UNIVERSAL SEMANTIC REPRESENTATION GUIDELINE VERSION 4.2

Lexico-Conceptual Information

Lexico-Conceptual Information which is generally expressed by atomic words, multiword expressions or derived words are captured at this level. Currently, this level has information at 4 layers in USR. These layers (or rows) are (i) Concept row; (ii) Semantic Category; (iii) Morpho-semantic and (iv) speaker's view.

Sentence

rāma aura sītā ne dillī kā basa sṭapa ke āsapāsa apane choṭe bhāiyoṃ se hī bāta kara liyā 'Ram and Sita spoke to their younger brothers only in the surroundings of the bus-stop of Delhi.'

o Concept

Concepts are the semantic constructs. Each entry to the <u>concept row</u> is an unambiguous representation of a concept. Concepts can be simple or complex.

How are concepts represented?

The format: Root Concept ID

Why Concept ID?

Concepts could be ambiguous in nature. For example, the lexeme *padha* expresses two concepts: 'study' (as in *The boy studies in 7th standard*) and 'read' ('the boy reads a book'). To resolve this kind of ambiguity at the conceptual level, every concept gets a unique concept ID in the concept dictionary. Each unique concept is mapped with an appropriate equivalent from other languages. They are listed in the *concept dictionary*.

- $r\bar{a}ma$, $s\bar{\imath}t\bar{a}$ are persons, $dill\bar{\imath}$ is a place, thus they are named entities, which do not have concept IDs.
- *choṭā* 'younger', *bhāī* 'brother', *bāta kī* 'spoke' are concepts which are entity, event modifier of entity, They get concept IDs.
- apanā 'own' is pronominal, thus, do not get concept IDs.
- $b\bar{a}ta k\bar{t}$ 'spoke' and basa stapa 'bus stop' are complex concepts.
- $k\bar{t}$ is a verb and <u>TAM</u> string is separated from the root by '-' (hyphen)
- *āsapāsa* is a <u>Multi-word Expression</u>, which is represented with '+'.
- The event 'bāta kara liyā', *le* is a light verb and not represented as a concept in concept row.

- $h\bar{\iota}$ is a discourse particle, which is <u>not represented in concept row</u>.
- Different <u>symbols</u> have been used for representing some concepts.

| Original Sentence | rāma : | rāma aura sītā ne dillī kā basa sṭapa ke āsapāsa apane choṭe bhāiyoṃ se hī bāta kara liyā | | | | | | | | | | | | |
|----------------------|----------|---|--------------|-------|------------|-------------|-------------------|------------------------|-----------|-------------|------------|------------|-------------------------|------------|
| Concept | rām a | sītā | [con j_1] | dillī | bas a_1 | sṭap a_1 | [6-t at_1] | āsa +pā sa_ 1 | apa nā | choț ā_1 | bhā ī_1 | bāt a_1 | kar a_1- yā_ 1 | [cp_ 1] |

Semantic category

At the Lexico-conceptual level, the <u>Semantic category row</u> specifies the ontological information of a concept. Currently, four generic named entity categories are being annotated, namely-per(son), org(anisation), place and other. Apart from that, we mark anim(acy) category.

- $r\bar{a}ma$, $s\bar{t}t\bar{a}$ are per(sons) (Person is subsumed by Animate Entity).
- *dillī* 'delhi' is the name of a place.
- $bh\bar{a}\bar{i}$ 'brother' is an anim(ate) entity.

| Original Sentence | rāma | rāma aura sītā ne dillī kā basa sṭapa ke āsapāsa apane choṭe bhāiyoṃ se hī bāta kara liyā. | | | | | | | | | | | | |
|----------------------|------------------|--|-----------|-----------|------------|-------------|-------------------|--------------------|-----------|-------------|-----------------------|------------|---------------------|------------|
| Concept | rām a | sītā | [con j_1] | dillī | basa _1 | sṭap a_1 | [6-t at_1] | āsa+ pāsa _1 | apa nā | choț ā_1 | bhāī _1 | bāta _1 | kara _1-y ā_1 | [cp- 1] |
| Semantic Category | per/ mal e | per/ fem ale | | plac e | | | | | | | ani m/ mal e | | | |

o Morpho-Semantic

At the <u>Morpho-Semantic row</u> of the Lexico-Conceptual level, the speaker's *vivakṣā* to compare, causativize and adjectivize are encoded which, during language generation, are mostly represented in terms of a derived form of the root word that denotes the given concept.

