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## A Corpus-Based Comparison of Keywords and Themes from *The Book of Mormon* and the Bible

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# A Corpus-Based Comparison of Keywords and Themes from *The Book of Mormon* and the Bible

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## Abstract

The Book of Mormon has been studied for its thematic, literary, and theological content using almost exclusively qualitative methods (e.g., Turley, 2019; Morrill, 2017). However, scholars have conducted little analysis comparing it to the Bible, even though those who view it as scripture consider it directly comparable in purpose. (e.g., The Book of Mormon, 2015; McConkie, 1985). The present study applies quantitative linguistic analysis to statistically derive the distinctive language from the two volumes of scripture and identifies the key themes and language from the two books. To accomplish this, corpora of *The King James Version of the Bible* (66 books; 737,817 words) and *The Book of Mormon* (16 books; 256,286 words) underwent a bidirectional keyness analysis using a combination of log-likelihood and log ratio statistics as filtering criteria. Researchers iteratively categorized 86 keyword types from the Bible and 147 from The Book of Mormon using thematic analysis (Braun & Clarke, 2006). Based on thematic and grammatical relations, this process resulted in four key categories for the Bible and seven for The Book of Mormon. The categories describe key messages and characteristics unique to each book, revealing linguistic, stylistic, and thematic differences between the two books. For instance, the analysis indicated that the Bible focuses much more on documenting history, rituals, and law. In contrast, The Book of Mormon is more concerned with record keeping and war/conflict. The new insights gained from this analysis indicate that the two companion volumes of scripture explain God's will, plan, teachings, and relationship with His children. These results also demonstrate how quantitative linguistic methods can be applied to textual religious studies to provide additional insight into historically more qualitative areas.

For members of the Church of Jesus Christ of Latter-Day Saints, an international Christian denomination with over 17.2 million members worldwide (hereafter, the Church), *The Book of Mormon: Another Testament of Jesus Christ* is one of four books of canonical scripture (Articles of Faith 1:8). The Church claims it to be a record of God's dealings with His children in the Americas in ancient times (Pearl of Great Price, 2015, Book of Mormon, 2015). The Book of Mormon is like the Bible in that it focuses on God, His law, and His dealings with mankind, particularly on Christ (Book of Mormon, 2015, 2 Nephi 31; Mosiah 3; Alma 7; 3 Nephi 11). The Church believes that The Book of Mormon and the Bible complement one another (Ballard, 2007). The introduction to The Book of Mormon notes explicitly that "[t]he Book of Mormon is a volume of holy scripture comparable to the Bible" (Book of Mormon, 2015, Introduction). However, Church leaders also note that The Book of Mormon differs distinctly from the Bible (McConkie, 1985). Because The Book of Mormon is comparable and yet distinctive from the Bible, it becomes essential to understand the extent to which the two books are similar and different.

The present study uses a bottom-up, corpus-driven linguistic analysis (i.e., keyword analysis) to compare the language of The Book of Mormon and the Bible and evaluate the differences in thematic and semantic emphasis, grammar, and style between the two books.

## LITERATURE REVIEW

This section summarizes previous research on The Book of Mormon in linguistics and theology, explores the application of keyness analysis in other contexts, and discusses its potential usefulness for religious and theological studies.

### Previous Linguistic Study of The Book of Mormon

Most of the linguistics research concerning The Book of Mormon focuses primarily on providing evidence for or against the proposition that it is an ancient record and not a document written by early leaders of the Church (e.g., Jockers, 2013; Jockers et al., 2008; Larsen et al., 1980; Schroeder, 1919; Welch, 1969; Smith, 1994; Rees, 2006; Allred, 1996; Fields et al., 2011; Carmack, 2015; Madsen, 1993; Hilton & Johnson, 2012; Skousen, 1990; Sperry, 1995; Tvedtnes, 1994; Roper et al., 2012; Prince, 1917; Hilton, 1990; Holmes, 1992). Some claim that linguistic evidence points to an author or authors writing The Book of Mormon shortly before it was published (e.g., Jockers et al., 2008; Holmes, 1992). For instance, Jockers et al. (2008) linguistically analyzed The Book of Mormon on a chapter-by-chapter basis using delta and nearest shrunken centroid, two stylometric classifiers. They claim that Sidney Rigdon, one of the early church leaders, was the primary architect who wrote The Book of Mormon. Other linguistic studies of The Book of Mormon argue that it was written anciently by many authors, as The Book of Mormon claims (e.g., Larsen et al., 1980). Larsen et al. (1980) used woodprint analysis, a statistical analysis of style, to examine The Book of Mormon and concluded that over 24 primary authors wrote it.

