

A5: Syntax

Steven Chang (yc704)

1. Declarative: Declarative sentences convey information or make statements.

Imperative: Imperative sentences make commands or requests.

Interrogative: Interrogative sentences request information or ask questions.

Interjection: Interjection or Exclamatory sentences show emphasis. Unlike other

three types of sentences, exclamatory or interjection sentence is by adding emphasis after declarative, imperative, and interrogative sentences. Like adding exclamation mark (!).

The sentence is an Interrogative sentence.

2. - Will as a noun can be willion or testament while as verb can be an auxiliary verb indicates am going to in the future.

- Purchase as a verb can be to buy something while as a noun can be something that is purchased or bought

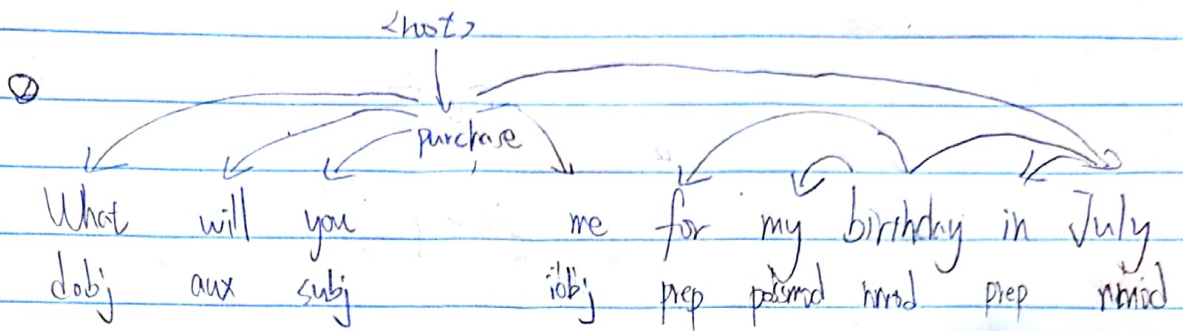
~~\*3. The sentence "What will you purchase me for my birthday in July?", the word "July" can simply as a noun in months or it can be a proper noun which can mean a name of a particular store~~

4. What will you purchase me for my birthday in July  
↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓  
PRON:WH AUX PRON:PERS VERB PRON:PERS PREP DET NOUN PRER NOUN

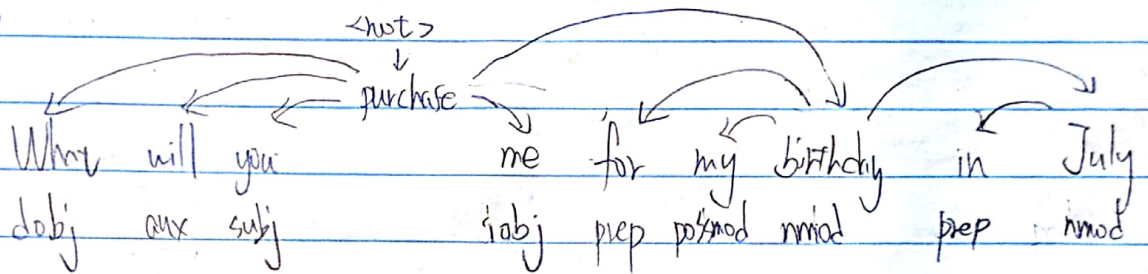
3. The structural ambiguity in the sentence can be, "in July" belongs to a part of purchase (VP) or it can be a part of birthday (NP).

