



Big Data for Reaching a Big World

High-tech refinements for mission outreach

BY GERMÁN H. ALFÉREZ

There is a new voice in the public square. A new voice in business boardrooms. A new voice from the world of research and technology. It is the voice of big data. And whether you have been listening or not, what big data has been saying points to a great breakthrough for mission-minded Christians.

Culturomics and the Digital Universe

Big data is a term that can be used to describe data sets so large and complex that they become difficult to work with using standard techniques.¹ The digital universe is huge, doubling in size every two years. By 2020 it will reach 44 zettabytes, or 44 trillion gigabytes.² This fact has motivated companies and scientists to find new ways to understand big data in the digital universe. Organizations can use big data to make more intelligent decisions. Big data is definitely the next big thing, so much so that people are saying big data is the new oil.³

Big data opens new opportunities for the Seventh-day Adventist Church. With the great amount of internal and external data, it is possible to look for hidden patterns that can help us understand ourselves.

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Beyond that, this big data review gives us a better appreciation for how the world behaves and has been trending in relation to various tenets of our biblical faith. This in turn may educate us on how we can be most intelligent and relevant about mission.

In this study the computational data analysis was based on *culturomics*, which is the application of high-throughput data collection and analysis to the study of human culture.⁴ The full data set used in the experiments is available for download at <https://books.google.com/ngrams>. This data set is composed of digitized texts containing about 4 percent of all books ever printed between 1800 and 2008. The Google Ngram Viewer was used to visualize the results. This quantitative research focused on books written in English. However, books written in Spanish were analyzed in one of the experiments.

Our Fundamental Beliefs in Culture

Bible—As Seventh-day Adventists, we accept the Bible as our only creed. We stand firmly on the Protestant *sola scriptura* principle, and hold a group of Fundamental Beliefs to be the teachings of the Holy Scriptures. Figure 1 shows the results of analyzing the concepts of church, religion, and the Bible. In this figure it is possible to see a marked downtrend in church and religion.

Church and Religion—Although the words “church” and “religion” were frequently mentioned in the early nineteenth century (especially in the years of the Second Great Awakening), Figure 1 shows a decreasing interest on these topics in the twentieth century. Significantly, the graph also shows increased mention of terms related to the Bible during the first years of the Adventist movement. This interest decreased during the twentieth century.

Figure 2 shows a contrasting situation. While mention of religion-related topics decreased in twentieth-century books, as shown in Figure 1, secularization has been growing rapidly. Note, though, that Figure 1 does show slightly increasing attention to religion-related topics from the 1980s.

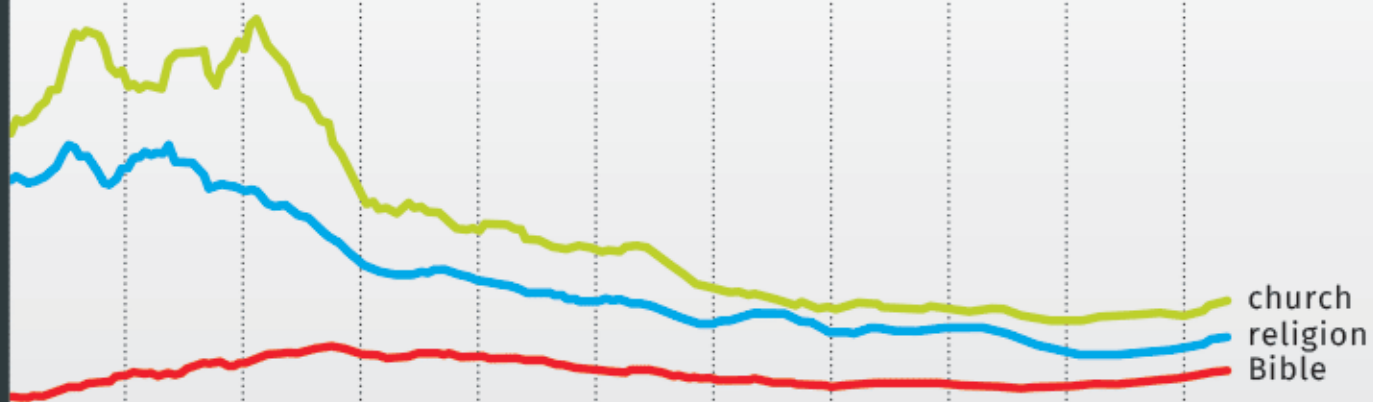
God—We Seventh-day Adventists believe that God loves us. In our own big data sampling of published works from the last 200 years, Figure 3, however, shows decreased attention to God and Jesus Christ. Although there is an uptrend from around 1970 in the line for the word “God,” it is difficult to conclude that it is the Bible’s God. The Holy Spirit (or Holy Ghost) is also not much referenced in this period.

