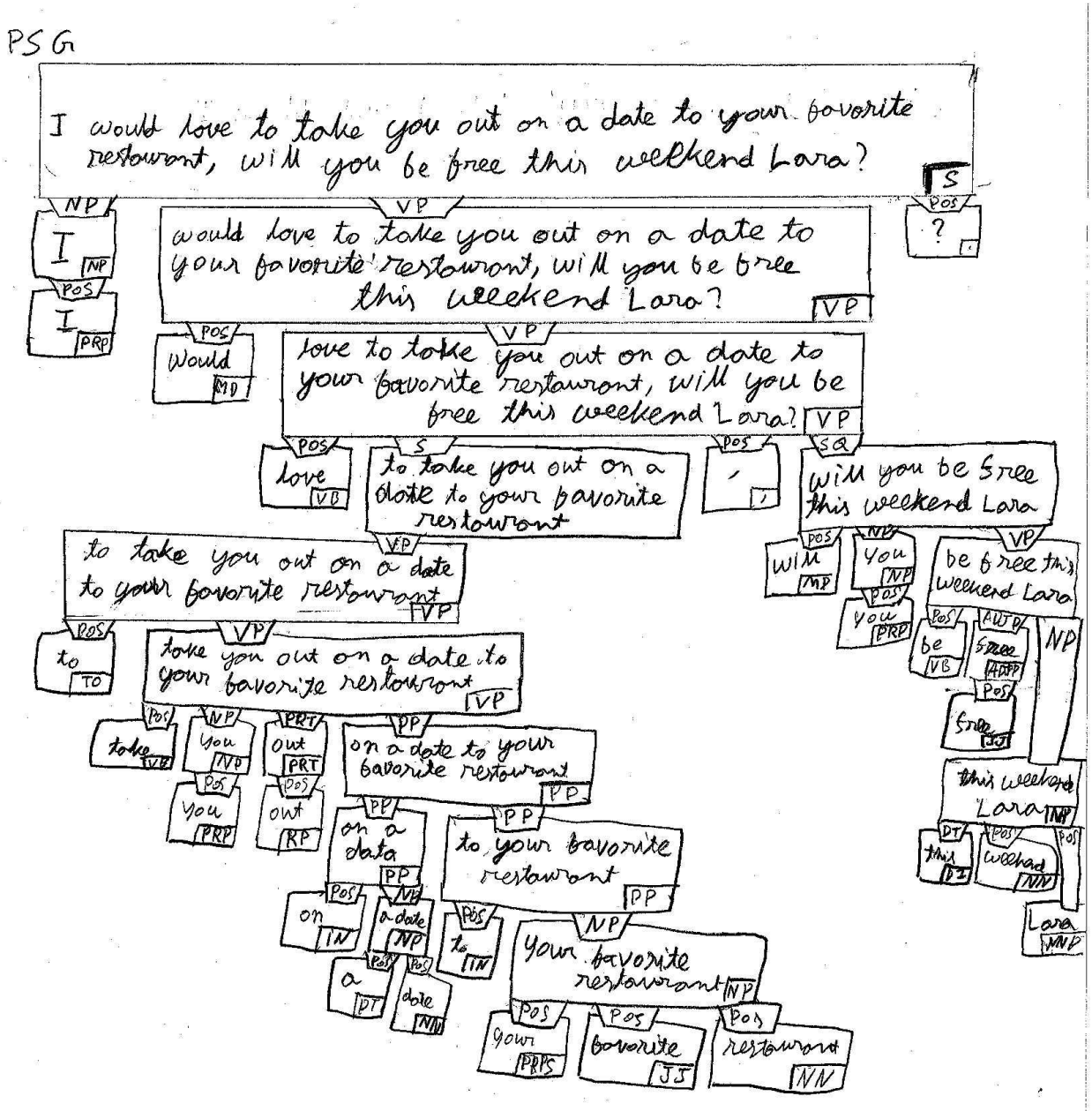
Sentence Parsing

The sentence I used : “I would love to take you out on a date to your favorite restaurant, will you be free this weekend Lara?”