■ *bhāiyoṃ*, plurality of brother information is encoded in morpho-semantic row to encode the plurality of the root concept *bhāi*.

| Original Sentence | rāma | aura sīt | ā ne dil | lī kā ba | sa sṭapa | ı ke āsa | pāsa ap | ane cho | oțe bhāi | yoṃ se | hī bāta | kara liy | ⁄ā. | |
|----------------------|------------------|--------------------|-----------|-----------|------------|-------------|-------------------|--------------------|-----------|-------------|-------------------|------------|---------------------|------------|
| Concept | rām a | sītā | [con j_1] | dillī | basa _1 | sṭap a_1 | [6-t at_1] | āsa+ pāsa _1 | apa nā | choț ā_1 | bhāī _1 | bāta _1 | kara _1-y ā_1 | [cp- 1] |
| Semantic Category | per/ mal e | per/ fem ale | | plac e | | | | | | | ani m/m ale | | | |
| Morpho-S emantic | | | | | | | | | | | pl | | | |

• Speaker's view

The fourth Lexico-conceptual layer is called <u>Speaker's view</u> which captures the speaker's desire to add focus, pay respect, be informal, express definiteness, doubt, desirability, likelihood or add power and solidarity. This row also captures shades of action as linguistically expressed by light verbs

- There is a def(inite) bus stop that the speaker has in mind.
- The speaker is certain that Ram and Sita spoke to their younger brothers only (however it might be the case that other people were present over there, but they did not speak to someone else except their younger brothers).
- The event is bāta kara liyā 'spoke' where *le* is the light verb. The string of light verbs are represented in the speaker's view row, as [shade: the string of light verbs with appropriate concept ID]

| Original Sentence | rāma | āma aura sītā ne dillī kā basa sṭapa ke āsapāsa apane choṭe bhāiyoṃ se hī bāta kara liyā. | | | | | | | | | | | | |
|----------------------|------------------|---|-----------|-----------|------------|-------------|-------------------|--------------------|-----------|-------------|-------------------|------------|---------------------|----------------------|
| Concept | rām a | sītā | [con j_1] | dillī | basa _1 | sṭap a_1 | [6-t at_1] | āsa+ pāsa _1 | apa nā | choț ā_1 | bhāī _1 | bāta _1 | kara _1-y ā_1 | [cp- 1] |
| Semantic Category | per/ mal e | per/ fem ale | | plac e | | | | | | | ani m/m ale | | | |
| Morpho-Se mantic | | | | | | | | | | | pl | | | |
| Speaker's View | | | | | | | def | | | | hī_ | | | [sha de:l e_1] |

Appendix

CONCEPT

Convention of symbols used in USR

| Concept | Symbol | Explanation | Example |
|--------------|--------|---|--|
| pronouns | \$ | All pronominals are flagged with '\$' and they do not get concept ID. | \$speaker, \$addressee, \$wyax, \$yax, \$kim, |
| Foreign word | ^ | When a concept is a foreign word, we do not transliterate it into wx notation. We use a flag of '^' symbol followed by the concept and concept ID. This symbol is used to mark it as a foreign word. | ^word_1 |
| Abbreviation | @ | When a concept is an acronym or abbreviation, we transliterate it into wx notation. We use a flag of '@' symbol followed by the concept and concept ID. This symbol is used to mark it as an acronym/ abbreviation. | @eic.sl.yU., @nAsA |

Complex Concepts

Complex concepts are specified within bracket []. Each complex concept defines a construction which is discussed in detail in the Construction row.

List of Complex Concepts:

| Complex Concept Type | Example |
|--------------------------------|--|
| Compound | ūrjā vikiraņa |
| Complex Predicate | snāna kiyā |
| Measuring expression | 10 ghaṃṭe, 6 phīṭa |
| Calendric expression | 5 julāī 2020 |
| Spatial expression | bhārata meṃ meghālaya rājya |
| Rate | 80 kimī prati ghaṃṭā , prati do ghaṃṭe meṃ eka bāra |
| Span | 1990 se lekara 2000 taka, aba taka |
| Conjunction (intra-sentential) | rāma aura mohana |
| Disjunction (intra-sentential) | roțī yā kelā |

