World Maps

December 08, 2021

Session Info

Give the session info (reduced).

```
## [1] "R version 4.0.5 (2021-03-31)"
```

```
## [1] "x86_64-apple-darwin17.0"
```

Load Libraries

If the libraries are not installed yet, you need to install them using, for example, the command: install.packages("ggplot2").

```
library(readr)
library(ggmap)
library(maps)
library(gridExtra)
library(ggrepel)
library(RCurl)
```

Give the package versions.

```
##      RCurl    ggrepel  gridExtra       maps      ggmap    ggplot2      readr
## "1.98-1.5"    "0.9.1"      "2.3"    "3.3.0"    "3.0.0"    "3.3.5"    "1.4.0"
```

Load the language info

Load language info file directly from the github repo.

```
languages <- as.data.frame(read_csv("https://raw.githubusercontent.com/100LC/100LC/master/LangInfo/langI
```

Simple Stats

```
length(unique(languages$iso639_3)) # number of languages according to iso
```

```
## [1] 100
```

```
length(unique(languages$glottocode)) # number of languages according to glottolog
```

```
## [1] 100
```

```
length(unique(languages$family_id)) # number of language families according to glottolog
```

```
## [1] 61
```

```
unique(languages$macroarea_glotto) # number of macroareas according to glottolog
```

```
## [1] "Eurasia"       "Papunesia"     "South America" "Africa"
## [5] "North America" "Australia"
```

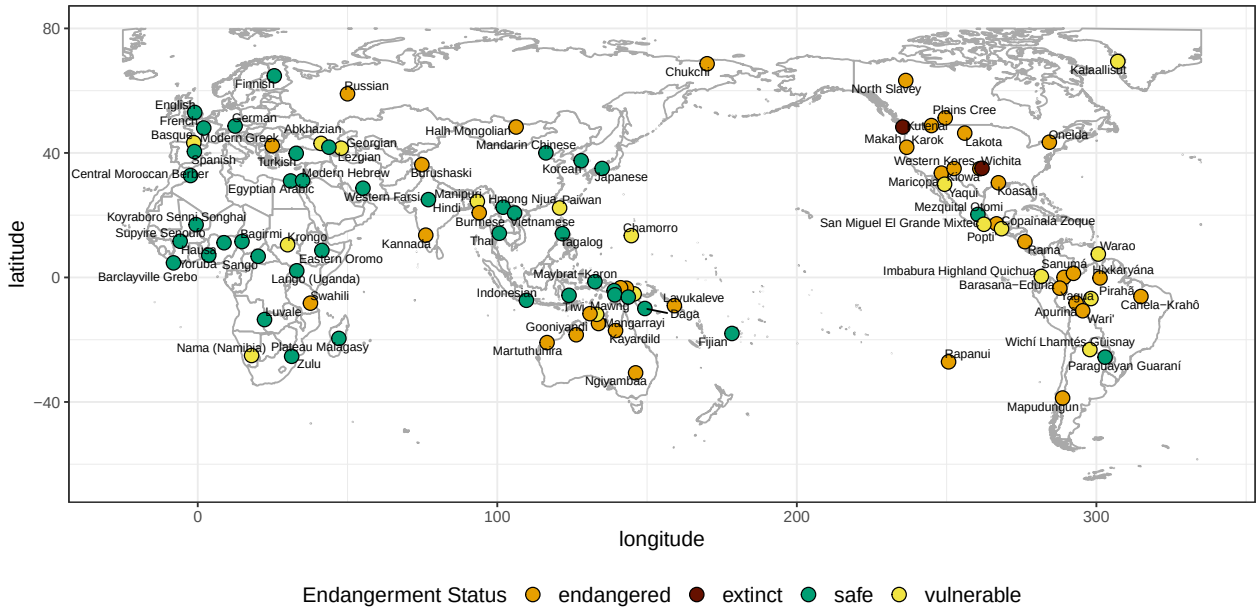
Pre-Processing

```
# add 360 to longitudes for languages with longitudes < -25
# (this is necessary to create a Pacific centered map)
languages$longitude_glotto[languages$longitude_glotto < -25] <-
  languages$longitude_glotto[languages$longitude_glotto < -25] + 360
# collapse status information into fewer factors
languages$status[languages$status %in% c("definitely endangered", "severely endangered", "critically en
```

World Map

World maps with endangerment status information from Glottolog.

```
# create world map
world <- map_data("world", wrap = c(-25, 335))
status.map <- ggplot() +
  geom_polygon(data = world, aes(x = long, y = lat, group = group),
               fill = "white", colour = "darkgrey") +
  geom_point(data = languages, aes(x = longitude_glotto, y = latitude_glotto,
                                   fill = status),
             alpha = 1, size = 3.5, pch = 21) +
             # select colours manually to be color blind safe
             scale_fill_manual(values = c("#E69F00", "#661100", "#009E73", "#F0E442")) +
  geom_text_repel(data = languages, aes(x = longitude_glotto, y = latitude_glotto,
                                        label = name_glotto), size = 2.5,
                  box.padding = unit(0.1, 'lines'), force = 0.5) +
  scale_y_continuous(limits = c(-65, 80)) +
  labs(x = "longitude", y = "latitude", fill = "Endangerment Status") +
  theme_bw() +
  theme(axis.title.x = element_text(size = 12),
        axis.title.y = element_text(size = 12),
        title = element_text(size = 12),
        legend.title = element_text(size = 12),
        legend.text = element_text(size = 12),
        legend.position = "bottom")
status.map
```



Save to file.

```
ggsave("~/Desktop/worldMap_100LC.pdf", status.map,
       dpi = 300, scale = 1, width = 12, height = 6, device = cairo_pdf)
```