Other than authorship analyses, there have been only a few empirical linguistic studies of The Book of Mormon. Research by Hilton and Johnson (2012) analyzed

all the uses of the word *resurrection* throughout The Book of Mormon to address the authorship of The Book of Mormon and explore *resurrection* as one of its key messages. While this study tells us more about The Book of Mormon and briefly addresses its usage of the word *resurrection* in the Bible, the study focuses primarily on differences between various writers within The Book of Mormon and does not tell us much about a comparison of The Book of Mormon and Bible on a more general level. Specifically, how is The Book of Mormon similar to the Bible? How is it different from the Bible?

### **Theological Study of *The Book of Mormon***

The Book of Mormon has also been closely studied qualitatively through the lens of religious and literary studies. For instance, the *Journal of Book of Mormon Studies*, published yearly, contains numerous papers on themes and topics within The Book of Mormon using literary criticism techniques and other more qualitative methods. Turley (2019), for example, qualitatively studied the life and experiences of a single character in The Book of Mormon through literary analysis to explore how The Book of Mormon treats the topic of suffering and the overall strength of The Book of Mormon as a literary work. Thomas (2018) utilized narrative analysis, a qualitative analytical method, to research the vital theological emphases within The Book of Mormon as well as the impact that The Book of Mormon and its messages have had on history and modern culture. Morrill (2017) has studied the women of The Book of Mormon to provide more insights into the members of the Church and their culture. While qualitative research in this area is illuminating and meaningful, helping to build knowledge of the scriptures and faith in Church members, incorporating quantitative analytical methods could provide additional insights.

### **Corpus Linguistics and Keyness Analysis**

One widely used quantitative approach for analyzing texts is corpus linguistics (see O'Keeffe & McCarthy, 2010, for a summary of the wide variety of applications for corpus linguistics). Corpus linguistics is a computationally driven set of methods for systematically examining language, primarily focused on automatically extracting linguistic patterns (Biber et al., 1998). More recently, corpus linguistics has been used in literary studies to analyze various linguistic patterns, especially stylistics (Biber, 2011; Mahlberg, 2007; Fischer-Starcke, 2010). Among other things, corpus literary studies have compared groups of texts regarding style, diction, characterization, and interpretation (see Hoover et al., 2016, for a summary of corpus linguistics' contributions to literary studies). Similarly, empirical linguistic methods have the potential to contribute to understanding religious texts as well. For example, recently, Mueller et al. (2022) examined differences in the use of linguistic modals in Evangelical Christian and Zen Buddhist texts and found that the varied use of these linguistic features is attributable to differences in the contexts and purposes of the books. More specifically, among linguistics methods, keyness analysis has been used in a wide variety of disciplines to explore critical themes and style in a text or group of texts (e.g., Adolphs et al., 2004; Ädel, 2010; Baker, 2012; Bednarek, 2020; Fischer-Starcke 2009, 2010; Green, 2010). The point of keyword analysis is to identify the

words in a text that are most important (or key) in distinguishing it from other texts (Scott & Tribble, 2006; Brezina, 2018). Keyword analysis helps identify themes, topics, grammatical structures, and distinctive stylistic features in a particular language sample (i.e., a linguistic corpus). Keyword analyses use two linguistic corpora: a target corpus and a reference corpus. Comparing the words in the target corpus against a reference corpus can identify words that occur in the target corpus more frequently than one would expect, given how often they occur in the reference corpus. Mathematically, one way to accomplish this is by using a log-likelihood statistic to compare the frequency of occurrence of every word that appears in the corpus of interest to a reference corpus, as shown in the following formulas.

$$-2 \ln \lambda = 2 \sum_i O_i \ln \left( \frac{O_i}{E_i} \right)$$

Where:

$E_i$  is the expected frequency in the target corpus given the reference corpus.