• List of Noun compound

| Noun Compound Type | Example |
|--------------------|---------------------------|
| karmaXAraya | |
| wawpurusha | 2-tat dhana prāpta |
| | 3-tat cintā grasta |
| | 4-tat guru dakṣiṇā |

| | 5-tat śoka mukta |
|-----------|----------------------|
| | 6-tat dhūla-kaṇoṃ |
| | 7-tat viśva vitaraņa |
| xvanxa | peḍa-paudhoṃ |
| | |
| vahuvrIhi | [tāpa-abhāva] kṣetra |
| | |

Multi-word Expression (MWE)

Besides constructions, there are other lexical items which are represented as one concept and their members are not part of any construction, such as - frozen expressions. We represent them as MWE by joining with a '+' and they together are considered as one concept.

How do we represent Multi Word Expression in Concept row-

| MWE type | Example |
|-----------------------|--|
| Named Entity | banArasa+hindu+viSvavixyAlaya |
| Partial Reduplication | xina+prawixina_1 'everyday' |
| Full reduplication | 'kaBI kaBI' 'sometimes' will be kaBI_1 and dvitva in morpho-sem row |
| Echo-word | Asa+pAsa_1 'around' |
| Frozen expression | cAroM+Ora_4 'everywhere' eka+sAWa_1 'together' kriyA+kalApa_1 'activities' eka+jEsA_1 'similar' eka+samAna_1 'equal' digrI+selsiyAsa_1 |
| Phrasal expression | mote+wora+para_1 'generally' hAla+hI_1 'recently' |

Pronominal

| Pronominal | Concept row | Hindi pronominals | | | |
|---------------|-------------|------------------------|--|--|--|
| 1st person | speaker | maiṃ, hama | | | |
| 2nd person | addressee | tu, tuma, āpa | | | |
| 3rd person | wyax | yaha, vaha,yahāṁ,vahāṁ | | | |
| Interrogative | kim | kahāṃ, kaba, kyā | | | |
| Relative | yax | jo, jahāṃ, jaba | | | |

Example for all Pronouns

| | 1st Person | # tuma me | ere ghara āo | | | | | | | |
|---------------------------|------------------------|---|-----------------|---------|--------------|---------|----------|--------|---------|--------|
| | | 'You com | e to my home.' | , | | | | | | |
| | Concept | \$addresse | \$speaker | ٤ | ghara 1 | | | ā 1-o | 1 | |
| | | e | | | _ | | | | | |
| Personal | 2 nd Person | # tuma me | ere ghara āo | - | | | | | | |
| Pronoun | | | e to my home. | • | | | | | | |
| | Concept | \$address | | | ghara 1 | | | ā_1-o_ | 1 | |
| | | ee | | ſ | , <u>-</u> - | | | | | |
| 3 rd Person Pr | onominal | | usane nahīṃ k | hāvā. | | | | | | |
| | | 'He did not eat.' | | | | | | | | |
| Concept | | \$wyax | nahīņ | | khā_1-yā_1 | | | | | |
| Reciprocal P | ronoun | #hama ek | a dūsare se pyā | īra kar | ate haim. | | | | | |
| F | | | each other.' | | | | | | | |
| Concept | | | eka+dūsarā | | | | | pyāra | kara 1 | [cp_1] |
| l control | | *** | | | | | | | -tā hā | [-1-1 |
| | | | | | | | | _ | 1 | |
| | | | | | | | | | _ | |
| Reflexive Pro | onoun | #unhoṃne apanā kāma khuda kiyā | | | | | | | | |
| | | 'They the | mself did their | work' | | | | | | |
| Concept | | \$wyax | apanā | kāma | | khuda | | kara_1 | -yā_1 | |
| Interrogative | Pronoun | #rāma ky | ā khā rahā hai? | • | | | | • | | |
| Concept | | rāma | \$kim | | | | | khā_1- | 0_rahā_ | _hai_1 |
| Relative Pror | noun | #bhārata kā sabase dakṣiṇī biṃdu, jo iṃdirā biṃdu kahā jātā thā, san 2004 | | | | | | | | |
| | | mem jalamagna ho gayā | | | | | | | | |
| | | 'The southernmost point of India, which was known as Indira point, was | | | | | | | | |
| | | submerged in the water in the year 2004. | | | | | | | | |
| Concept | | _ | dakşinī bimdu | | | | san | jalama | gna ho | 1-gayā |
| • | | | 1 1 | - | | yā jātā | | r . | 1 | |
| | | | | | _ | r — | 04 | | | |
| | | | | \perp | | | <u> </u> | | | |

> Pronominal Reference to an Entity

Resolution of pronominal expression (i.e. determining which entity it refers to) happens at the discourse level through co-referencing.

