Nominal Indicator Rules:

Due to recent changes in nominalization processing algorithm, the procedure of adding nominal indicator rules is now somewhat more involved. The main change is that several argument cues are assumed and lexical information is used, making some of the existing indicator rules redundant. The existing nominal indicator rules in Generic SemRep and DIM SemRep have already been updated with the new procedure in the new production version. The lines that pertain to nominal indicator rules in semrules.pl have been marked as:

- *NOM remove*: An existing indicator rule made redundant due to the new algorithm and, therefore, removed
- *NOM add*: A new indicator rule that supplants one or more existing indicator rules
- *NOM untouched*: An indicator rule that has not changed

Indicator rules marked as *NOM remove* will be removed in a future release, after we ensure that these changes do not cause any problems.

When adding a new nominal indicator rule, several things regarding argument cuing have to be considered now:

1. "of" is assumed an object cue, and "by" and "with" subject cues. Therefore, there is generally no need to specify them in the indicator rule, if they conform to these roles for the given indicator rule (see item 4 for an exception). Consider "induction" as an indicator rule for "causes". Previously, we had

   word_corresponds_to_semnet_relation(induction, noun, of-by, causes).

   which is now replaced with

   word_corresponds_to_semnet_relation(induction, noun, _, causes).

   as both "of" and "by" are assumed cues.

2. If "of" cues the subject, then the object cue determines the indicator rule. If the object cue is "with" or the object cue is specified in the lexicon* (anything other than "by"), there is no need to specify cues for the indicator rule. Consider "interaction of X with Y", where "of" cues the subject X and "with" the object Y. Two indicator rules

   word_corresponds_to_semnet_relation(interaction,noun,with,interacts_with).
   word_corresponds_to_semnet_relation(interaction,noun,of-with,interacts_with).

   are now replaced with

   word_corresponds_to_semnet_relation(interaction,noun,_,interacts_with).

On the other hand, consider "effect of X on Y". Here, "on" cues the object. The Lexicon specifies that "effect" subcategorizes for the preposition "on". Therefore, the indicator rules

word_corresponds_to_semnet_relation(effect,noun,of-on,affects).
word_corresponds_to_semnet_relation(effect,noun,on,affects).
word_corresponds_to_semnet_relation(effect,noun,of,affects).

is supplanted by

word_corresponds_to_semnet_relation(effect,noun,_,affects).

If the object cue in question is not specified in the Lexicon, then the indicator rule should specify it. For these rules, the algorithm does not check the Lexicon. For example, consider "prevalence of X among Y". "among" is not lexically specified for "prevalence". Therefore, the old rule

word_corresponds_to_semnet_relation(prevalence,noun,of-among,occurs_in).

becomes

word_corresponds_to_semnet_relation(prevalence,noun,among,occurs_in).

*Lexical lookup can be performed using the command “echo <nominal> | llk06” from the command line.

3. Some nominals do not take prepositionally-cued subjects (e.g., “cause", "product"). These are maintained as an exception list. (*exceptions:non_prepositionally_cued_subject/1* predicate).
4. In some cases, lexically specified cues (excluding "of", "with") are not desirable as object cues. For these cases, it is acceptable to specify cues (only object cue or both object and subject cues) in the indicator rule file. An example we have encountered concerned "resolution". The existing rules for this nominalization were

   word_corresponds_to_semnet_relation(resolution,noun, of-by, treats).
   word_corresponds_to_semnet_relation(resolution,noun,of,treats).

   Following item 1. above, we would normally replace them with

   word_corresponds_to_semnet_relation(resolution,noun,_,treats).

   However, this causes the following issue. Since no cue is specified in the new rule, the algorithm checks the Lexicon, where it finds that "into" can cue the object of "resolution". Following 2), the algorithm can then conclude, given the new indicator rule, that "resolution of X into Y" could be interpreted as "X-TREATS-Y", which is obviously wrong. Granted, the semantic types will probably not match, but to prevent such errors, we kept the two original indicator rules intact.

5. If both cues are specified in the indicator rule file, the first one is considered the object cue and the second one the subject cue.