$O_i$  is the observed frequency in the target corpus.

Linguists have widely used keyness analysis to understand the distinctive language of a text or collection of texts. For instance, Pesta et al. (2018) used keyness analysis to determine which topics were most popular in the journal *Intelligence* from 2000-2016, discovering that keyword analysis can often find themes and messages that could be less obvious by manual analysis. Pollach (2012) similarly showed the benefits of using corpus linguistics for the social sciences, explicitly using keyword analyses to learn more about specialized areas of language use effectively. Ajšić (2021) demonstrated that corpus linguistics can effectively combine with qualitative analyses to reveal underlying information about ideologies within social discourses. Newton and Hashimoto (2023) also performed a linguistic analysis to examine the essential functions and themes of prayers contrasted against talks in the General Conference of The Church of Jesus Christ of Latter-day Saints. By allowing a statistical test to identify data for further analysis, one can identify all significant patterns in the data, both overtly apparent, typically identified by qualitative methods, and those that may not be immediately obvious but are nevertheless empirically accurate.

### ***The Present Study***

The present study seeks to better understand the relationship between the Bible and The Book of Mormon as if they were each, respectively, one book by understanding what is distinctive about each text. Therefore, researchers conducted a bidirectional keyword analysis to extract the words from each book that occur more frequently than by chance compared to the other book. This method allows us to identify the themes, topics, grammar, and stylistic language that is more specific to each book and allows the exploration of the following research questions (RQ):

RQ #1: What language and themes distinguish the Bible from The Book of Mormon?

RQ #2: What language and themes distinguish The Book of Mormon from the Bible?

## METHODS

### Data

Researchers used two corpora of texts to conduct a keyword analysis: one for The Book of Mormon and another for the Bible. As sources for the corpora, we used the English version of the King James Version and the English version of the official version of The Book of Mormon published by the Church (Book of Mormon, 2000). *The King James Version of the Bible* was selected to control for any differences attributable solely to the period of writing because it was the primary version of the Bible in use during the life of the original translator of The Book of Mormon, Joseph Smith (Davis, 2014); additionally, it remains the primary version of the English Bible used by the Church ("Bible," 2022). For this study, researchers treated the Old Testament and New Testament as a single corpus, even though they were written at different times and have other differences that could warrant treating them as separate and distinct corpora. We acknowledge that we could have conducted this analysis by treating the Old and New Testament as separate books or each book within the Bible as its separate text. However, the Bible is frequently treated canonically as a single work, viewed as a single book of scripture, and pieced together and crafted into a single document parallel to The Book of Mormon. Both books are collections of texts consisting of compilations of multiple records across time and are often referred to and treated as a single work. Future work seeking to build on this research can and should also conduct analyses treating the New and Old Testament separately and each book within the Bible and The Book of Mormon as separate works. However, for practicality and because it is one of several valid approaches to this analysis, we elected to treat both the Bible and The Book of Mormon as their own corpora.

To prepare the data, researchers removed all elements not part of the textual narrative, such as chapter references, page numbers, footnotes, supplementary materials, and other study helps, because they were not part of the original manuscripts. The data was then part-of-speech annotated using the Natural Language Toolkit in Python (Bird et al., 2009; Van Rossum & Drake, 2009). Researchers removed proper nouns from the keyword analysis using the annotated data. While studying proper nouns in The Book of Mormon and the Bible would bear some crucial findings about which specific people the two Books most emphasize, they were removed for this study to focus the analysis on the thematic and semantic content.

The Book of Mormon corpus contained 16 books, and the Title Page of Researchers included The Book of Mormon because a Book of Mormon prophet wrote it as part of the original translation. The Bible corpus contains each book in the Old Testament and New Testament. Table 1 shows a descriptive breakdown of the data.