List of Hindi interrogative pronoun

| kyā | what |
|----------------|--------------------|
| kauna | who |
| kahām | where |
| kahām se | From where |
| kaise | how |
| kisase | With whom |
| kaisā | how |
| kyoṃ | why |
| kaba | when |
| kauna sā | Which one |
| kise | To whom |
| kisakā/ kisakī | whose |
| kisa liye | why |
| kitanā/kitanī | How much/ how many |

Events

Concepts for verb forms consist of root and TAM info separated by '-'.'

- Verbs can be stative or action verbs.
- A complex predicate consists of a kriyāmūla and a kriyā They are represented as two different concepts with specific concept ID and the complex concept [cp_1] denotes their complex construction.
- Non-finite verbs are represented in root form without TAM specified in the concept row

Tense, Aspect, Modality (TAM)

Like content words, Tense-Aspect-Mood markers (henceforth, TAM string) can also be polysemous in nature. That is why they are also represented in the TAM concept dictionary with unique ids (See TAM Dictionary). A verb can be of tinganta (तिडन्त/finite) or kridanta (कृदन्त/non-finite, infinitival, verbal noun, participial) form.

Representation of TAM

| Verb | TAM in Concept | Representation Schema |
|---|---|--|
| karegā/ karegī/ karoge kiyā thā/ kiyi thī/ kiye the 'did' | kara_l -gā_1 kara_l -yā_th ā_1 | The default form of TAM occurs in 3 rd person singular form |
| karegā 'Will do' | kara_l -gā_1 | The TAM string is separated from the root by '-' (hyphen) |
| kiyā thā 'did' | kara_l -yā_th ā_1 | The multiword TAM string is written with an underscore |
| kara rahā hai/ kara rahī haī/ kara rahī ho 'is doing' | kara_1-0 _rah ā_hai_1 | When a bare form of a verb is followed by a TAM marker, we postulate a zero in the initial slot of the TAM string. |
| jā/ jāo/jāiye '(you) go.' | j ā _l -o_1 | For imperative sentences, TAM will be by default, 'o_1' |
| jāiyegā '(you) will please go' | jā_1 -o_2 | For future imperative sentences, TAM will be by default, 'o_2' |
| jāyeM '(let's) go' | jā_1 -e_1 | Default subjunctive TAM |

Example of eventualities representation

| Stative verb | #rāma acchā hai | | | | | | |
|-------------------|------------------|--|--------------------|-------------|------------|--|--|
| | 'Ram is good.' | 'Ram is good.' | | | | | |
| Concept | rāma | ācchā_1 | ācchā_1 hai_1-pres | | | | |
| Action verb | #rāma khīra kh | ā rahā hai. | ļ. | | | | |
| | 'Ram is eating r | ice-pudding' | | | | | |
| Concept | rāma | khīra_1 | khā_1-0_ra | ahā_hai_1 | | | |
| Complex Predicate | #rāma ne nadī n | ne snāna kiyā. | • | | | | |
| | 'Ram took a bat | h in the river.' | | | | | |
| Concept | rāma | nadī_1 | snāna_1 | kara_1-yā_1 | [cp_1] | | |
| Non-finite verb | #rāma ne skūla | jā kara khānā khā | iyā | | | | |
| | 'Ram ate going | to school.' | | | | | |
| Concept | rāma | skūla_1 | jā_1 | khānā_1 | khā_1-yā_1 | | |
| Non-finite verb | #gāyoṃ ke duha | #gāyoṃ ke duhane ke liye rāma ghara gayā | | | | | |
| | 'Ram went hom | 'Ram went home to milk the cows.' | | | | | |
| Concept | gāya_1 | duha_1 | rāma | ghara_1 | ja_1-yā_1 | | |

Modifiers of Entities

Adjectives or the modifier of entities could be an adjective, a quantifier or a cardinal/ ordinal number or an intensifier. They are represented in bare form and get concept id.