1. PSG – Constituency Parsing



All phrase terms explained:

I. NP – Noun Phrase
II. VP – Verb Phrase
III. POS – Part of Speech
IV. PRP – Personal pronoun
V. MD – Modal

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VI. VB – Verb, base form
VII. S – simple declarative clause, i.e. one that is not introduced by a (possible empty) subordinating conjunction or a wh-word and that does not exhibit subject-verb inversion.
VIII. SQ – Inverted yes/no question, or main clause of a wh-question, following the wh-phrase in SBARQ.
IX. TO – to
X. PRT – Particle. Category for words that should be tagged RP.
XI. RP – Particle
XII. PP – Prepositional Phrase.
XIII. IN – Preposition or subordinating conjunction
XIV. DT – Determiner
XV. NN – Noun, singular or mass
XVI. PRP$ - Possessive pronoun (prolog version PRP-S)
XVII. JJ – Adjective
XVIII. ADJP – Adjective Phrase.
XIX. NNP – Proper noun, singular

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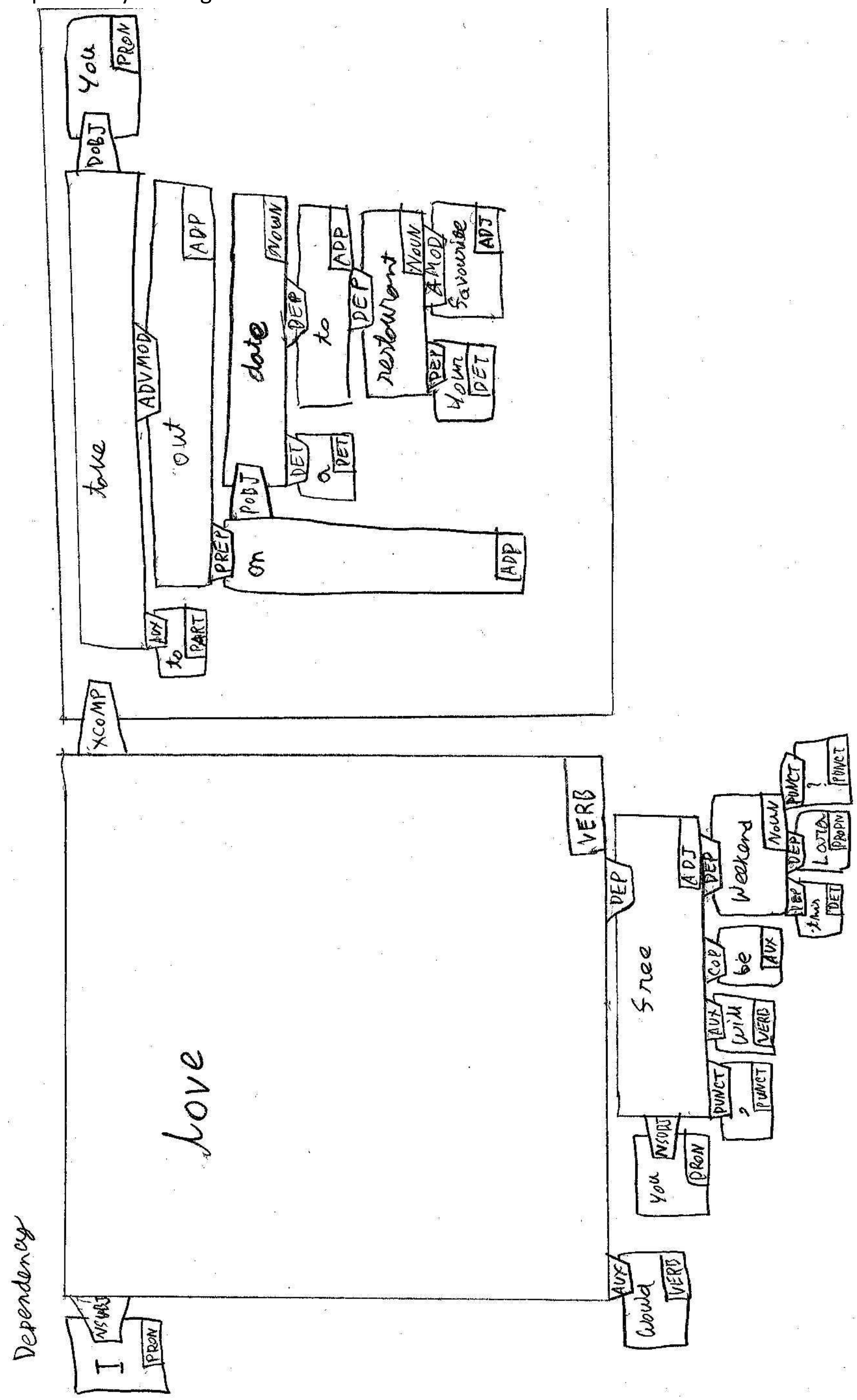
2. Dependency Parsing – DSG



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All Dependency relations:

I. NSUBJ – nominal subject: A nominal subject is a noun phrase which is the syntactic subject of a clause. The governor of this relation might not always be a verb: when the verb is a copular verb, the root of the clause is the complement of the copular verb, which can be an adjective or noun.