**Table 1.***Descriptive statistics about corpora*

|                          | <i>Book of Mormon</i> | <i>Bible</i> |
|--------------------------|-----------------------|--------------|
| # of books               | 16                    | 66           |
| # of words               | 256,286               | 737,817      |
| Mean # of words per book | 16,017.90             | 11,197.10    |
| SD # of words per book   | 19,985.30             | 11,551.90    |

## Analysis

Researchers conducted the keyword analysis using the concordance software AntConc (Anthony, 2020). Researchers used a four-term log-likelihood keyness statistic to determine whether a word was used more in the target corpus than expected by random chance. We set our critical value for inclusion in our keyword analysis at 3.84, corresponding to a  $p$ -value of less than 0.05, with a Bonferroni adjustment. We then additionally filtered any keywords with a log ratio effect size of less than 3.50 to remove words that were statistically but not practically significant (Hardie, 2014). Only significant and distinctive keywords were maintained using a  $p$ -value and an effect size. Researchers conducted two reciprocal analyses, using each corpus as the target corpus and the other as the reference. As a result, they generated two keyword lists—one for the Bible and one for The Book of Mormon. Keywords unique to only one book of scripture were then identified by querying each one using AntConc and removing them to focus on only the words that both volumes of scripture use but where one emphasizes it more than the other.

After extracting the keyword lists, researchers grouped the words into categories using a formal thematic analysis (Braun & Clarke, 2006). This qualitative approach is used widely across social sciences to extract underlying patterns of meaning in data (e.g., Guest et al., 2011). Typically, a thematic analysis consists of six phases outlined in Table 2. However, instead of manually analyzing initial codes, we generated codes quantitatively using keyword statistics.

Importantly, we iterated through Phases 3-5 multiple times to refine our final analysis until we had a set of parsimonious, explanatory, and interpretable categories.

## Results and Discussion

The keyword analyses resulted in 86 keyword types from the Bible and 147 from The Book of Mormon (see Appendix for the complete list)<sup>2</sup>. The keywords from the analysis of the Bible fit into four categories, which we labeled "Rites and Rituals," "Social Structure," "Narrative," and "Grammar & Style." We divided the keywords from the analysis of The Book of Mormon into seven main categories: "War & Conflict," "Theology," "Narrative," "Crime," "Grammar & Style," "Record Keeping," and "Government." Table 3 provides additional numerical information about these categories in The Book of Mormon. The following subsections are ordered by the total number of keyword tokens by book, beginning with the Bible categories.

<sup>2</sup> It is important to note that bidirectional keyword analyses always yield different numbers of keywords.

**Table 2.***Phases of thematic analysis (adapted from Braun & Clark, 2006, p. 35)*

| Phase                                  | Description of the process   |
|--|--|
| 1. Familiarizing oneself with the data | Reading and rereading the data, noting down initial ideas.   |
| 2. Generating initial codes            | Coding exciting data features systematically across the entire data set, collating data relevant to each code.   |
| 3. Searching for categories            | Collating codes into potential categories, gathering all data relevant to each potential category. This collation was done by looking at concordance lines for each word.  |
| 4. Reviewing categories                | Check that the categories work for the coded extracts and the entire data set, generating a categorial map of the analysis.  |
| 5. Defining and naming categories      | An ongoing analysis is needed to refine the specifics of each category and the overall story that the analysis tells, generating clear definitions and names for each category.  |
| 6. Producing the report                | The final opportunity for analysis. Selection of vivid, compelling extract examples, final analysis of selected extracts, relating the analysis to the research question and literature, and producing a scholarly report. |