Some relations are listed below:

| Semantic Role | Example |
|-----------------|--|
| Modifier | purānā 'old', motā 'fat', sapheda 'white', |
| Quantifier | pratyeka 'every', kucha 'some', eka 'some' |
| Cardinal number | 1 'one', 2 'two' |
| Ordinal number | pahalā 'first', dūsarā 'second' |
| Intensifier | bahuta 'very' |

Examples of modifier of entities

| Adjective | #rāma p | rāma purāne dosta ke sātha bāta kara rahā thā. | | | | |
|-----------------|----------|--|----------------------|---------|---------|----------------------------|
| Concept row | rāma | eka_2 | purānā_1 | dosta_1 | bāta +k | ara_1-0_rahā_thā_1 |
| Quantifier | | #saba laḍake āeṃge | | | | |
| Concept row | saba_1 | laḍakā_1 | ā_1-gā_1 | | | |
| Intensifier | #bahuta | ı moțī billī dī | vāra para so rahī ha | ai. | | |
| Concept row | bahuta_ | _1 | | motā_1 | bīllī_1 | dīvāra_1 so_1-0_rahā_hai_1 |
| Cardinal Number | #rāma ro | #rāma roja do seba khātā hai. | | | | |
| Concept | rāma | | roja_3 | 2 | seba_1 | khā_1-tā_hai_1 |

| Ordinal Number | #rāma daśaratha ke prathama putra haim | | | | | |
|----------------|--|--|-----------|------------|---------|------------|
| Concept | rāma | | daśaratha | prathama_1 | putra_1 | hai_1-pres |

Modifiers of Events

Adverbials are the modifier of events which provide information on the manner of adverbs, negations etc. We represent manner adverb and negation in concept row with appropriate concept ID.

Examples of modifiers of events

| kriyā viśeṣaṇa (manner adverb) | #rāma bhāgakara āyā | | | | |
|--------------------------------|---------------------|---------|----------|--|--|
| Concept | rāma | bhāga_1 | ā_1-yā_1 | | |
| Negation | #rāma nahīm āeṃge | | | | |
| Concept | rāma | nahīṃ_1 | ā_1-gā_1 | | |

Phenomena

Postulation of kartā/ karma

• If kartā is missing in the original sentence when the sentence is in active mode, kartā will be added in the concept row.

| Original Sentence | rāma ne eka kelā khāyā aura khelane gayā 'Rama ate one banana and went to play. | | | | |
|-------------------|---|---|--------|------------|--|
| sent_1a | rāma ne eka kelā khāyā. | | | | |
| Concept row | rāma | 1 | kelā_1 | khā_1-yā_1 | |
| sent_1b | aura khelane gayā. | | | | |
| After postulation | aura vaha khelane gayā | | | | |
| Concept row | \$wyax khela_1 jā_1-yā_1 | | | | |

Sent_1b includes the concept id for 'vaha' (which is wyax) even though it is not there in the original sentence.

• In case of complement clauses, after segmentation we postulate 'vaha' (which is wyax)

| Origin al Sente nce | #hama pichale pāṭha meṃ paDa cuke haiṃ ki pṛṭhvī kī āntarika halacaloṃ ke kāraṇa paratadāra śailoṃ meṃ valana paDate haiṃ l 'We have studied in the last lesson how folds are formed in the rock strata by the internal earth movements.' | | | | | | | | | |
|------------------------------|---|------------------|--------|---------|----------------|-----|---------|--------------|----------------------------------|------------|
| Sent_I D_1a | #hama picha | le pāṭha meṃ | yaha p | oaḍha⊙ā | i cuke hai | ṃΙ | | | | |
| conce pt | speaker pichalā_1 pāṭha_1 wyax paḍha_1-0_ cuk hāi_1 | | | | kā_ | | | | | |
| Sent_I D_1b | #pṛthvī kī āntarika halacalom ke kāraṇa paratadāra śailom mem valana paḍhate haim l | | | | | | | | | |
| conce pt | pṛthvī_1 | āntarika_1 halac | | cala_1 | paratadā _1 | ira | śaila_1 | valan a_1 | paḍ ha_ 1-tā _hā i_1 | [cp _1] |

• Postulation of addressee as kartā in imperative sentences

| Original Sentence | ojona gaisa kā mahatva batāie 'Tell about the significance of Ozone gas.' | | | | | |
|----------------------|--|---|--|--|--|--|
| After postulation | āpa ojona gaisa kā mahatva batāie | | | | | |
| Concept | \$addressee | Gaddressee ojona_1 gaisa_1 mahatva_1 batā_1-o_1 | | | | |

Percentile

• Percentile will be rephrased and represented as following

| Original use | 78% or 78 pratiśata |
|--------------|------------------------|
| Rephrased | 100 bhāga meṃ 78 bhāga |

| Concept | 100, bhāga_1, 78, bhāga_1 |
|---------|---------------------------|
| | |

Spatio-directional terms

• Spatio-directional terms can have both nominal and relational usages in Indian languages which is discussed below. Nominal usage of these terms are represented in the concept row.

