Phrase structure rules cannot account for all syntactic phenomena.

**INVERSION IN YES-NO QUESTIONS**

↓

the expected answer is YES or NO

Examples: *Should John leave?*

*Can Mary do it?*

Problem: the Aux is positioned to the left of the NP, in contrast to the usual position:

*John should leave.*

*Mary can do it.*

Solution: Add a transformational rule to the grammar by retaining the original rule.

**Transformation:** a syntactic rule that can move an element from one position to another.

In case of YES-NO questions the transformational rule that applies is known as INVERSION.

*John should leave.*

Inversion: Move Infl to the left of the subject NP.
Should John ___ leave?

Assumption: all sentences (S) occur within CPs. A CP should be considered a shell that forms a larger structure around an S.

(When S is embedded, the CP has a complementizer in the C position; elsewhere the C position is left empty.)

S is inside a CP shell!!
Inversion: Move Infl to C

Advantages of the Inversion Transformation:

1. We don’t have to work with two types of Aux verbs (one occurring at the beginning of the sentence, the other in the usual position in VP).
2. The Inversion Transformation captures the fact that both sentences are formed with the same set of Phrase Structure Rules -- thus, sharing the same structure; they only differ in that the question structure undergoes transformation.

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There are two levels of syntactic representation:
DEEP STRUCTURE: The structure generated by the Phrase Structure Rules in accordance with the subcategorization properties of the heads.

SURFACE STRUCTURE: the structure that results from the application of transformation rules.

Deep structure: *Mary can knit.*

Surface structure: *Can Mary knit?*
Steps of rule application: DERIVATION.

THE SYNTACTIC COMPONENT OF THE GRAMMAR

Phrase Structure Rules (XP Rules)
↓
Deep Structure ← (subcategorization: restricts choice of complements)
↓
Transformational Rules
↓
Surface Structure

WH MOVEMENT

Wh questions: Sentences with question words starting with wh- (what, who, which, etc.)

who and what are treated as nouns; which is treated as a determiner (see below)

What will John say?
1. Deep structure:
2. WH MOVEMENT (move the *wh* phrase into the Specifier position under CP):
3. INVERSION (move Infl to C)

Which car should the man fix?

Deep structure:

The man should fix which car

Wh Movement and Inversion:
Which car should the man ___ fix ___

Inversion

Wh Movement

AMBIGUOUS PHRASES AND SENTENCES

old men and women

a.

```
     NP
    /   \
   AP   N
   |     |
   A N Con N
   |     |
old men and women
```

(Con = Conjunction)

b.

```
   NP
  /   \
 NP  NP
 /     \
AP     \
|      \
A N C N
|      |
old men and women
```
Judy hit the man with an umbrella

a.

b.

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How to build tree structures?

↓