**Table 3.***Breakdown of categories in the Bible and Book of Mormon*

|                       | Categories                 | # of keyword types | # of keyword tokens | Normed freq. (per mil.) |
|-----------------------|----------------------------|--------------------|---------------------|-------------------------|
| <b>Bible</b>          | <i>Rites &amp; Rituals</i> | 42                 | 6398                | 4720.86                 |
|                       | <i>Narrative</i>           | 29                 | 1961                | 1446.95                 |
|                       | <i>Social Structure</i>    | 9                  | 1206                | 889.87                  |
|                       | <i>Grammar &amp; Style</i> | 6                  | 361                 | 266.37                  |
| Total                 |                            | 86                 | 9926                | 7324.05                 |
| <b>Book of Mormon</b> | <i>Grammar &amp; Style</i> | 19                 | 1204                | 308.56                  |
|                       | <i>Theology</i>            | 47                 | 947                 | 242.69                  |
|                       | <i>War &amp; Conflict</i>  | 43                 | 791                 | 202.71                  |
|                       | <i>Record Keeping</i>      | 6                  | 471                 | 120.71                  |
|                       | <i>Crime</i>               | 8                  | 163                 | 41.77                   |
|                       | <i>Narrative</i>           | 16                 | 147                 | 37.67                   |
|                       | <i>Government</i>          | 8                  | 132                 | 33.83                   |
| Total                 |                            | 147                | 3855                | 987.95                  |

***The Bible*****Rites and Rituals**

Compared to The Book of Mormon, the biblical category emphasized most was "Rites and Rituals" (see Table 4). This category represents, in large part, much of the language associated with the Law of Moses and the details of each sacrifice, offering, or other religious rite detailed in it.



**Table 4.***Keywords in the Rites and Rituals category*

| Raw          |           |         |        | Raw          |           |         |        |
|--------------|-----------|---------|--------|--------------|-----------|---------|--------|
| Keyword      | Frequency | Keyness | Effect | Keyword      | Frequency | Keyness | Effect |
| congregation | 364       | 206.01  | 6.98   | asses        | 64        | 30.54   | 4.47   |
| ark          | 230       | 127.00  | 6.32   | months       | 59        | 27.72   | 4.36   |
| toward       | 346       | 187.15  | 5.91   | mingled      | 55        | 25.48   | 4.26   |
| offered      | 143       | 76.05   | 5.63   | oxen         | 102       | 46.48   | 4.15   |
| firstborn    | 113       | 58.63   | 5.29   | heathen      | 150       | 68.05   | 4.12   |
| Offering     | 724       | 371.85  | 5.17   | host         | 192       | 86.29   | 4.06   |
| Altar        | 378       | 191.86  | 5.04   | cubit        | 45        | 19.91   | 3.97   |
| Beast        | 180       | 90.74   | 4.97   | offerings    | 265       | 116.71  | 3.94   |
| Breadth      | 89        | 44.80   | 4.95   | woman        | 348       | 152.69  | 3.92   |
| Wash         | 87        | 43.65   | 4.92   | fat          | 130       | 56.97   | 3.91   |
| Company      | 86        | 43.07   | 4.90   | candlestick  | 40        | 17.16   | 3.80   |
| Trespass     | 82        | 40.78   | 4.83   | corner       | 37        | 15.53   | 3.68   |
| Tabernacle   | 327       | 162.59  | 4.83   | Folly        | 36        | 14.98   | 3.64   |
| Lambs        | 81        | 40.21   | 4.81   | Horn         | 36        | 14.98   | 3.64   |
| Sware        | 78        | 38.50   | 4.76   | circumcision | 35        | 14.44   | 3.60   |
| Seven        | 449       | 220.20  | 4.70   | corn         | 102       | 41.71   | 3.56   |
| Burnt        | 366       | 178.84  | 4.67   | ephah        | 34        | 13.90   | 3.56   |
| Defiled      | 71        | 34.51   | 4.62   | residue      | 34        | 13.90   | 3.56   |
| Doors        | 71        | 34.51   | 4.62   | golden       | 66        | 26.73   | 3.52   |
| Sanctuary    | 136       | 65.62   | 4.56   | thereon      | 66        | 26.73   | 3.52   |
| Upright      | 68        | 32.81   | 4.56   | cleanse      | 33        | 13.37   | 3.52   |

An example of a word to represent this category is *seven*. Within this category, the word *seven* demonstrates how a seemingly ordinary word can be used specifically within a specific context. Many of the actions recorded in the Law of Moses must happen seven times, with seven objects or animals, or are associated with some period of seven days or weeks, especially in the Old Testament as in Examples 1 and 2:

Example 1. Leviticus 23:8 “An **offering** made by fire unto the Lord **seven** days: in the seventh day is holy.”

