Automatic Sampling and Analysis of YouTube Data

Excursus: Retrieving Video Subtitles

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Retrieving *YouTube* Video Subtitles

- Instead of transcribing a video, you can retrieve its subtitles via the *YouTube* API
- What research would you conduct with video subtitles?

Types of *YouTube* Subtitles

- Videos with automatically created subtitles (*ASR*)
  - Always in English, even if video language is not English
  - Can be downloaded, but text quality can be bad (especially if translated)
- Videos without any subtitles
  - Not sure if even possible because there always seems to be an *ASR*
- Videos with more than one set of subtitles
  - Examples: *ASR* and regular subtitle, more than one language, more than one subtitle for the same language
  - Can be downloaded, but subtitle for analysis must be selected

Disclaimer

Due to a change to the *YouTube* API, the `tuber` function for retrieving video subtitles only work for videos that were created with the same account as the app used for the API access (see this closed `tuber` issue on GitHub). We will still discuss this function, but recommend that you use the `youtubecaption` package for collecting subtitles for videos that you have not created yourself.

Retrieving Video Subtitles with `tuber`

First, we need to get the list of subtitles for a video.

```
library(tuber)

caption_list <- list_caption_tracks(video_id = "nI_OfkQOG6Q")
```

Note: The `tuber` function `list_caption_tracks()` has an API quota cost ~ 50.

Retrieving Video Subtitles with `tuber`

Next, we need to get the ID of the subtitles we want to collect.

```
ID <- caption_list[1,"id"]
```

Note: You can adapt the number to select the subtitle that you want (ASR = automatic sub)

Retrieving Video Subtitles with `tuber`

After that, we need to retrieve the subtitles and convert them from raw to char.

```
text <- rawToChar(get_captions(id = ID, format = "sbv"))
```

Now we can save the subtitles to a subtitle file.

```
write(text, file = "Captions.sbv", sep="\n")
```

Converting Subtitles

- Subtitles come in a special format called SBV
- The format contains time stamps etc. that we do not need for text analysis
- We can read the format with the package `subtools`

Converting Subtitles

```
library(subtools)

subs <- read_subtitles("Captions.sbv", format = "subviewer")
```

With `subtools`, we can also retrieve the text from the subtitles.

```
subtext <- get_raw_text(subs)
```

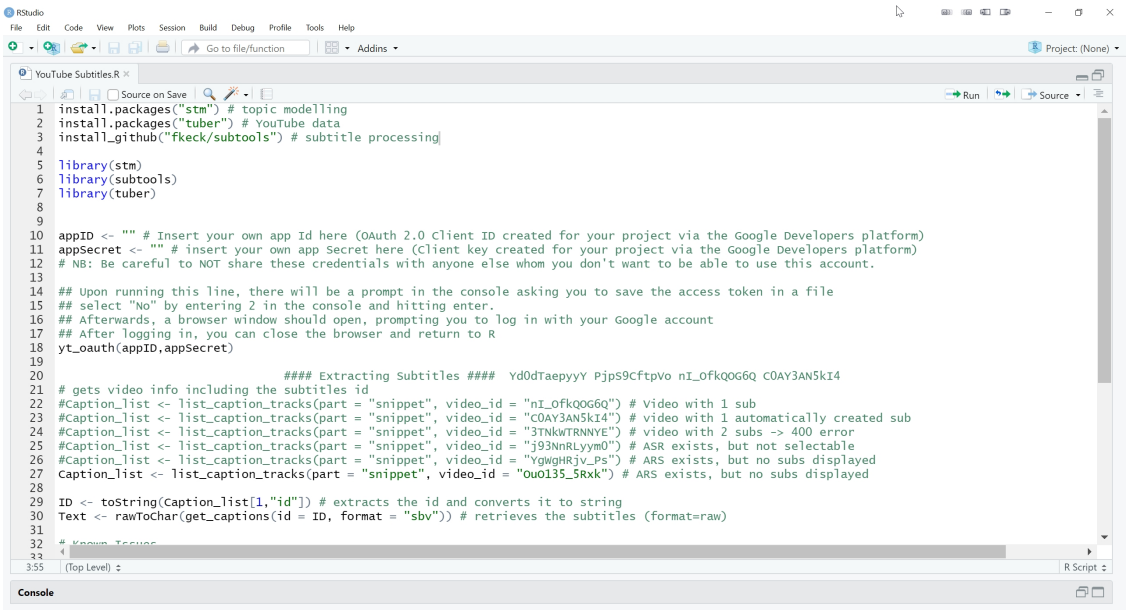
Now the text is ready for further analysis (see the previous sessions for examples).

Retrieving Video Subtitles with `youtubecaption`

- Alternatively, you can retrieve captions with the package `youtubecaption`
- **Pros**:
  - No credentials necessary, therefore no quota reduction
  - Subtitles are automatically converted into a dataframe including texts and timestamps, so no manual conversion is needed
- **Cons**:
  - If there is more than one subtitle version per language, there is no way to select a specific one
  - You need to install *Anaconda*

Time for a Short Live Demo

```
include_graphics("./Images/youtubesubtitles.jpg")
```



Note: You can find the code for collecting subtitles for *YouTube* videos in the `YouTubeSubtitles.R` file in the `scripts` folder.

Any (further) questions?