Creationism—In six literal days the Lord made the heavens and the earth, and all living things upon the earth, and rested on the seventh day. However, as demonstrated in Figure 4, the theory of evolution has surpassed creationism from the very beginnings of our church (which was formally established in 1863). Despite this fact, creationism rises remarkably from around the year 1980, presumably attributable to movements advocating scientific creationism and intelligent design.

FIGURE

1

Church, Religion, and Bible Trends



FIGURE

2

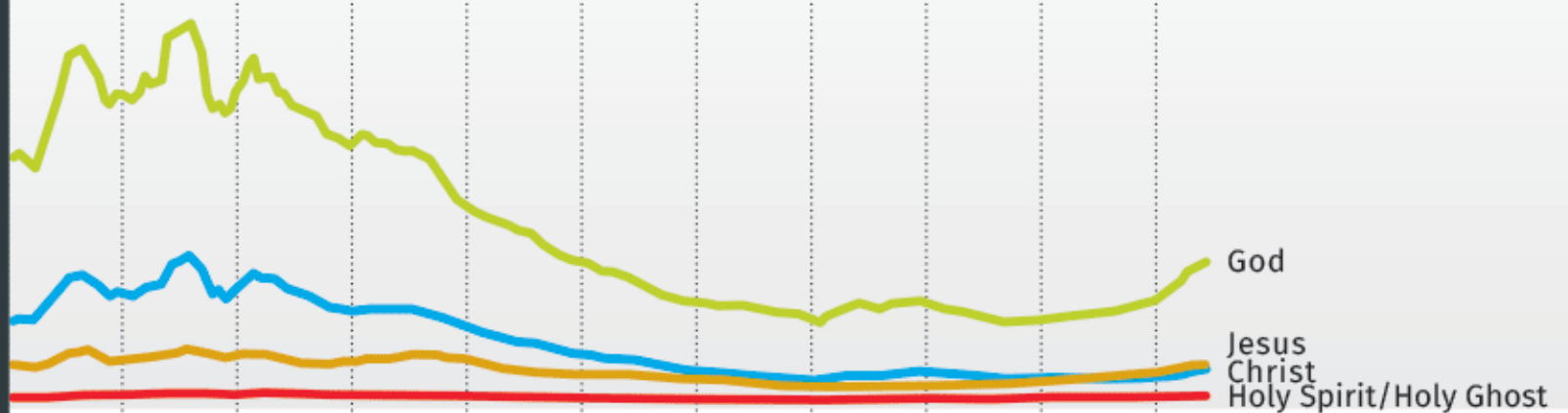
Secularization Trend



FIGURE

3

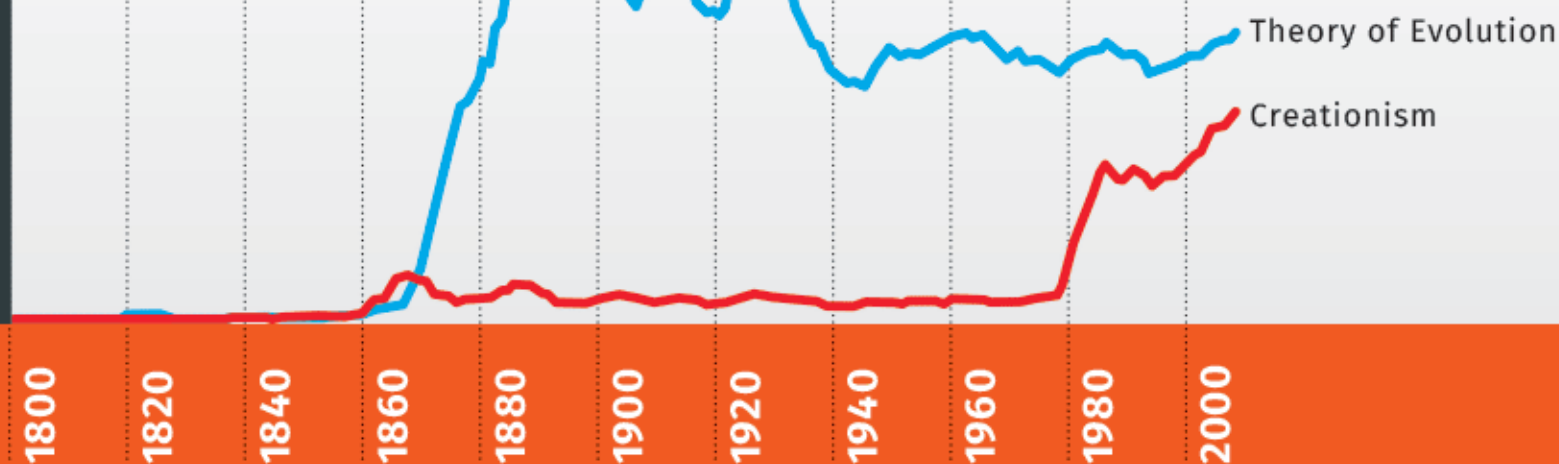
God-related Trend



FIGURE

4

Creationism Versus Theory of Evolution (CASE-INSENSITIVE SEARCH)



The Sabbath—God established the Sabbath as a perpetual memorial of His completed creation. As shown in Figure 5, the Sabbath was a very important theme in the nineteenth century. However, from the start of the twentieth century, the Sabbath has not been a popular concept in culture.

Sin and Salvation—Once molded in God’s image, our nature is now fractured by sin. We needed a perfect Savior to reconcile us. Despite the importance of recognizing the problem of sin and the need of salvation, Figure 6 shows the downtrend of these topics in culture. This fact represents a dilemma: if people do not recognize sin, then they will not see the need for a Savior.

The Ten Commandments, Justification by Faith—Salvation is all of grace and not of works. We are justified by faith. But the fruit of salvation is obedience to the commandments. On one hand, Figure 7 shows the downtrend of the line that represents justification by faith. On the other hand, it is difficult to conclude anything from the trend for the Ten Commandments since these words are also used in nonbiblical contexts (e.g., 10 commandments of marriage).

Christ’s Second Coming—Christ’s Second Coming is the blessed hope of the remnant. Its relevance was high in the 1840s when many Christians of that era—Baptists, Presbyterians, Methodists, Lutherans, Anglicans, Episcopalians, Congregationalists, and Disciples of Christ—believed in the Second Coming of Christ.

Figure 8 shows lower attention to Christ’s Second Coming in twentieth-century English literature, while Latin culture shows the topic to be increasingly relevant. This result speaks to the differing impact of given beliefs in different parts of the world.

