0 Conclusion
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### 1.0 INTRODUCTION

By this economy principle, we mean that when more than one means of derivation is possible, the shorter one is usually preferred to the longer one. This refers to the choice of a derivation in which minimum effort is required with the idea that a derivation would naturally prefer minimal efforts to task-laden ones.

### 2.0 OBJECTIVES

At the end of this unit, you should be able to:

- identify the economy principle of least effort and how it works; and
- state how to apply it in a relevant syntactic analysis.

### HOW TO STUDY THE UNIT

- a. Read this unit as diligently as possible.
- b. Find meaning of unfamiliar words in the unit using your dictionary.
- c. As you read, put major points down in a piece of paper or jotter.
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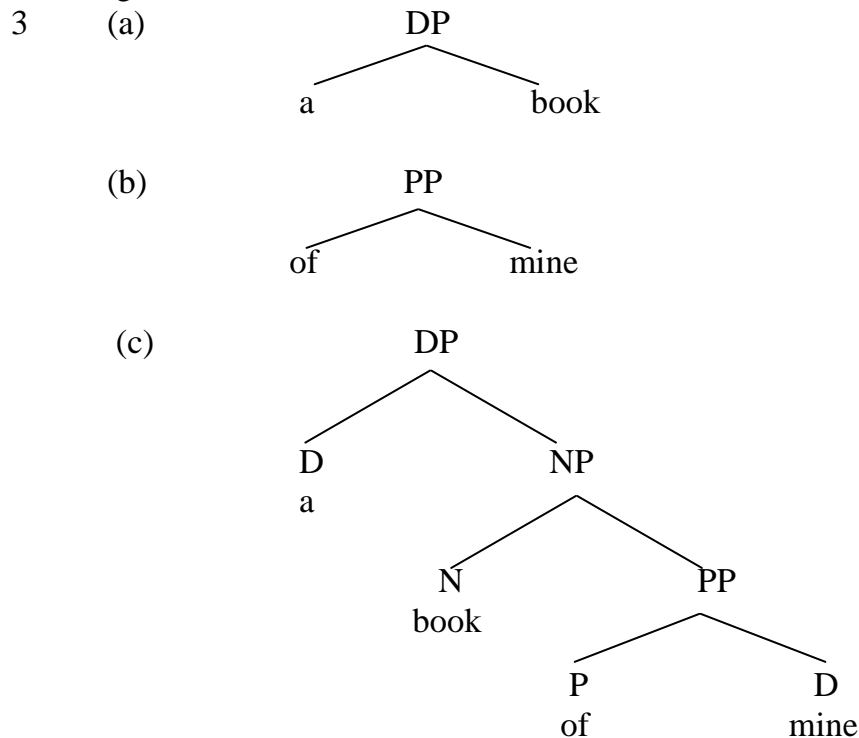
### 3.0 MAIN CONTENT

#### 3.1 DP Construction: Possessive Adjective versus Possessive Pronoun

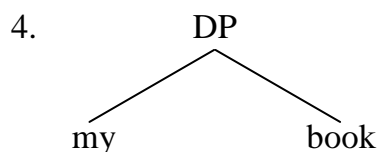
It is more economical to derive a DP with possessive adjective than the one with possessive pronoun.

1. my book (possessive adjective)
2. a book of mine. (possessive pronoun)

In (3) below, we have the stages involved in the tree –to- tree merging operation of the DP tree of the possessive pronoun. The first tree is given in (a), the second tree is given in (b), and the merger of the two trees is given in (c)



For the possessive adjective, we have a simpler DP structure. See this in (4) below.



We can notice that the use of possessive pronoun carries more rhetorical elegance than linguistic economy. No wonder it tends to be more frequent in formal discourse than in spontaneous casual interactions. Expressions involving possessive pronouns are not as common as those using possessive adjectives.

- 5 (a) a boss of mine  
 (b) a servant of mine  
 (c) a cook of mine

Compare the expressions above with their less formal counterparts below.

- 6 (a) my boss,  
 (b) my servant and  
 (c) my cook

### 3.2 Reduced Clause

The reduced clause is more economical since it involves fewer words than a fully stated clause. This fact is noticeable in the expression below, which becomes shorter because the embedded clause is reduced.

- 7 (a) The man whom you saw  
 (b) The man you saw

It is expected that speakers may have to use more of these reduced expression when they are talking freely. In this case, they will tend to give least effort to derivational tasks especially when they are not constrained by formal rules of discourse.

Other forms of reduction are also possible through simple discourse based ellipsis. For instance, the following question may have up to three answers as a result of elliptical constructions.

8. Will you go?

Possible answers are given below:

- 9 (a) Yes, I will go.  
 (b) Yes, I will.  
 (c) Yes.

The last answer, which takes the least effort to derive, will be preferred to the other answers.

You can also consider the following pairs of expressions

- 10 (a) Can you see that?  
 (b) Can you see?
- 11 (a) Do you speak Igbo?  
 (b) Do you?

The second item in each pair is produced with less effort. These shorter forms are instances of least effort principle. That is why people prefer using these shorter forms.

### 3.4 The Use of pro Form

The use of pro form is also very important in the operation of this principle. The pro forms usually have their long conventional forms which often involve longer syntactic constructions. The use of the pro form helps in reducing the PF by deleting repeated PF strings and replacing them with appropriate shorter PF forms. An instance is given below. The replaced string and its adverbial pro form are italicised.

12 I promised to come for lunch and he *came for lunch*.

13 I promised to come for lunch and he *did so*.

In the LF, the deletion of the second string (*came for lunch*) can still be recalled through the first string (*to come for a lunch*). So the LF of the pro form (*did so*) can easily be recovered.

Let us also consider the following example.

14 (a) Do you think *he will come*?

(b) I think *so*.

### SELF-ASSESSMENT EXERCISE

State five different cases of Least Effort principle in English, using examples different from those cited in the text.

### 4.0 CONCLUSION

Least Effort is a construction-economy principle. It shows that linguistic goals require less strenuous efforts which will yield more productivity in output. This is normal, and it is what makes language what it is in actual sense.

### 5.0 SUMMARY

In this unit, we discussed some cases of Least Effort in derivation. These include reduction of clauses, elliptical constructions and the use of pro forms.

## 6.0 TUTOR-MARKED ASSIGNMENT

Provide two instances of least effort principle of the following types.

1. Pro forms
2. Elliptical constructions

## 7.0 REFERENCES/FURTHER READING

Chomsky, Noam (1991). "Some Notes on Economy of Derivation and Representation." In: Freidin, Robert (Ed.). *Principles and Parameters in Comparative Grammar*. Cambridge, Mass.: MIT Press [also published as chapter 2 of Chomsky 1995].

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Ura, Hiroyuki (1995). "Towards a Theory of a 'Strictly Derivational' Economic Condition." *MIT Working Papers in Linguistics*,27: 243-267.