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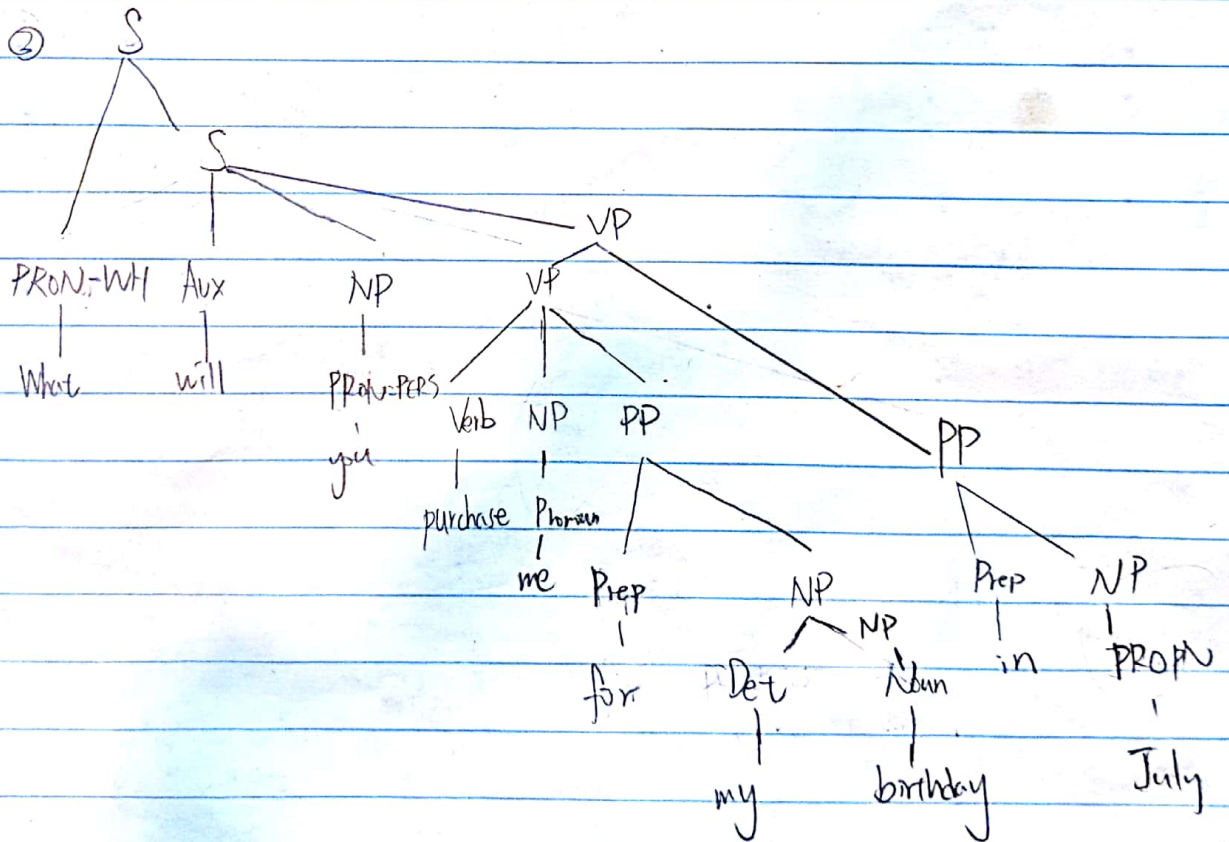
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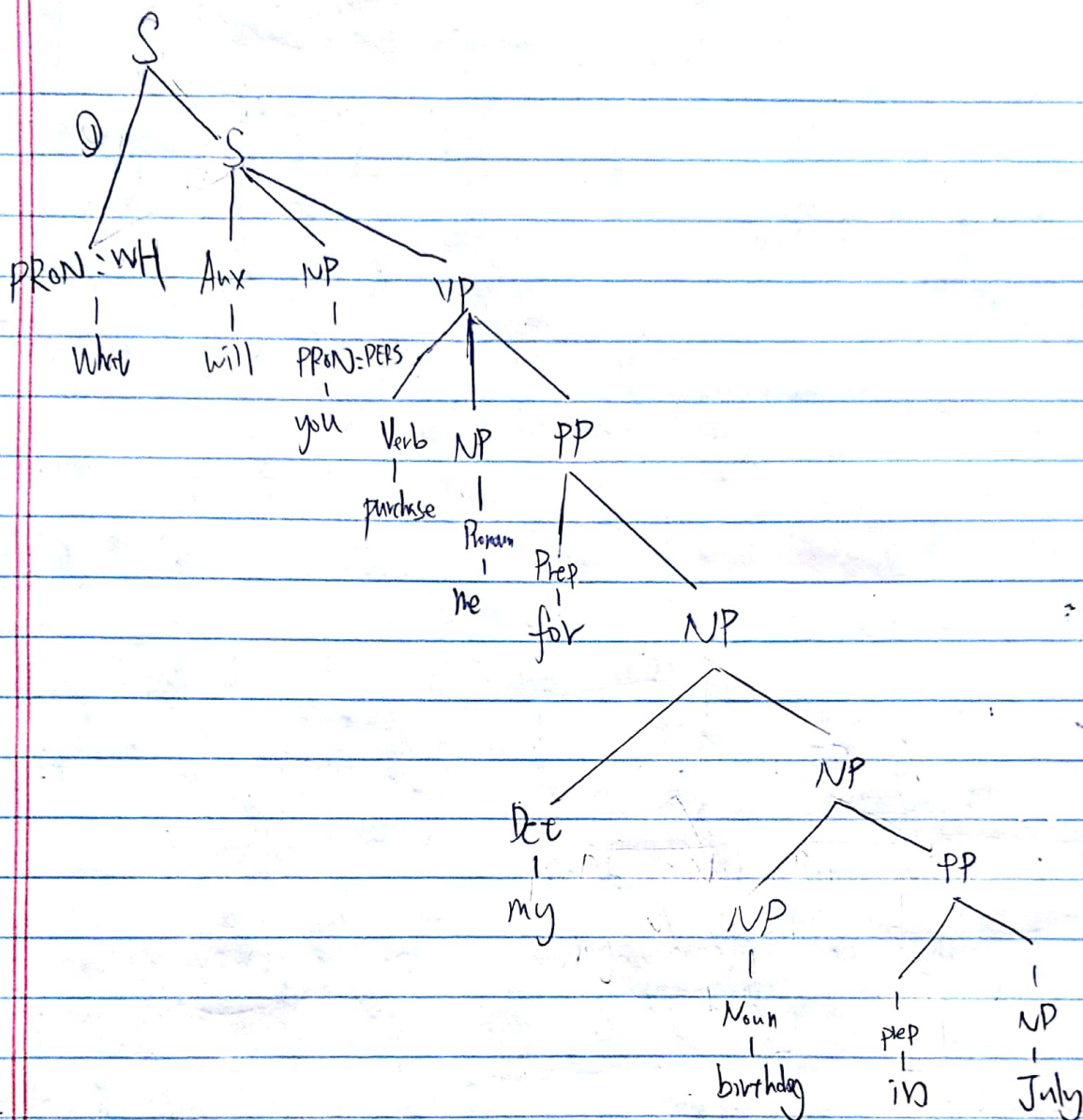
①



