04 Ontology Visualization

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Contents

Load data

```
# Read in excel file
files <- list.files(paste0(here::here(), "/data/"),
                    "tjbrailey_psp_ontology.xlsx",
                    full.names = TRUE
                    )
files <- files[2]

read_excel_allsheets <- function(filename) {
  sheets <- readxl::excel_sheets(filename)
  x <- lapply(sheets, function(X) readxl::read_excel(filename, sheet = X))
  names(x) <- sheets
  x
}

out <- lapply(files, read_excel_allsheets)
basename(files)
```

```
## [1] "tjbrailey_psp_ontology.xlsx"
```

```
psp_ont <- out[[1]]$Sheet1
psp_ont <- dplyr::as_data_frame(psp_ont)
```

```
## Warning: `as_data_frame()` is deprecated, use `as_tibble()` (but mind the new semantics).
## This warning is displayed once per session.
```

```
# Select relevant variables
psp_ont_prep <- psp_ont %>%
  dplyr::select(child_0,
                child_1,
                provisions)

# Do the same for regional autonomy
```

```
reg_aut_ont <- out[[1]]$Sheet2
reg_aut_ont <- dplyr::as_data_frame(reg_aut_ont)
```

Define hierarchy

```
# Generate pathString as new column
psp_ont_prep$pathString <- paste("Power Sharing Provision",
                                 psp_ont_prep$child_0,
                                 psp_ont_prep$child_1,
                                 psp_ont_prep$provisions,
                                 sep = "|")

# Create list
psp_tree <- data.tree::as.Node(psp_ont_prep, pathDelimiter = "|")
print(psp_tree, limit = 15)
```

```
##                                    levelName
## 1  Power Sharing Provision
## 2   ¦--political system
## 3   ¦   ¦--general consocilationalism
## 4   ¦   ¦   ¦--grand coalition
## 5   ¦   ¦   ¦--mutual veto
## 6   ¦   ¦   ¦--proportionality
## 7   ¦   ¦   ¦--segmental autonomy
## 8   ¦   ¦   ¦--coalition cabinets
## 9   ¦   ¦   ¦--bicameralism
## 10  ¦   ¦   ¦--proportional representation
## 11  ¦   ¦   ¦--organized interest groups
## 12  ¦   ¦   ¦--rigid constitution
## 13  ¦   ¦   ¦--judicial review
## 14  ¦   ¦   ¦--direct democracy
## 15  ¦   ¦   °--... 7 nodes w/ 0 sub
## 16  ¦   °--... 5 nodes w/ 26 sub
## 17  °--... 2 nodes w/ 85 sub
```

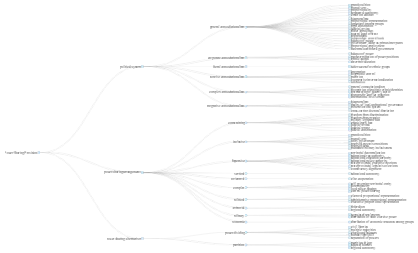
```
# Do the same for regional autonomy only
reg_aut_ont$pathString <- paste(reg_aut_ont$provision,
                                reg_aut_ont$concept,
                                reg_aut_ont$citation,
                                sep = "|")
reg_aut_tree <- data.tree::as.Node(reg_aut_ont, pathDelimiter = "|")
print(reg_aut_tree, limit = 15)
```

```
##                                                                    levelName
## 1  regional autonomy
## 2   ¦--partition
## 3   ¦   °--Berg, Eiki, and Guy Ben-Porat. (2008).
## 4   ¦--territorial power-sharing
## 5   ¦   °--Hartzell, C., & Hoddie, M. (2007).
## 6   ¦--dispersive power-sharing
## 7   ¦   °--Strøm, K. W., Gates, S., Graham, B. A. T., & Strand, H. (2017).
## 8   ¦--complex power-sharing
## 9   ¦   °--Wolff, Stefan. (2009).
```

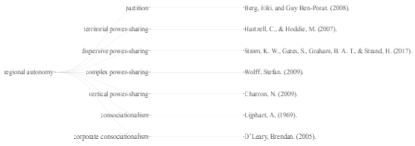
```
## 10  ¦--vertical power-sharing
## 11  ¦   °--Charron, N. (2009).
## 12  ¦--consociationalism
## 13  ¦   °--Lijphart, A. (1969).
## 14  °--corporate consociationalism
## 15      °--O'Leary, Brendan. (2005).
```

Visualizations

```
# Pepare list for visualization
psp_list <- data.tree::ToListExplicit(psp_tree, unname = TRUE)
psp_ontology_vis <- networkD3::diagonalNetwork(psp_list,
                            fontSize = 14,
                            textColour = "black",
                            opacity = 0.7,
                            width = 1500,
                            height = 1200)
# Visualize.
psp_ontology_vis
```



```r
# Do the same for regional autonomy
reg_aut_list <- data.tree::ToListExplicit(reg_aut_tree, unname = TRUE)
reg_aut_ontology_vis <- networkD3::diagonalNetwork(reg_aut_list,
                            fontSize = 50,
                            textColour = "black",
                            opacity = 0.7,
                            width = 1500,
                            height = 1200)
reg_aut_ontology_vis
```



Save