List of Spatio-directional terms in Hindi

| Term | Semantics | Example |
|-----------|--------------------------|---|
| andara | Spatial inside | rāma kāra ke aṃdara baithā hai. 'Ram is sitting inside the house.' |
| bāhara | Spatial outside | nāriyala kā bāhara kaṭhora hotā hai. 'The outside of the coconut is hard.' |
| āge | Directional ahead | kāra ke āge naṃbara pleṭa lagī huī hai. 'The number plate is attached infront of the car.' |
| sāmane | Directional front facing | mere sāmane eka nayā saca khula gayā 'A new truth was opened infront of me.' |
| pīche | Directional behind | mere pīche bāta mata karo. 'Do not talk behind me.' |
| ūpara | Directional on | laipatopa ko tebala ke ūpara rakhem. 'Keep the laptop on the table.' |
| nīce | Directional under | tebala ke nīce mūlya lebala cipakā dem. 'Stick the price tag under the table.' |
| dāyeṃ | Directional right | kone se dāhinī ora muḍeṃ. 'Take the right turn from the corner.' |
| bāyeṃ | Directional left | saḍaka ke bāīṃ ora eka kāra khaḍaī hai. 'A car is parked at the left side of the car.' |
| cāroṃ ora | Directional around | bekimga tre ke cārom ora thoḍaā makkhana lagāem. 'Apply some butter around the baking tray.' |
| bīca | Spatial between | samudra ke bīca mem eka nāva hai. 'There is a boat in the mid of the sea.' |
| pāsa | Spatial near | unake pāsa kucha dilacaspa kahāniyām haim 'He has some interesting stories.' |
| dūra | Spatial far | vaha dūra bhavişya dekha sakatā hai 'He can see the far future.' |
| nikata | Spatial near | |

Which items are not presented in the concept row

| Name of Category | <u>Example</u> |
|-------------------------------------|---|
| Connectives | aura 'and', yā 'or', kyoṃki 'because', isaliye 'therefore' |
| Discourse Particle | hī, bhī, sirpha |
| Comparative and superlative marker | - tara, - tama |
| Comparative and superlative word | sabse, adhika, jyādā, kama |
| vālā | When vālā comes as suffix and makes the concept adjective |
| Post-positions | ne, ko, para, |
| Light verb in V-V compound Verb or | khā le 'ate' |
| Raṃjaka kriyā | sajā de 'decorate' |
| Salutation or Respect marker | jī, srī, Mr., Ms |
| kim in yn_interrogative sentence | kyā āpane cāvala khāye? 'Did you eat rice?' |
| pratyeka/ prati as a part of a rate | prārambha meṃ tāpamāna baDne kī ausata dara pratyeka 32 mīṭara |
| construction/ in-every/ in-each | kī girāī para 1º selsiyasa hai |
| | |

Semantic Categories of Nouns

The <u>Semantic category row</u> specifies the semantic category of a concept.

- Currently, four generic named entity categories are being annotated, namely- per(son), org(anisation), place and ne. ne is the underspecified tag used for all such named entities which do not fall into the category of either person, place or organization. Apart from that, we mark *Time*, number, and animacy categories.
- This row also captures the gender information which is an ontological information. Only inherent gender is marked and grammatical gender is not marked in USR.
- For speaker and addressee if in singular number, gender will be marked as per the context
- For speaker and addressee, if in plural number, gender will be not specified. Such as, baccA 'children' will get only 'anim' information and no gender information will be annotated for them.
- wyax [3rd person pronominal form] will not get animacy or gender information as the information will be mapped from co-reference.