6.







7.

$N = \{ S, NP, VP, PP, PRON, AUX, VERB, PREP, PROPN, PRON:PERS, DET, MOUN \}$

$\Sigma = \{ \text{What, will, you, purchase, me, for, my, birthday, in, July} \}$

$S = S$

$R = S \rightarrow PRON:WH \ S \quad S \rightarrow AUX \ NP \ VP$

$VP \rightarrow VERB \ NP \ PP, \quad VP \rightarrow VP \ PP$

$PP \rightarrow PREP \ NP$

$NP \rightarrow NP \ PP, \quad NP \rightarrow PROPN$

$NP \rightarrow PRON:PERS, \quad NP \rightarrow DET \ NP$

$NP \rightarrow MOUN$

8. The CFG is an infinite string language

9. What will you in you purchase July for July?

10.  $S \rightarrow \text{PRON:WH} S$

$S \rightarrow X_1 VP$

$X_1 \rightarrow \text{AUX NP}$

$NP \rightarrow \text{PRON: PERS}$

$NP \rightarrow \text{DET NP}$ ,  $NP \rightarrow \text{NOUN}$

$NP \rightarrow \text{NP PP}$

$NP \rightarrow \text{PROPN}$

$VP \rightarrow X_2 PP$

$X_2 \rightarrow \text{VERB NP}$

$PP \rightarrow \text{PREP NP}$

$VP \rightarrow VP PP$

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Based on S. ① dependency tree

	STACK	WORD LIST	OPERATION	RELATION
12.	[root]	[What, will, you, ...]		
	[not, What]	[will, ...]	S	
	[not, What, will]	[you, purchase...]	S	
	[not, What, will, you]	[purchase ...]	S	
	[not, What, will, you, purchase]	[me, ...]	S	
	[not, What, will, purchase]	[me, ...]	LA	purchase → you
	[not, What, purchase]	[me, ...]	LA	purchase → will
	[not, purchase]	[me, ...]	LA	purchase → what
	[not, purchase, me]	[for, ...]	S	
	[not, purchase]	[for, ...]	RA	purchase → me
	[not, purchase, for]	[my, ...]	S	
	[not, purchase, for, my]	[birthday]	S	
	[not, purchase, for, my, birthday]	[in]	S	
	[not, purchase, for, birthday]	[in]	LA	birthday → my
	[not, purchase, birthday]	[in]	LA	birthday → for
	[not, purchase, birthday, in]	[July]	S	
	[not, purchase, birthday, in, July]	[ ]	S	
	[not, purchase, birthday, July]	[ ]	LA	July → in
	[not, purchase, birthday]	[ ]	RA	birthday → July
	[not, purchase]	[ ]	RA	purchase → birthday
	[not]	[ ]	RA	not → purchase