March 29, 2012

Bible Visualization

Last year I compiled a collection of interesting visualizations of narrative text. In searching for such visualizations I happened across many that focused on the Bible - enough for a separate blog post; this one.

BibleViz

Chris Harrison has produced a set of three Bible visualizations. The first is an arc diagram that visualizes cross-references between books of the Bible. The bar chart at the base of the diagram represents the number of verses in each book. The arcs represent cross-references between books with arc height and colour encoding the distance between the pairs of books connected by the arcs.

Chris also visualized the "social network" of people and places mentioned in the Bible. A graph was formed with people and places as nodes, and edges between pairs of nodes (people/places) mentioned in the same verse. A clustering algorithm was used to layout the nodes. Labels are scaled according to the number of connections they have.
Chris also visualized where in the Bible each person or place is mentioned. The full text of the bible is overlaid with labels for each person or place name. Lines connect each name label to the positions in the text where the name is mentioned. The labels are scaled according to the number of mentions, and positioned at the average point of their mentions.

OpenBible

Inspired by Chris Harrison's work, OpenBible has also produced a similar diagram visualizing cross-references between books of the Bible.
OpenBible also provides an interactive tool for visualizing biblical cross-references. At the highest level, the cross-references are visualized using a matrix.

You can click on the matrix to drill-down to a verse-by-verse visualization of the cross-references between a pair of books.
OpenBible also has two visualizations of the "ups and downs" in the Bible. Sentiment analysis was used to determine the mood (positive or negative) of each verse. These sentiment scores were then smoothed (150-verse moving average) to provide a more coherent result, and then plotted radially with red and black depicting negative (down) and positive (up) sentiment, respectively.

The same analysis has been applied with less smoothing (5-verse moving average) and laid out vertically as a set of sparklines to show the changing mood within each book.
Gospel Spectrum

Ahn Dang produced a visualization of the narrative of Jesus’ life as described in the Gospels of Matthew, Mark, Luke and John. A simple bar chart is used to plot the narrative with a bar for each event in the story of Jesus’ life. Bar length and brightness denote the number of verses and gospels, respectively, describing each event. For example, the long bright blue bar to the right indicates that 56 verses describe “Peter’s denial”, and is mentioned in all four gospels.

As well as the combined view, the gospels can be visualized individually, using a distinct colour for each.
Similar Diversity
Designers Philipp Steinweber and Andreas Koller produced an infographic focused on not just the Bible but also the holy books of four other religions: Buddhism, Hinduism, Islam and Judaism. Their visualization was derived from text analysis in order to avoid bias on the part of the designers. As the project's title suggests the visualizations are meant to show the similarities and differences between the holy texts.

The graphic comprises several different data visualizations. The arc diagram shown below visualizes the 41 most frequent characters (arranged alphabetically). Names (and arcs) are scaled according to frequency with which characters are mentioned; the coloured arc above each name shows the relative frequency for each holy book, e.g. Allah appears only in the Qur'an.

Below each character is a bar chart that visualizes each character's "activities" (determined from adjacent verbs in the text). These are coloured according to their relative frequency in each holy book and, scaled (height) by total number of occurrences. The activity vectors are used to calculate similarity between pairs of characters. This similarity is visualized by the grey arcs connecting characters. The weight and thickness of the arcs encodes the similarity coefficient.

Bible vs. Qur'an
Pitch Interactive focused on comparing the Bible with the Qur'an on the basis of word frequency. Enter a keyword and verses containing it are highlighted in the Old & New Testaments of the Bible and in the Qur'an. You can opt for exact matches and the inclusion of synonyms.
Exegesis

Kushal Dave used Google to count the number of times each verse in the Bible is quoted on the Web. He then created Exegesis to visualize these counts. Each verse is represented by a bar. Darker bars represent verses that are quoted more often. The visualization allows you to search for particular phrases and words. The image below shows the visualization with verses highlighted if they contain the word "Satan".

Many Eyes

There are many Bible visualizations on IBM’s Many Eyes. One of Many Eyes’ unique visualizations is the Phrase Net, which I’ve used below to visualize usage of the phrase “x beget y”, that is, the "patriarchy" in the Old Testament (click on the visualization to interact with it - requires Java).

If you’re aware of any other visualizations of the Bible or other holy books then please leave a comment below.
VisLives!: Bible Visualization

http://www.vislives.com/2012/03/bible-visualization.html

5 comments

Add a comment

Top comments

Tomas Bachmayer shared this 2 years ago - Shared publicly

luis erharter 8 months ago - Shared publicly

motervation 2 years ago

Chris Pudney 2 years ago

Unknown 2 years ago

Add a comment

Newer Post
Home
Older Post

Subscribe to: Post Comments (Atom)

Nice collection! So, have you ever come across a Flow Map of the Gospels? Like the one made popular by Tufte (http://www.edwardtufte.com/tufte/minard), and then emulated awesomely by xkcd (http://xkcd.com/657)? I've been looking for one for some time now, but surprisingly have not found one.

That is one of my favourite XKCDs - more here http://www.vislives.com/2011/10/xkcd-visualizations.html I've not seen one for the Gospels (or any other book) but it did inspire my own effort to visualize David Foster Wallace's "Infinite Jest" http://www.vislives.com/2011/12/infinite-jest-visualization.html

Very interesting, awesome!