Semantic Category Row Information

| | Semantic Category | Tag | Example |
|-----------------|----------------------------------|------------------------|--|
| | Person name, a subset of animacy | per/male per/female | rāma 'Rama', karabi 'Karabi' |
| | Place (City, Continent) name | place | dillī 'Delhi' |
| Named Entity | Organization name | org | banārasa hindū yūnivarsitī 'Banaras Hindu University' |

| | Names of movies, medicine, cuisine, games, disease | ne | phauṭabala 'football' | |
|---------------|--|----------------|--|--|
| | day_of_week | dow | Śukravāra_1 'Friday' | |
| | month_of_year | moy | agasta_1 'August' | |
| | year_of_century | yoc | 1947, 2004, | |
| Time | date_of_month | dom | 15th | |
| entity | Century | era | 15 saxI will be written as 1500 | |
| Citaty | clock_time clocktime | | 5+baje_1 '5 o'clock' will be written as 5 with clocktime in semcat row | |
| | Season of a year | season | SIta_1 'winter', basanta_1 'spring' | |
| | Any special day | timex | Independence Day, Christmas Day | |
| Number entity | count | numex | 2 'two' | |
| animacy | living beings unless a proper noun | anim | Speaker, addressee, laḍakā 'boy', | |
| Gender | Gender information of living being with inherent gender | male female | sītā baccom ko phala detī hai 'Sita gives fruit to the children.' | |

Example of Semantic Category Row

| | | | <i>θ ι</i> | | | | | | | | | | |
|-------------|---------|---|------------|--------|---------|------|--------|------|------|----------|--------|-----|-----|
| Original | #arjuna | arjuna banārasa ke himdū viśvavidyālaya mem 10 agasta, 2021, śukravāra śāma ko 5 baje | | | | | | | | | | | |
| sentence | adhyāpa | aka ke rū | ipa mem n | iyukta | hue | | | | | | | | |
| concept | arjuna | banāras | hiṃdū+ | | agasta_ | 2021 | śukrav | śāma | 5 | adhyāpak | niyukt | ho_ | [cp |
| | | a | viśvavidy | 10 | 1 | | āra_1 | _1 | | a_1 | a_1 | 1-y | _1] |
| | | | ālaya | | | | | | | | | ā_1 | |
| Semantic | per/ | place | org | dom | moy | yoc | dow | | cloc | anim | | | |
| Category of | male | | | | | | | | ktim | | | | |
| Noun | | | | | | | | | e | | | | |

Morpho-Semantic Information

Morpho-Semantic Row Information

| Number | pl-plural | rāma kala kaī chātroṃ[pl] se mile 'Ram met many students yesterday.' |
|--------|---|---|
| 1 | Modifier derives from the root with affixation, such as -valā | pūrņa caṃdramā vālī rāta ko pūrņimā kahā jātā hai 'The night of the full moon is called Purnima.' |
| 1 * | | paramtu ye amtarnirbharatāom ke jaṭila jāla dvārā eka tamtra mem guṁthī huī haim |

| | modifies the <i>kartā</i> | 'But, this is closely integrated in a system through multiple networks of interdependencies.' |
|------------|--------------------------------------|---|
| compermore | Comparative degree marker | gaṃgā yamunā se jyādā laṃbī hai 'Ganga is longer than Yamuna' |
| comperless | Comparative degree marker | rāma mohana se kama buddhimāna hai. 'Ram is less intelligent than Mohan.' |
| superl | Superlative degree marker | gaṃgā bhārata kī s abase baḍī nadī hai Ganga is the largest river in India |
| dviwva | Full reduplication | ghara-ghara patra pahumcā [ghara_1 as concept] 'Letter reached every house.' |
| nic | Morphological causativization | māṃ ne bacce ko khānā khilāyā . 'The mother fed the baby.' |
| nienie | Morphological double causativization | māṃ ne rāma se bacce ko khānā khilavāyā 'The mother fed the baby by Rama'. |

Example

| Original Sentence | mohana bacce se kama buddhimāna hai. | | | | |
|-------------------|--------------------------------------|--|------------|---|--|
| Concept | mohana | mohana baccā_1 buddhimāna_1 hai_1-pres | | | |
| Index | 1 | 2 | 3 | 4 | |
| Morpho-sem | | pl | comperless | | |

Speaker's View Information

What to present in Speaker's viewpoint row

- A. Discourse Particles
- B. Light Verbs
- C. Determiners
- D. Honorific, non_honorific Pronominal forms
- E. Salutation marker
- F. Proximal and distal