II. XCOMP – open clausal complement: An open clausal complement (xcomp) of a verb or an adjective is a predicative or clausal complement without its own subject. The reference of the subject is necessarily determined by an argument external to the xcomp (normally by the object of the next higher clause, if there is one, or else by the subject of the next higher clause. These complements are always non-finite, and they are complements (arguments of the higher verb or adjective) rather than adjuncts/modifiers, such as a purpose clause. The name xcomp is borrowed from Lexical-Functional Grammar.

III. AUX – auxiliary: An auxiliary of a clause is a non-main verb of the clause, e.g., a modal auxiliary, or a form of "be", "do" or "have" in a periphrastic tense

IV. DEP – dependent: A dependency is labeled as dep when the system is unable to determine a more precise dependency relation between two words. This may be because of a weird grammatical construction, a limitation in the Stanford Dependency conversion software, a parser error, or because of an unresolved long distance dependency.

V. PUNCT – punctuation: This is used for any piece of punctuation in a clause, if punctuation is being retained in the typed dependencies. By default, punctuation is not retained in the output.

VI. COP – copula: A copula is the relation between the complement of a copular verb and the copular verb. (We normally take a copula as a dependent of its complement; see the discussion in section 4.)

VII. DET – determiner: A determiner is the relation between the head of an NP and its determiner.

VIII. ADVMOD – adverb modifier: An adverb modifier of a word is a (non-clausal) adverb or adverb-headed phrase that serves to modify the meaning of the word

IX. PREP – prepositional modifier: A prepositional modifier of a verb, adjective, or noun is any prepositional phrase that serves to modify the meaning of the verb, adjective, noun, or even another prepositon. In the collapsed representation, this is used only for prepositions with NP complements.

X. POBJ – object of a preposition: The object of a preposition is the head of a noun phrase following the preposition, or the adverbs "here" and "there". (The preposition in turn may be modifying a noun, verb, etc.) Unlike the Penn Treebank, we here define cases of VBG quasi-prepositions like "including", "concerning", etc. as instances of pobj. (The preposition can be tagged a FW for "pace", "versus", etc. It can also be called a CC – but we don't currently handle that and would need to distinguish from conjoined prepositions.) In the case of preposition stranding, the object can precede the preposition (e.g., "What does CPR stand for?").

XI. AMOD - adjectival modifier: An adjectival modifier of an NP is any adjectival phrase that serves to modify the meaning of the NP

