

...Happy New Year to all of you! 2020 is here and it seems that we are being overwhelmed by more and more irrationality, especially *fake news* and *conspiracy theories*.

In this post, I will give you some indication that this might actually not be the case (shock horror: good news alert!). We will be using *Google Trends* for that: If you want to know what Google Trends is, learn how to query it from within R and process the retrieved data, read on!

Google delivers nearly 90% of all search queries worldwide (which might be a problem anyway but that is not our concern in this post)! Wouldn't it be interesting to see what people search for on Google and how that varies over time: Google Trends provides just that, it offers a glimpse into Google's big database to observe the ups and downs of any search term you are interested in since 2004! And the best thing: it is completely free!

...and of course, there is an R package for that too: the `gtrendsR` package (on CRAN). We are creating a little function which retrieves global Google search data from 2004 till today, plots them and calculates its growth rate just for illustrative purposes to show how easy we can use those data for further analyses:

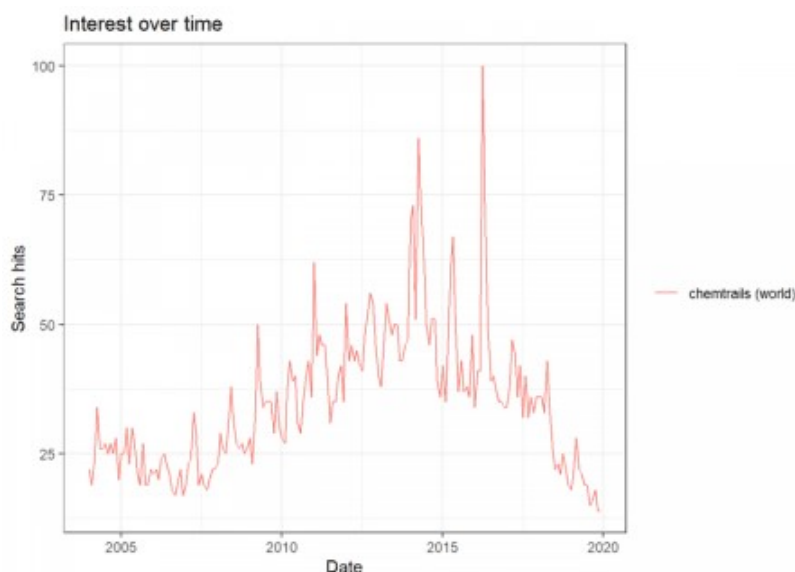
```
library(gtrendsR)

google_trends <- function(keyword) {
  pres_data <- gtrends(keyword = keyword, time = "all", onlyInterest = TRUE)
  plot(pres_data)
  hits <- pres_data$interest_over_time$hits
  last <- length(hits)
  round((mean(hits[(last-10):last]) / mean(hits[1:10]) - 1) * 100) # percentage
  rise
}
```

Now, we are going to use this function to find out how certain search terms for well-known [conspiracy theories](#) developed over time.

Let us start with "chemtrails", the conspiracy theory that states that the condensation trails of planes are some kind of chemical or biological agent that is being sprayed for nefarious purposes to harm the general public. Well, I myself think that it isn't obviously the cleanest air that comes out of big airplane turbines but the claim that there is some hidden agenda implemented by some evil forces is just ludicrous. Let us see how this search term develops over time (all data were obtained January 1, 2020):