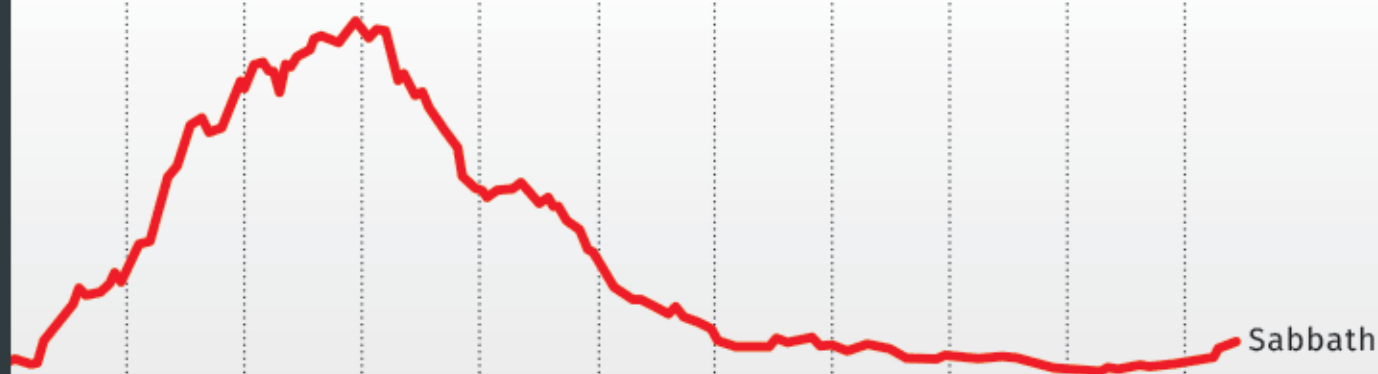
Healthful Living, Vegetarianism—We are called to be a godly people who think, feel, and act in harmony with the principles of heaven. Because our bodies are the temples of the Holy Spirit, we are to care for them intelligently and responsibly. Figure 9 shows an increasing

concern for healthful living and vegetarianism. This fact can be used to reach millions with the gospel of health, which is the “right arm” of the third angel’s message.

