Reference No:

Revision History:

Name	Change Date	Version	Description of Changes
Shanza Nayyer	21st April, 04	0.1	Created
Kiran Khurshid	27th April, 04	0.2	Modified after discussion in meeting
Zunaira Malik	20th June, 05	0.3	Problem with prep constraint for 'of'

Rule ID: EGR230

Rule Syntax: Following is the constituent description of the rule.
FRACTIONP -> card ord

The following does not work
FRACTIONP -> card ord p

Rule Functional Description: Following are the functional specifications of the rule.

Allows parsing of :
He ate two third the pie

FRACTIONP -> card:^ CARD=!; ord:^ORD =!, ~[!ORD_FORM =c 'first' | !ORD_FORM =c 'second'];.

The following one does not work due to problems with the parser, might be a conflict with the genitive 'of' phrase ,
for e.g.
   Advice of the parents

FRACTIONP -> card:^=!; ord:^=!, ~[ORD_FORM =c 'first' | ORD_FORM =c 'second']; p:!PCASE =c 'of', ^PCASE = 'of';.

Frequency: -

Description: This rule shows the functional and constituent structure of fraction.

c-structure: This production gives the order in which fraction can occur before determiner. The rule at work here is that a cardinal number (e.g. two, three) is followed by an ordinal number (e.g. fifth, sixth) which may or may not, in turn be followed by the preposition "of".

f-structure: Here the constraint which is applied on ordinals is that the ordinal *first and second* should not follow any cardinal number.
It is also noted that if the fraction is followed by a preposition, than it is always 'of' hence all other prepositions are constrained. Also only PCASE is passed to the mother node and all other feature values of preposition like sub-categorization frame etc. is filtered out. This is done cause 'of' here is used as a connector to the fraction, not as the head of the phrase. However, this constraint creates a problem, maybe because the parser conflicts with genitive 'of' phrase in case, for e.g.:
   Cup of tea

Examples:
1) Charlie ate <u>two-fourth of</u> the pie //problem
2) * Charlie ate <u>two-first</u> of the pie //problem
3) He completed <u>two-sixth </u>the work //works with omission of prepositional phrase constraint

Rule Status: Active
Reference: -
Related Rules: EGR010
Related POS: EPOS009, EPOS010, EPOS016
Replaces: - EGR135
Reason: - previous one does not work with the 'of' phrase constraint so it was removes to allow functioning without the 'of' phrase which is optional.
Replaced by: -

Analysis: -

Result: -

Future Work: Following issues need to be addressed, and constraints to be included respectively, after further analysis:

1) The ordinal number must be less than the cardinal number of a fraction. This relationship needs to be implemented in the rule. This will be dealt with while considering the semantics of the sentences.
2) Fractions cannot occur with words like girl, boy, etc. (e.g. *one fourth of a girl), hence some constraints at the semantic level will be introduced to differentiate between the "animated" and "unanimated" nouns, occurring after fractions.
3) Fraction phrase like 1/100th etc. still need to be analyzed.
4) Problem of 'of' phrase in case of " he ate two-third of the pie" needs to be solved by resolving the conflict with the genitive 'of' phrase in "son of John".