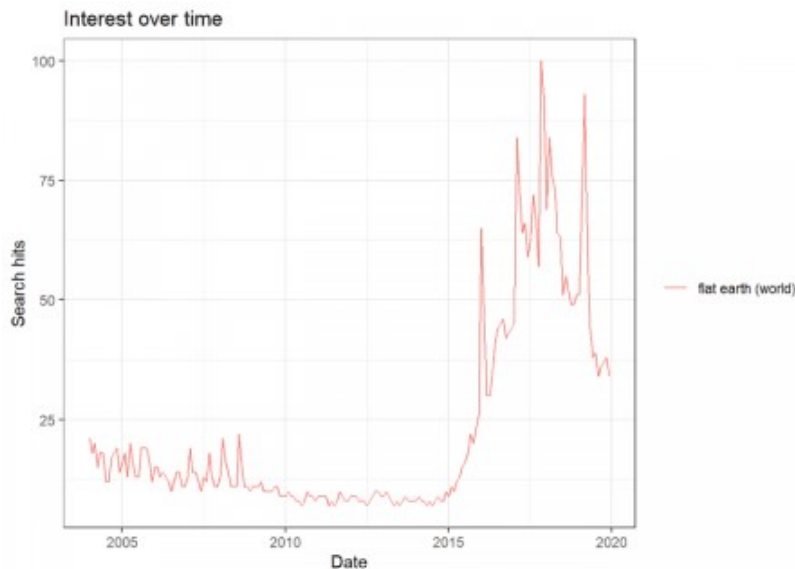
```
google_trends("chemtrails")
```



This seems to be good news, with a peak around 2016 fewer and fewer people seem to be interested in this kind of stuff (perhaps they are brainwashed by those chemicals so that they don't google them anymore 🤔)

Another well-known conspiracy theory is the “flat earth”, the belief that we don't live on a globe but that the earth is literally flat! I cannot even imagine how one can believe such a thing but obviously, there are people out there (called “flat earthers”)... Let us have a look:

```
google_trends("flat earth")
```

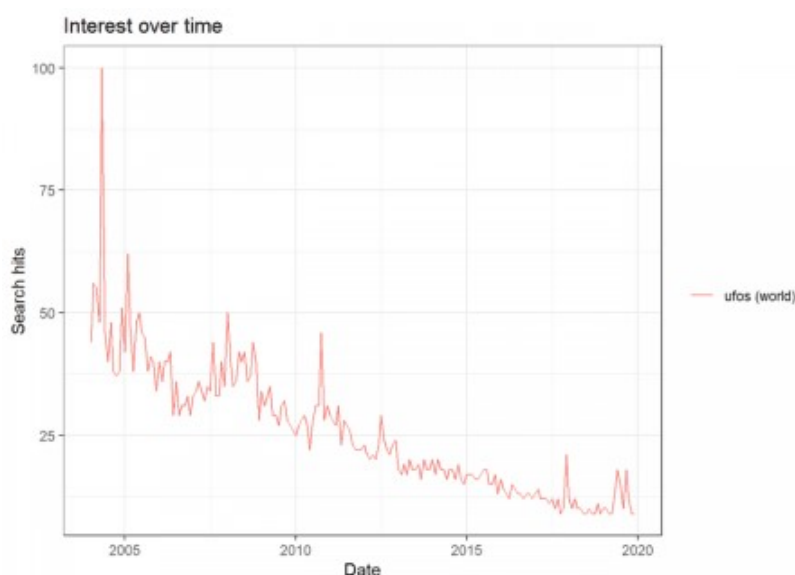


```
## [1] 182
```

It used to be on the decline but all of a sudden since 2015 it was trending strong but fortunately it seems to be in sharp decline again. Just to be clear: those numbers are always relative because Google doesn't give any absolute numbers and not everybody who searches for this stuff is a believer... yet the more people search for it the more this topic is, well, sought after.

Another big area where conspiracy theories thrive is the topic of *extraterrestrials*. Let us see how the search for “Unidentified Flying Objects” a.k.a. “UFOs” is trending:

```
google_trends("ufos")
```