FIGURE

5

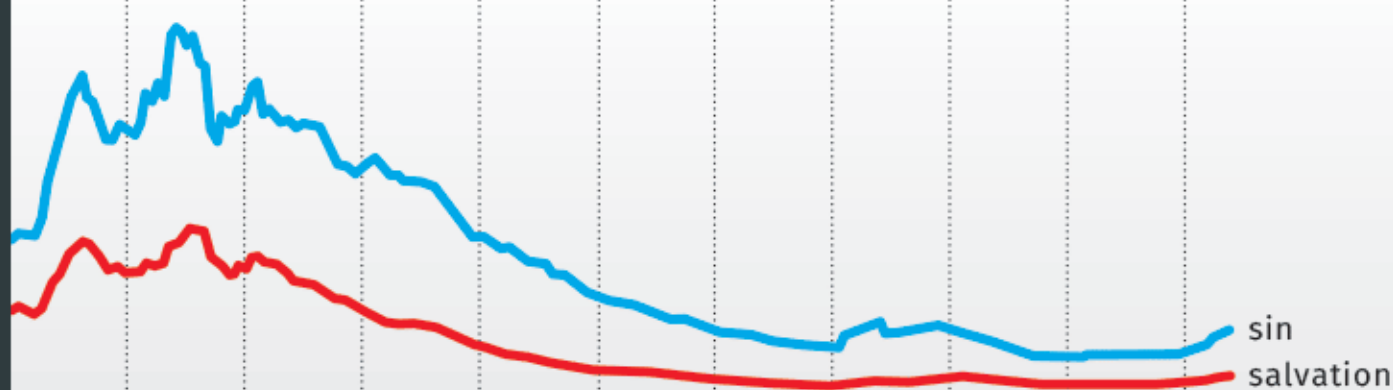
Sabbath Trend



FIGURE

6

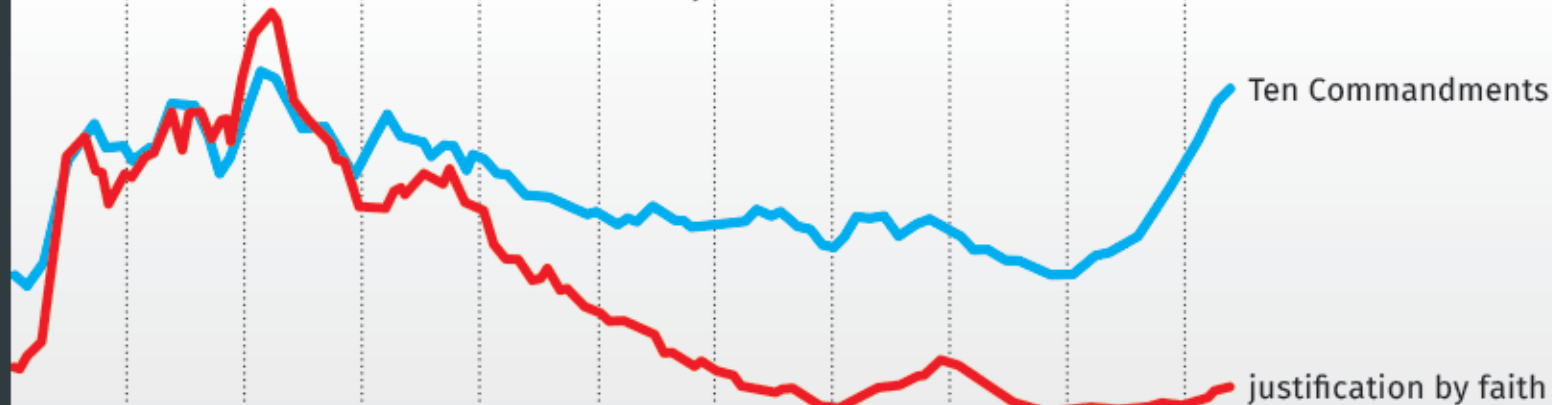
Sin and Salvation Trends



FIGURE

7

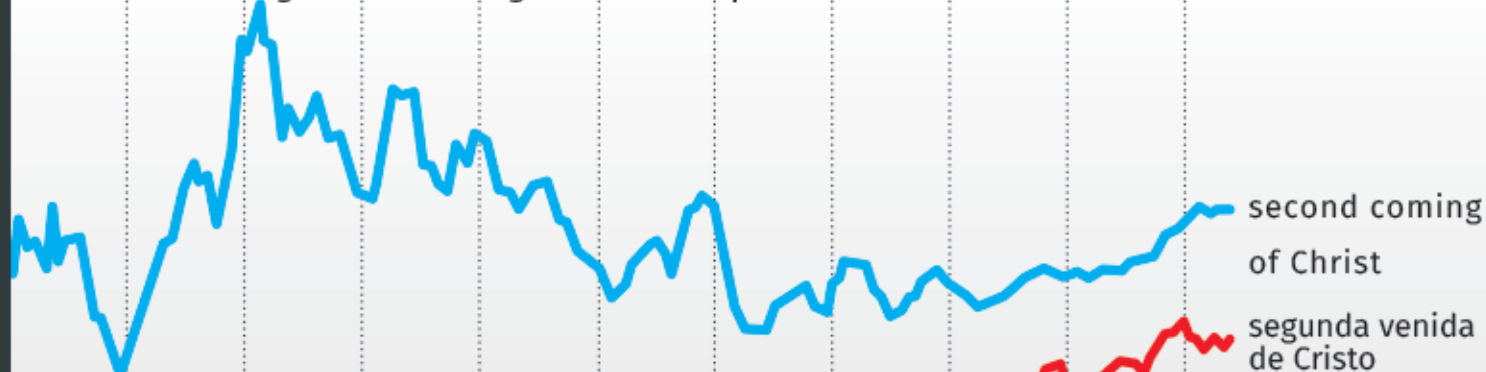
Ten Commandments and Justification by Faith Trends (CASE-INSENSITIVE SEARCH)