Example 2. 2 Chronicles 29:21 “and **seven** rams, and **seven** lambs, and **seven** he goats, for a sin **offering**”

The Bible occasionally uses the number *seven* to describe various events, especially in the Old Testament, including amounts and times, which may have contributed to its keyness, as shown in Example 3.

Example 3. 2 Kings 8:1 “And it shall also come upon the land **seven** years.”

There were 463 uses of *seven* in the Bible (341.61 per million words) in contrast to six uses in The Book of Mormon (1.54 per million words). *Seven* is a biblical symbol of perfection and order (e.g., Genesis 2:2-3; see also Pour Hasan et al., 2014), and it is widely used in books detailing the Law of Moses. In contrast, The Book of Mormon contains little symbolism surrounding *seven*.

Another representative keyword that fell into this category was *wash*, which appears 89 times in the Bible (65.67 per million words) and only once in The Book of Mormon (.26 per million words). The Bible describes fasting with the term *wash*. Additionally, people used it for various rites that required washing animals or people, such as the sacrifice of lambs, rams, goats, and heifers, and the preparation for entering the Tabernacle, as shown in Examples 4 and 5.

Example 4. Exodus 29:17 “Thou shalt cut the ram in pieces, and **wash** the inwards of him.”

Example 5. Numbers 19:8 “For Aaron and his sons shall **wash** their hands and their feet thereat:”

These examples illustrate that the Bible strongly emphasizes the importance of physical sacrifices, as detailed in the Law of Moses. This emphasis is indicated by keywords related to offerings (e.g., *offering, offerings, offered, altar, asses, mingled, oxen, trespass, lambs, sware, seven, host, burnt, firstborn, fat, corn, ephah, thereon*) and physical cleanliness, indicated by words related to washing (e.g., *defiled, wash, cleanse, circumcision, months*), which symbolize spiritual cleanliness.

The Bible is also much more detailed in its specifications for the construction of holy edifices, especially those used in ritual practices, demonstrated through keywords related to holy structures or edifices (i.e., *tabernacle, sanctuary, doors, cubit, corner, ark, toward, altar, breadth, trespass, candlestick, golden*). Keywords from this category are found primarily in the Books of Moses or Pentateuch (i.e., Genesis, Exodus, Leviticus, Numbers, Deuteronomy). These keywords strongly emphasize specific ritualistic practices that The Book of Mormon emphasizes less.

Interestingly, the Bible focuses much more on ritual practices than The Book of Mormon. It highlights at least one key difference in the purpose of the two volumes of scripture. While the Bible focuses on describing the specific daily practices of the Children of Israel, The Book of Mormon concentrates more on explicit discussions of principles and beliefs, as highlighted below in the Theology subsection of The Book of Mormon section. In this way, these two volumes of scripture complement one another as contemporary Church leaders consistently emphasize that both are critical to lead a righteous life (see, e.g., Church of Jesus Christ of Latter-day Saints, 2011, Ch. 22; 2014, Ch. 21). For example, Brigham Young, a prophet of the Church, noted that “we cannot separate the temporal from the spiritual, but they must go hand in hand together, and so it is and so must we act about building up the church and kingdom of God” (as quoted in Church of Jesus Christ of Latter-day Saints, 2011, p. 227, original quote from 1862). Thus, both books work together within the Church's theology to emphasize and cover these two critical halves of God's teachings.

Another primary reason the Bible focuses more on rituals is the differences in audiences among the books. The primary redactor for The Book of Mormon was

Mormon (Title Page of The Book of Mormon). While abridging the various records that his predecessors kept, he added commentary and editing that turned the records into a cohesive narrative. Mormon's stated audience is "the remnant of this people who are spared" (Mormon 7:1). Mormon was writing and compiling the writing of others after Christ taught, "Behold, I am he that gave the law, and I am he who covenanted with my people Israel; therefore, the law in me is fulfilled, for I have come to fulfill the law; therefore it hath an end." (3 Nephi 15:5) Thus, Mormon likely saw no reason to include the law of Moses in the completed Book of Mormon since he understood the law as having "an end" for any possible audience to whom he was writing.