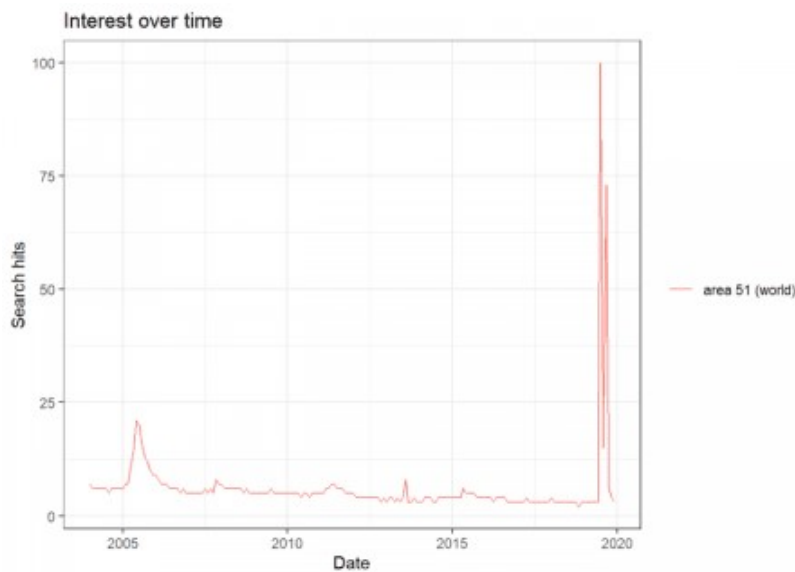


```
## [1] -77
```

Fewer and fewer people seem to be interested... one special place in the minds of many conspiracy theorists takes the infamous “Area 51”, a highly classified United States Air Force facility located in Nevada.

Here the US government hides, so the story goes, evidence of aliens who have visited earth. Let us have a look:

```
google_trends("area 51")
```



```
## [1] 277
```

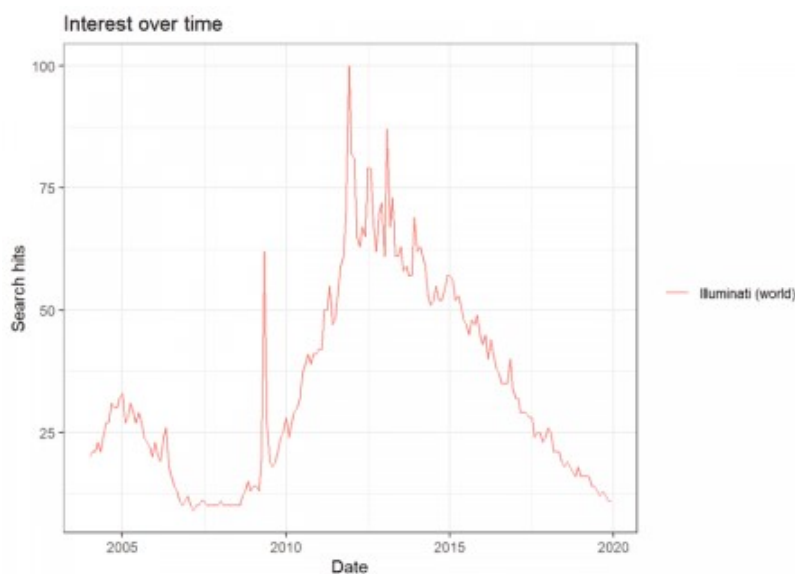
This one is interesting because of the huge peak in 2019. What had happened? Another hoax, this time a real one: an anonymous Facebook post called for the storming of the area end of September 2019 to look for extraterrestrial life and the post went viral. [Wikipedia](#) knows how it ended:

While the event was intended as comedic, some took it seriously, and traveled to areas surrounding the facility. Beginning on September 19, the day before the planned event date, people were reported to be showing up and camping around Rachel in preparation for the raid.

The Lincoln County Sheriff stated about 1,500 people showed up at the festivals, while over 150 people made the journey over several miles of rough roads to get near the gates to Area 51. While only one person ever crossed the boundary, receiving a warning, six others were arrested for crimes including public urination, alcohol related offences and indecent exposure.

Now, many of those conspiracy theories boil down to dark forces that act in the shadows... but who are they? Especially through the books (and subsequent movies) by Dan Brown one name was brought into the limelight (literally so to speak):

```
google_trends("Illuminati")
```