FIGURE

8

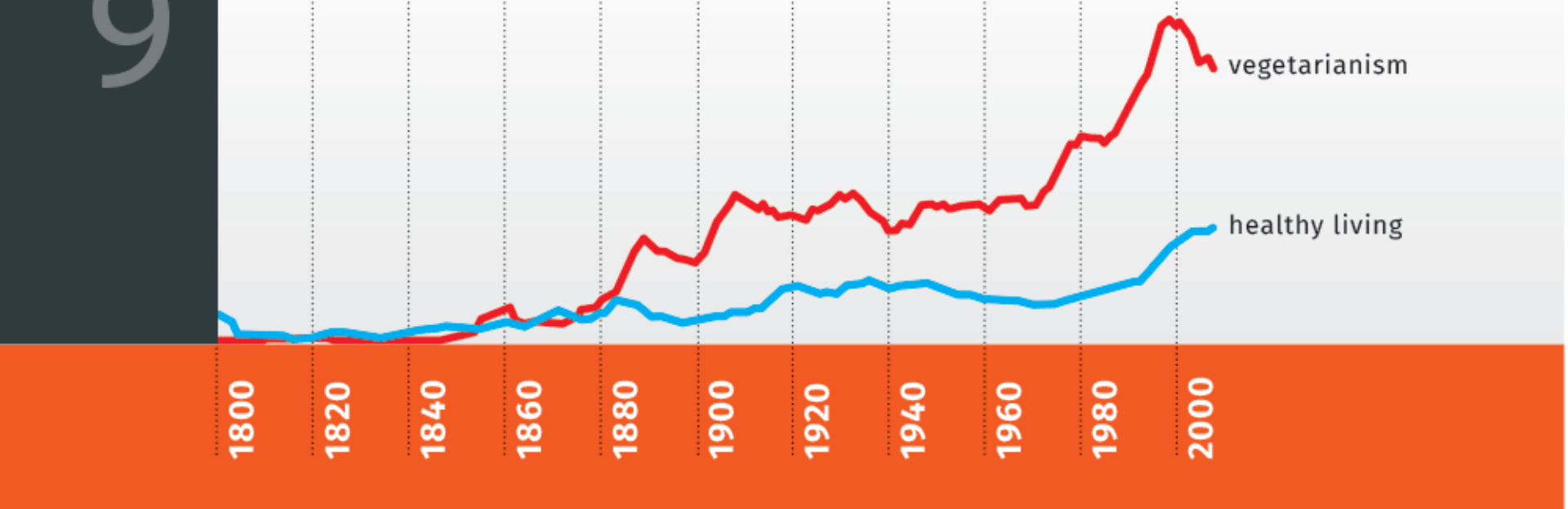
Second Coming of Christ, English Versus Spanish Trends (CASE-INSENSITIVE SEARCH)



FIGURE

9

Increasing Interest in Healthful Living and Vegetarianism



What's Next?

This article begins to illustrate how our church can exploit big data. Rightly used, big data can help us demonstrate the relevance of our beliefs to a postmodern culture. Available statistical and computational approaches can be used to understand large pools of data, discover patterns, and make decisions.

The Seventh-day Adventist Church must be spiritually and technologically ready to wield big data as a missionary tool. We must combine different kinds of data from multiple sources, visualize it, and make it relevant and actionable for the glory of heaven and the salvation of the world.

1. C. Snijders, U. Matzat, and U. D. Reips, "'Big Data': Big Gaps of Knowledge in the Field of Internet Science," *International Journal of Internet Science* 7, no. 1 (2014): 1-5.
2. EMC Corporation, "The Digital Universe of Opportunities: Rich Data and the Increasing Value of the Internet of Things" (2014), www.emc.com/leadership/digital-universe/2014iview/executive-summary.htm.
3. P. Rotella, "Is Data the New Oil?" (2012), www.forbes.com/sites/perryrotella/2012/04/02/is-data-the-new-oil/.
4. J.-B Michel et al., "Quantitative Analysis of Culture Using Millions of Digitized Books," *Science* 33 (2014): 176-182.

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