Reference No:

Revision History:

Name	Change Date	Version	Description of Changes
Kiran Khurshid	16th September 2004	0.1	Created
Kiran Khurshid	24th December 2004	0.2	Added coordinate correlative
Zunaira Malik	20th May, 2005	0.3	New release

Rule ID: EGR208

Rule Syntax:
PPnmain -> PPn [comma PPn]* coord_conj PPn
PPnmain -> correlative PPn coord_conj PPn
PPnmain -> PPn

PPn_objmain -> PPn_obj [comma PPn_obj]* coord_conj PPn_obj
PPn_objmain -> correlative PPn_obj coord_conj PPn_obj
PPn_objmain -> PPn_obj

Rule Functional Description:
1) PPnmain -> PPn: ! $ ^, ^ PFORM = ! PFORM; [comma:; PPn: ! $ ^;]* coord_conj: ^ CONJ_FORM = !CONJ_FORM; PPn: ! $ ^;.
2) PPnmain -> correlative: ^=!; PPn: ! $ ^, ^ PFORM = ! PFORM; coord_conj: ^ CONJ_FORM = !CONJ_FORM, ^CONJ_FORM = ^_ALLOWED_CONJ; PPn: ! $ ^;.
3) PPnmain -> PPn: ^ = !;.

4) PPn_objmain -> PPn_obj: ! $ ^; [comma:; PPn_obj: ! $ ^;]* coord_conj: ^ CONJ_FORM = ! CONJ_FORM; PPn_obj: ! $ ^;.
5) PPn_objmain -> correlative: ^=!; PPn_obj: ! $ ^; coord_conj: ^ CONJ_FORM = ! CONJ_FORM, ^CONJ_FORM = ^_ALLOWED_CONJ; PPn_obj: ! $ ^;.
6) PPn_objmain -> PPn_obj: ^ = !;.

Frequency: -

Description: This rule shows the coordination of prepositional phrase.

c-structure: These productions show coordinate conjunction and correlative conjunctions at PP level.

f-structure: Use of coord_conj (coordinate conjunction) introduces a set containing two or more conjunct elements along with some features like CONJ_FORM, NUM, etc. In all the PPnmain productions, PFORM has been placed at an upper level, but this has only been done for the PP phrase occurring before the conjunction. This is because there is a conflict problem which will arise if PFORMS for all the PPs separated by conjunctions are placed above. Moreover, right now the parser does not create a set of elements that are passed above with the same attribute name. We need to pass all PFORMs for all PPs above but will do it after enhancement of the parser. Right now, the parser only checks the PFORM for the PP phrase occurring before the conjunction and parses the rest with respect to the first PP, whether it is an ADJUNCT or an OBL, the subsequent PPs parse depending on the first PP.

These features are generalized to the whole set. The endorsing item of the correlative occurs before the first prepositional phrase and the coordinator occurring after it has to agree with it.

Example:
1) She came <u>by air</u> or <u>by rail</u>. (Production 1)
2) She came <u>either by air or by rail</u>. (Production 2)
3) She relied <u>on the documentaries and on the book</u>. (Production 4)
4) She relied <u>either on the documentaries</u> or <u>on the book</u>. (Production 5)

Rule Status: Active
Reference:
   (1) Miriam Butt, Tracy Holloway King, "A Grammar Writer's Cookbook"
Related Rules: EGR213
Related POS: EPOS117, EPOS122
Replaces: EGR144
Reason: same rule copied for new release
Replaced by: -

Analysis:
Analysis 1: The basic approach to constituent coordination in LFG is as follows [1]:

$$SCCOORD (CAT) = CAT ([COMMA\ CAT] + (COMMA))\ CONJ\ CAT$$

Here, the CAT (category) is PP (preposition phrase).

The prepositional phrase can combine using coordinate conjunctions. This is shown in the examples given below:
Example: i) I put the toffees <u>in this box</u> and <u>in that box</u>.
      ii) Did you put the toffees <u>in this box</u> or <u>in that box</u>?
      iii) The toffees are <u>in the box</u> yet <u>on the table</u>.

However, there are other kinds of prepositional phrases too, which are not adjuncts, but are objects of the verb. These are named PPn_obj. The coordination of these prepositional phrases is handled by separate rules. The following example represents this:
Example: i) She relies on the book and on his instructions.

Coordination of PP might be possible using correlative conjunctions. In that case there is an endorsing item at the beginning of the phrase which takes only a particular coordinator with it. For more information refer to the POS document for correlative.
Example: i) I put the toffees either in this box or in that box.
      ii) I put the toffees neither in this box nor in that box.
      iii) I put the toffees both in this box and in that box.
      iv) She relies neither on the book nor on his instructions.
      v) She relies both on the book and on his instructions.
      vi) She relies either on the book or on his instructions.

Result: We decided on the above analysis.

Future Work:
- Negation is not yet handled. Hence, the following cases will be dealt with later:
  - *Example:* i) She came by rail not by air.

- Need to add PFORM passing notation in all PPmain productions separated by conjunctions. Need to add them to a single set of PFORMs at the conjunction set level. Right now, the parser does not allow the formation of a PFORM set, containing multiple PFORMS from the lower set of OBL or ADJUNCTs.