SECTION - D

<u>DISCOURSE</u> : Language does not normally consist of isolated, unrelated sentences but instead of collocated, Structured, coherent groups of sentences. We refer to such a coherent structured group of sentences as a discourse.

<u>REFERENCE RESOLUTION</u> : In order to interpret the sentences of any discource, we need to know who or what entity is being talked about.

Like in a passage multiple phrases are used to signify one person. Linguistic expression his/her are used to denote entity & individual as reference.

Reference resolution is task of determining what entities are referred to by linguistic expression.

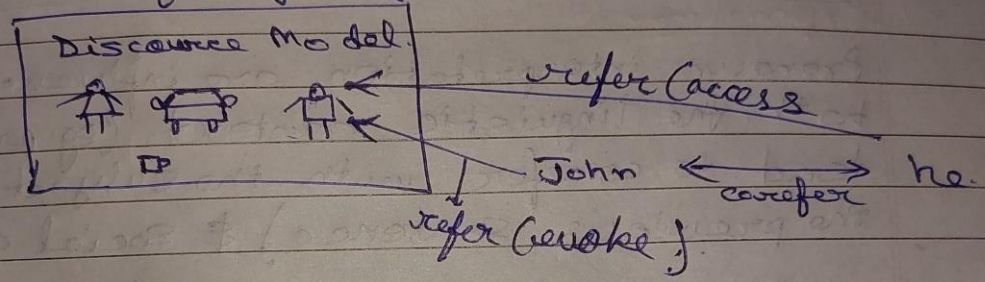A Natural language expression used for reference called referring expression. Entity reffered called referent.

Two refering expression that are used to refer same entity are said to corefer.

John is antecedent of he.

Reference to an entity that has been previously introduced into the discourse is called anaphora & referring expression used is said to be anaphoric.

Refering is of multiple types/ways depending on discourse context.

Speakers beleive that referent occupies within the hearer's set of beliefs. A subset of those believes that has a special status from hearer's mental model of ongoing discourse → Discourse Model.

Discourse Model

refer (access

D

John ⟵ corefer ⟶ he.

refer (evoke)

REFERENCE PHENOMENA

① Indefinite NP: Entity new to hearer into discourse context

Most common Indefinite reference is marked with the determiner a (or an) but it can also marked by a quantifier such as some/this or determiner this.

② Definite Noun Phrase: Refer to entity that is identifiable by hearer.

I read about it in The New York Times.

③ Pronouns: Another form of definite reference is pronominalization.

Ex → Emma smiled & chatted as cheerfully as she could.

④ Demonstratives: Demonstrative nouns like this/that behave somewhat differently than simple definite pronouns like it.

They can appear alone.

③ Name : They are very common form of refering expression, name of people, organization & locations.

Preferences in Pronoun Interpretation

Pronoun interpretation are influenced by both. the linguistic context (eg pronoun tend to corefer with the subject of the previous sentence) & social cues.

HOBBS ALGO: depends only on a syntatic parser plus a morphological gender & member checker.

Input of. Hobbs algo is a pronoun to be resolved, together with a syntatic parse of the sentences up to & including current sentence.

Algo search for an antecedant NP in these trees

Steps of Hobbs Algo :

① Begin at NP node immediately dominating the pronoun.

② Go up the tree to the first NP or Sentence (S) node encountered. Call this node X & call the path used to reach it p.

③ Traverse all branches below node X to the left of path p in a left to right, breadth first fashion. Propose as the antecedent any NP node that is encountered which has an NP or S node between it & X.

④ If node X is highest S node in sentence, traverse surface parse tree of previous sentence in the text in order of recency, the most recent first, each tree is traversed in a left to right, bridth first manner & when an NP node is encountered, it is proposed as antecedent. If X is not highest S node in sentence go to ⑤.

⑤ From node X, go up the tree to first NP or S node encountered. Call this new node X & call the path traversed to reach it p.

⑥ If X is an NP node & if the path p to X did not pass through the nominal node that X immediately dominates, propose X as the antecedent.

⑦ Traverse all branches below node X to the left of path p in a left to right breadth first manner. Propose any NP node encountered as the antecedent.

⑧ If X is S-node, traverse all branches of node X to right of path p in a L to R, BF Manner, but do not go below any NP or S node encountered. Propose any NP node encountered as antecedent.

⑨ Go to step ④

TEXT COHERENCE

The possible connections b/w utterences in a discource can be specified as a set of coherence relations.
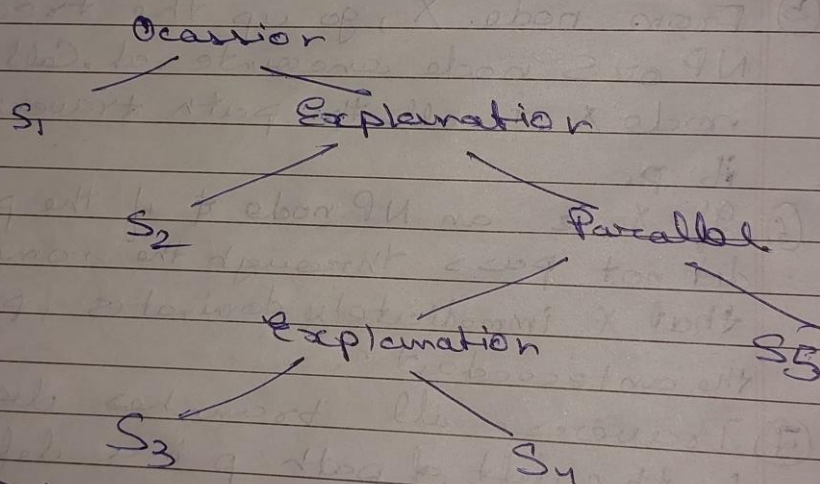
Result: State asserted by S_0 could cause the State /event asserted by S_1

Explanation: "

Parallel: Path $p(a_1, a_2 ---)$ from S_0
& $p(b_1, b_2 ---)$ of S_1 where a_i & b_j are similar, for all i.

Elaboration.

Occasion

```
                    Occasion
                   /
        S₁          \
                     Explanation
                    /
              S₂       \
                        Parallel
                       /        \
               Explanation       S5
              /      \
           S₃         S₄
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Discourse structure of Passage

Discourse Structure
→ action or process of defining something
→ a concise explanation of the meaning of word or phrase or symbol.
→ due to clarity of outline.
This gives cohesion.

PSYCHOLINGUISTIC STUDIES OF REFERENCE AND COHERENCE

→ people focused on - use of preferences to interpret pronouns., results contradictory.

Clark & Sehgal (1979) Reading Time Experiment
3 sentence given to various human,
buzzer pressed when target sentence understood.

Crawley et al. (1990) : Gramatical role preference.
2 tasks → Q/A Task
Referent Naming Task

Caramazza et al. (1977) → sentence completion task.