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| Category | Role | Annotation Tag | Example |
|-----------|--------------------------------|--------------------------|--------------------------------|
| Discourse | Adding speaker's evaluation of | hI_1, hI_2, BI_1 etc. | sūrya camakatā bhī hai. |
| Particle | a situation or emotions- such | See here for more detail | 'The Sun shines too.' |
| | as inclusive, exclusive, | discussion | |
| | emphasis, undesirability | | |

| Definiteness | Definiteness or specificity | def | #beṭoṃ ko kheta meṃ bīja bonā |
|------------------------|---|---------------------------------------|--------------------------------------|
| | | | cāhie. 'The boys should sow the |
| | | | seed in the field.' |
| Light Verb or | Shade such as-volitionality, | Shade followed by string of the | ramaṇa sārā miṭhāī khā liyā . |
| raMjaka kriyā | intentional, inadvertent | verb-root and concept ID | 'Raman has eaten all sweets |
| | | See <u>here</u> for detail discussion | completely.' |
| 2 nd person | Distinction among three forms | Respect- āpa, informal- tū, | tū kahāṃ rahatā hai? |
| pronominal | of 2 nd person pronominal- tū, | | 'Where do you stay?' |
| forms | tūma, āpa | | āpa kahām rahate haim? |
| | | | 'Where do you stay?' |
| Salutation | Respect or address | respect | pradhānamaṃtrī jī abhī āe haiṃ. |
| marker | | | 'The honorable prime minister has |
| | | | just arrived.' |
| Deixis | Proximal and Distal of | proximal and distal | yaha kursī hai. |
| | temporal, spatial deixis and | | 'This is a chair' |
| | pronominal information | | |

Second person pronominal with speaker's view information

| Addressee | Informal | #तू कहाँ रहता है? #tū kahā rahatā hai? | | | | |
|-----------|--------------------|---|-----|-----------------|--|--|
| | Concept | addressee | kim | raha_1-tā_hai_1 | | |
| | Speaker's view row | informal | | | | |
| | Respect | # आप कहाँ रहते हैं? # āpa kahā rahate haim? | | | | |
| | Concept | addressee | kim | raha_1-tā_hai_1 | | |
| | Speaker's view row | respect | | | | |

Proximal and Distal Information for \$wyax

The concept row represents the concept of wyax

- Proximal is marked for *yaha*
- Distal is marked for *vaha*

List of Discourse Particle

| Meaning | Tag |
|-----------------------------|------|
| Distinction, distinguishing | hI_1 |
| fixture,fastness | hI_2 |
| A few | hI_3 |
| Right from | hI_4 |

| Meaning | Tag |
|------------------------------------|----------|
| Not onlybut also | hI_5 |
| Only | hI_6 |
| additional | aura_1 |
| also/Inclusive | BI_1 |
| Emphasis | BI_2 |
| Any | BI_3 |
| Yet/Even then | BI_4 |
| Still | BI_5 |
| only | kevala_1 |
| Modifier of adjective/ intensifier | sā_1 |
| turn-taker | to_1 |

List of shade or light verbs

| 1 5 | Semantic role |
|---|---------------|
| j ā _1 | completion |
| jā_2 | |
| dāla_1 | intensity |
| dāla_2 | |
| ho_1 | |
| pā_1 | |
| $\begin{array}{c} j\bar{a}_{-}1 \\ j\bar{a}_{-}2 \\ d\bar{a}la_{-}1 \\ d\bar{a}la_{-}2 \\ ho_{-}1 \\ p\bar{a}_{-}1 \\ de_{-}1 \\ \end{array}$ | |
| le_1 | |

> When not to treat as a light verb

There are some Verb+Verb combinations, where neither of the verbs act as light or main verb. Instead, both of them together contribute a meaning which is a series of events or the action itself with the manner of action. In such cases, we represent them as following -

isa bhārī patthara ko eka sthāna se dūsare sthāna taka **le jānā** kaṭhina hai 'carrying this heavy stone from one place to other is difficult'

In this verb+verb combination **le jānā**, neither le nor $j\bar{a}n\bar{a}$ has a main verb reading here or more importance in meaning contribution from one another, rather they together contribute a meaning which could be decomposed as $lekara j\bar{a}n\bar{a}$. We represent such concept as following - $le+j\bar{a}n\bar{a}_1$

Link to the main guideline

■ USR_GUIDELINES - V 4.2