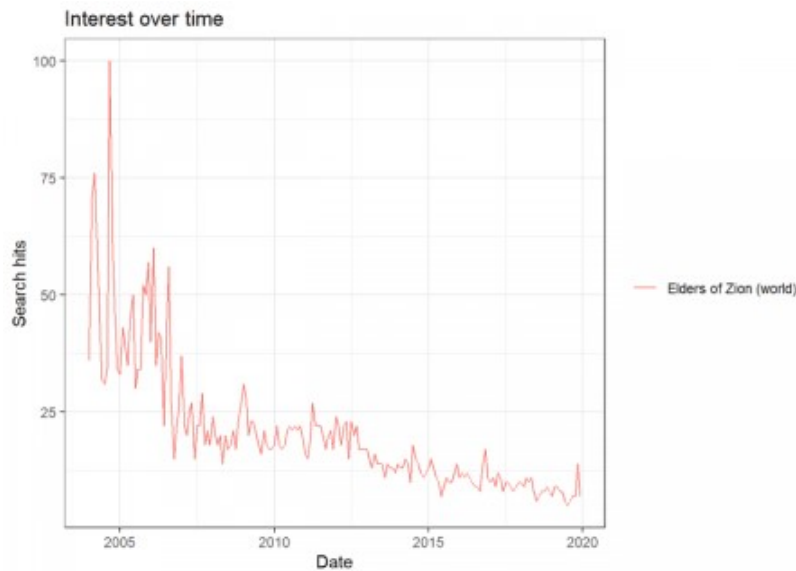


```
## [1] -45
```

We can clearly see a peak in 2009 which should be due to the film. Around 2012 there is a huge surge (does anybody know why? Please leave your ideas in the comments below!) and from there on a constant decline. All together we can see a decline of 45% since 2004.

Finally, we come to a particularly disgusting variant of this kind of conspiracy theories, those that are based on *antisemitism*. “The Protocols of the Elders of Zion” is a fabricated text purporting to describe a Jewish plan for world domination. It was first published in Russia in 1903 and after that translated into many languages. Among other things, it was used by the Nazis to justify the millionfold genocide of the Jews. So let us see how many people are interested in this kind of dubious stuff:

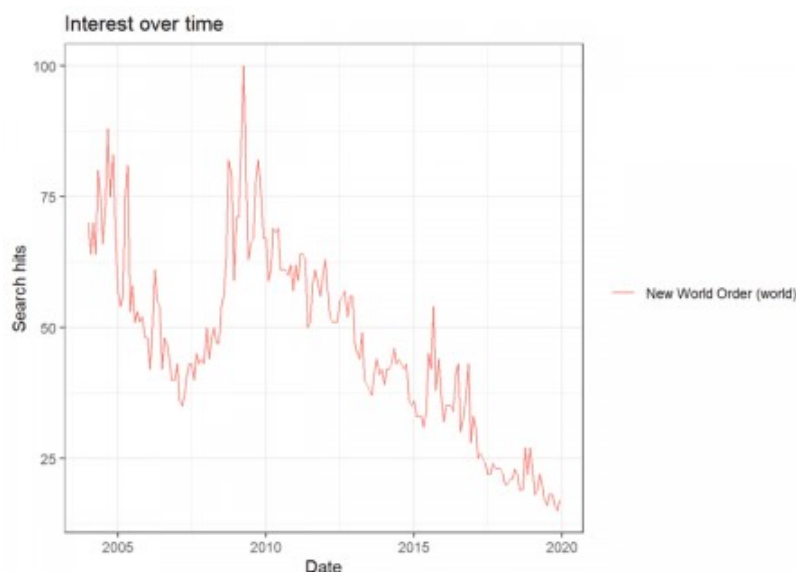
```
google_trends("Elders of Zion")
```



```
## [1] -86
```

It is good to see that interest seems to go down considerably! A more recent manifestation of this idea is what is called the “New World Order (NWO)”. It is often also heavily associated with antisemitic undercurrents. Let us see:

```
google_trends("New World Order")
```



```
## [1] -75
```

After some peaks in the period between 2008 and 2010, there is a pronounced decline, 75% since 2004!

The so-called “New World Order” seems pretty old now... and that's a good thing!

So, all in all, it seems that, at least for the terms we tested here, interest goes down, often considerably. I would think that this could at least be an indication that people are, on average, getting more rational... in contrast to the pessimistic trope that we are overwhelmed by *fake news* and *trolls*.

What do you think about the analysis above? Do you have any sources that could corroborate or falsify this hypothesis? And do you have other interesting search terms that reveal more interesting patterns? Please put everything in the comments below!