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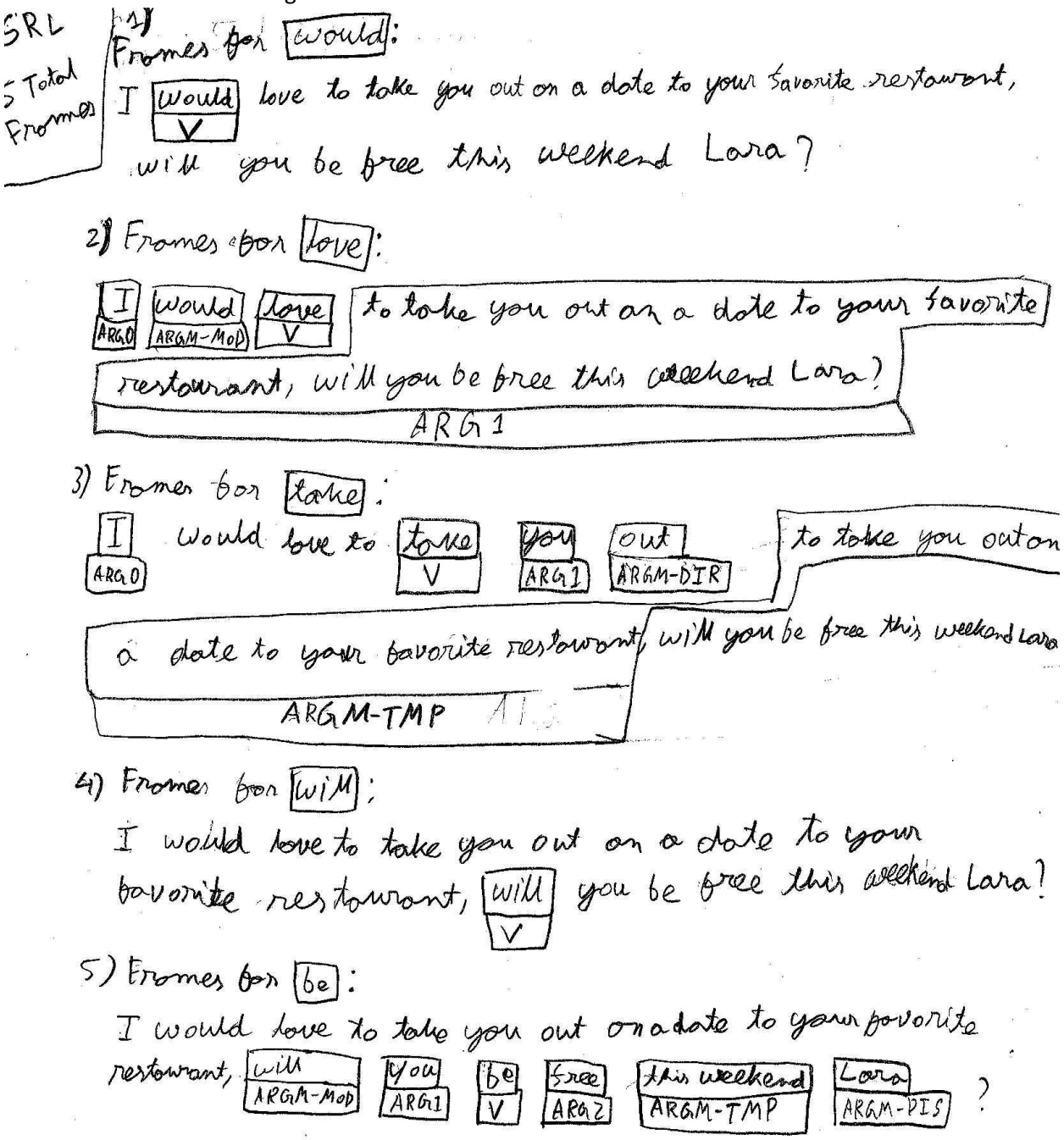
3. SRL – Semantic Role Labeling



I. Frame 1 for “would”:
   a. V : would
II. Frame 2 for “love”:
   a. ARG0 : I
   b. ARGM-MOD : would
   c. V : love

   d. ARG1 : to take you out on a date to your favorite restaurant , will you be free this weekend Lara

III. Frame 3 for “take”:
   a. ARG0 : I
   b. V : take
   c. ARG1 : you
   d. ARGM-DIR : out
   e. ARGM-TMP : on a date to your favorite restaurant

IV. Frame 4 for “will”:
   a. V : will

V. Frame 5 for “be”:
   a. ARGM-MOD : will
   b. ARG1 : you
   c. V : be
   d. ARG2 : free
   e. ARGM-TMP : this weekend
   f. ARGM-DIS : Lara

All Tags described:

I. ARG0 : is the agent of the sentence, the one doing the action
II. ARG1 : is often the passive actor
III. ARG2 : is often the ‘instrument’
IV. V : Is the focused Verb of the sentence
V. ARGM-MOD : Modifier -Modals : these are will, may, can, must, shall, might, should, could, would, these are also annotated as verbs.
VI. ARGM-DIR : Modifier-Direction : Directional modifiers show motion along some path.
VII. ARGM-TMP : Modifier-Temporal : Temporal Args show when an action took place.
VIII. ARGM-DIS : Modifier-Discourse : These are markers which connect a sentence to a preceding sentence.

4. Through the entire document I have done 3 type of parsing, PSG parse, Dependency parse and SRL parse.

   Each type of parsing has its own pros and cons. I will give the pros and cons for each type of parsing below,

   a. PSG parse –
      a. Pro – This parser has been trained on millions of sentences and can go in depth for parsing a sentence.
      b. Cons – It may be too in depth that using the output to do something else may turn out to be challenging.
   b. Dependency parse

   a. Pro – It relies on one main predicate to be the main and other parts will revolve around it. This leads to sentences being less fragmented and focused on one verb.
   b. Cons – As it focuses on one word the sentence may have multiple verbs that might not be prioritized.

c. SRL parse
   a. Pro – This type of parsing allows for an easier view of the entire sentence. It also gives various interpretations of the sentence with focus on different verbs.
   b. Cons – It may be too simplified and not in depth enough to get other important parts other than the semantics and logical prepositions.