Reference No:

Revision History:

Name	Change Date	Version	Description of Changes
Shanza Nayyer	3rd Nov, 04	0.1	Created
Kiran Khurshid	15th Feb, 05	0.2	Added compound noun (noun before noun)
Zunaira Malik	13th June, 05	0.3	Change of ADJP to ADJPmain
Zunaira Malik	20th June, 05	0.4	Addition of NCOUNT constraint in PREDET and assignment of value to NCOUNT, change of NUM to be assigned NNUM value and removal of DEF in DET
Zunaira Malik	25th July, 05	0.5	Addition of NNUM constraint to POSTDET for quantifier and number phrase agreements

Rule ID: EGR222

Rule Syntax: Following is the constituent description of the rule.
PRENOMP -> (PREDET) (DET) (POSTDET) (ADJPmain) [n]*.

Rule Functional Description: Following are the functional specifications of the rule.
PRENOMP -> (PREDET : ^SPEC PRE-DET =!, ^NCOUNT = ! NCOUNT, ^NUM = ! NNUM;) (DET: ^SPEC DET = !, ^NCOUNT =

{POS, NEG}, ^NUM = ! NNUM;) (POSTDET : ^SPEC POST-DET =!,^NUM =! NNUM;) (ADJPmain: ^ADJUNCT ADJ = !,

^ADJUNCT ADJ ADJ_TYPE = ATTRIBUTIVE ;) [n:! $ ^ADJUNCT MOD_N;]*.

Frequency: -

Description: This rule shows the functional and constituent structure of pre-nominal. This production further expands to give all possible specifiers and modifiers which precedes and follows noun.

c-structure: The production caters the modifiers and specifiers before and after noun.
The detail of PREDET, DET, POSTDET and ADJPmain will be discussed in their relevant documents.

f-structure: In the structure of the PRENOM, in case of the DETP (determiner phrase), the DET will be copied to the mother node as the SPEC of the mother node, NCOUNT as {POS, NEG} and NUM as NNUM will be copied to the mother node. PREDET and POSTDET are already made a SPEC of their particular type. PREDET causes NCOUNT value to travel up from below to enforce a constraint of similar NCOUNT from bottom to mother node,

NUM also passes to check for a PL object in case of the quantifier “few” or “many”, which can only take plural subjects..
To prevent parsing of
Double the cat - where ‘cat’ has an NCOUNT = POS which needs to be compared with the NCOUNT = NEG value of “double” and fail.

The ADJECTIVE in the ADJPmain will be copied to the mother node as an ADJUNCT of the mother node. NUM and NCOUNT in the DET will be unified in the mother node (it is to enforce as constraint on NUM and NCOUNT). A noun may also occur before a noun. This forms a compound noun. The noun becomes a part of the set ADJUNCT MOD_N.

Examples:
1) Some of those 12 girls were dishonest.
2) My first daughters’ son is well-mannered.
3) Few good men attended the conference.
4) The good grammar writer John is working.
5) Dogs voice concern over Iraq Oil
6) Double the fun
7) Hundreds of people

Rule Status: Active
Reference:
[1] James Allen, “Natural Language Understanding”
[2] Miriam Butt, Tracy Holloway King, ”A Grammar Writer’s Cookbook”
Related Rules: EGR130, EGR131, EGR132, EGR114
Related POS: EPOS105
Replaces: EGR129
Reason: Addition of NNUM constraint to POSTDET for quantifier and number phrase agreements
Replaced by: -
Reason: -

Analysis: Following is the in-depth analysis of the rule.

Analysis 1:
In addition to head, a noun phrase may contain *specifiers* and *qualifiers* preceding the head. The qualifiers further describe the general class of objects identified by the head, while the specifiers indicate how many such objects are being described, as well as how the objects being described relate to the speaker and hearer. Specifiers are constructed out of *ordinals, cardinals* and determiners. Determiners can be sub-divided into the classes: articles, demonstratives, possessives, wh-determiners, quantifying determiners.

The qualifiers in a noun phrase occur after the specifiers (if any) and before the head. They consist of adjectives and noun being used as modifiers. [1, p. 26]

For detail of noun and adjective see the relevant POS files.

Analysis 2:
Articles, quantifiers and pronominal genitives pattern similarly in English in that they appear in the first position in an NP: they precede any modifiers as in the example below, and cannot be preceded by another article or quantifier which modifies the noun.
Example: i) The/ a/ every/ Kim's small dog barks.
ii)* The a/ every/ Kim's small dog barks.
The intuition that has guided most of the modern syntactic approaches to these constructions is that they serve to "specify" the head noun rather than simply "modify" it.

Articles, quantifiers and pronominal genitives are treated uniformly in all three grammars in that they are represented under SPEC feature in the f-structure. [2, p. 101]

Titles like *Professor John Smith* and names like *linguistics department* are treated as N-N sequence and are parsed by a specialized subset of c-structure rules within the NP rule system. While German is well-known for its lexical noun compounding, English employs a non-lexical compounding strategy and French uses PPs. [2, p. 90]
Example: i) hydraulic oil filter.

In English and French, these nonlexical compounds are dealt with by means of a special c-structure rule which analyses N-N sequence that are not titles or names as compounds in the f-structure. [2, p. 90]

While the rules necessary to treat most N-N sequence found in the languages are in place, a problem remains. Almost any noun can be turned into a "title", as in *grammar writer John*, or a name. Hand coding each nominal lexical entry for precise information is unfeasible, and loosening the c-structure rules to allow for new creations of N-N sequences can lead to overgeneration. Thus, while the grammars can parse most N-N sequences, the issue has not yet been completely resolved. [2, p. 92]

According to the Cookbook analysis [2] the compound noun is made a part of the structure named COMPOUND within an NP, but as we analyze the noun occurring before a noun as a modifier noun only hence we place it within the set ADJUNCT in the set named MOD_N.

Result: The overall idea of pronominal is taken from the above analyses but the ordering of prenominal in it is not very sophisticated. Hence the different kinds of pre-nominals formed in the above productions are subject to revision.

Future Work:
1) There will be more possibilities of sequencing of pre-nominals which will be accounted for in later stage.
2)The agreement of PRENOMP with head noun will be checked.