Structure of ontologyIndex object

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Structure of extended ontologyIndex (Matrix+ontology) objects

```
setwd("~/my-papers-2017/phyloBayesHMM/ontoFast/ontoFast/data/Other-ontologies")
```

Original (most important)

- **ontology$name**, *Vector*, (original)
  - name of AO terms with IDs
    ```
    HAO:0000000
    [1] "anatomical entity"
    ```
- **ontology$id**, *Character*, (original)
  - AO ids of terms
    ```
    HAO:0000000
    [1] "HAO:0000000"
    ```
- **ontology$synonym**, *List*, (original)
  - unparsed synonyms
    ```
    $ SPD:0000003
    [1] "\"abdomen\" EXACT [SPD:Michalik]"
    ```

- **ontology$parents**, *List*, (original)
  - term's parents
    ```
    $ HAO:0000963
    [1] "HAO:0000221" "HAO:0000909"
    ```
- **ontology$children**, *List*, (original)
  - term's children
    ```
    $ HAO:0000994
    [1] "HAO:0001247" "HAO:0001275" "HAO:0001352"
    ```
- **ontology$is_a**, *List*, (original)
  - ```
    $ HAO:0000994
    [1] "HAO:0001247" "HAO:0001275" "HAO:0001352"
    ```
- **ontology$part_of**, *List*, (original); can be coded as **ontology$BFO:0000050**
  - ```
    $ HAO:0000994
    [1] "HAO:0001247" "HAO:0001275" "HAO:0001352"
    ```

My entities

- **ontology$parsed_synonyms**, *Character*
  - made out of **ontology$synonym** for matching
    ```
    HAO:0000000
    [1] "anatomical entity"
    ```
- **ontology$name_characters**, *Character*, **!!!INCLUDE IDs TO NAMES**
  - charcter statements
    ```
    [1] "Ocellar corona"
    ```

- **ontology$id_characters**, *Character*

  - chracters IDs automatically generated by ontoFast
    `[1] "CHAR:1"`
- **ontology$annot_characters**, *List*
  - character annotations with ontology terms
    `$ CHAR:373`
    `[1] "HAO:0001686" "HAO:0001351"`

To include

- **ontology$id_character_states**, *List*
  - `$ CHAR:373`
    `[1] "state:1" "state:2"`
- **ontology$name_character_states**, *List*
  - `$ CHAR:373`
    `state:1  state:2`
    `[1]  "absent"  "presnt"`
- **ontology$coding_character_states**, *List*, **!!!Maybe has to be changed**
  - `$ CHAR:373`
    `state:1  state:2 state:3 state:4`
    `[1]  "0"  "1" "-" "?"`
- **ontology$depends_upon**, *List*
  - CHAR:1 depends upon CHAR:2 states: 1 and 2; multiple states are allowed if e.g., CHAR:2 (1-green, 2-blue, 3-absent)
    `$ CHAR:1`
    `$ CHAR:1 $states` states of CHAR:1 which depend on CHAR:2
    `[1] "state1" "state2"`
    `$ CHAR:1 $depends_upon_char`
    `[1] "CHAR:2"`
    `$ CHAR:1 $depends_upon_states` statets of CHAR:2 which control CHAR:1
    `[1] "state1" "state2"`

- **ontology$controls_character**. *List*
  - opposite of **ontology$depends_upon**
    `$ CHAR:2` it means that CHAR:2 states 1 and 2 control CHAR:1
    `$ CHAR:2 $states`
    `[1] "state:1" "state:2"`
    `$ CHAR:2 $controls`
    `[1] "CHAR:1"`
- **ontology$character_matrix**, *data.frame*
  - including taxa