### Narrative

This "Narrative" category includes any words that were key to storytelling in the Bible. Both books of scripture contain a "Narrative" category because of the nature of the records. It is apparent from both that they are more than just dry records of dates, events, and people. Instead, both books highly emphasize describing people's lives as stories.

**Table 5.**

*Keywords in the Narrative category.*

| Raw       |           |         |        | Raw        |           |         |        |
|-----------|-----------|---------|--------|------------|-----------|---------|--------|
| Keyword   | Frequency | Keyness | Effect | Keyword    | Frequency | Keyness | Effect |
| gods      | 247       | 136.99  | 6.42   | obeyed     | 41        | 17.71   | 3.83   |
| asked     | 119       | 62.11   | 5.37   | walketh    | 41        | 17.71   | 3.83   |
| clothes   | 101       | 51.70   | 5.13   | walked     | 122       | 52.58   | 3.82   |
| early     | 86        | 43.07   | 4.90   | net        | 39        | 16.61   | 3.76   |
| vanity    | 84        | 41.93   | 4.87   | lot        | 76        | 32.14   | 3.72   |
| rose      | 131       | 62.78   | 4.51   | confidence | 38        | 16.07   | 3.72   |
| upward    | 61        | 28.85   | 4.41   | empty      | 38        | 16.07   | 3.72   |
| increased | 49        | 22.13   | 4.09   | dew        | 37        | 15.53   | 3.68   |
| entering  | 46        | 20.46   | 4.00   | brake      | 73        | 30.51   | 3.66   |
| mischief  | 46        | 20.46   | 4.00   | street     | 36        | 14.98   | 3.64   |
| shield    | 45        | 19.91   | 3.97   | goeth      | 135       | 55.08   | 3.55   |
| repaired  | 44        | 19.36   | 3.93   | reed       | 33        | 13.37   | 3.52   |
| horse     | 43        | 18.81   | 3.90   | turneth    | 33        | 13.37   | 3.52   |
| posts     | 42        | 18.26   | 3.87   | wheels     | 33        | 13.37   | 3.52   |
| sitteth   | 42        | 18.26   | 3.87   |            |           |         |        |

Many words in the "Narrative" category are active verbs, especially in the past tense. Researchers have documented that past tense verbs are a primary and defining feature of narrative discourse (e.g., Biber, 1988; Biber et al., 1999).

Example 6. Joshua 6:15 "That they **rose** early about the dawning of the day,"

Example 7. 1 Peter 3:6 "Even as Sara **obeyed** Abraham, calling him"

However, the Bible also had keywords that were present tense verbs, often found in dialogue, which is another critical part of narrative discourse. Writers use these to describe future events or general statements, such as proverbs, as shown in Examples 11 and 12.

Example 8. Mark 14:21 "The Son of man indeed **goeth** as it is written."

Example 9. Psalm 39:6 "Surely every man **walketh** in a vain shew."

Using past tense for narratives and present tense for dialogue highlights stylistic differences between the two books. Dialogue, typical in the New Testament, is quite limited in The Book of Mormon. When there is a dialogue in The Book of Mormon, it is frequently a paraphrased reported speech rather than a direct quotation.

The Bible also contains many concrete noun keywords used in storytelling (i.e., *clothes, lot, street, reed, wheels, posts, shield, horse, net, dew*) to be exemplary of cultural aspects of the people described in the Bible, such as the rending of clothes to show grief, which as ancient Jewish practice (Jerome, 2018), as in Example 10 or the relevant descriptions of the places where the stories took place as in Example 11.

Example 10. 2 Samuel 1:11 "Then David took hold on his **clothes**, and rent them"

Example 11. Job 40:21 "He lieth under the shady trees, in the covert of the **reed**."

These words were likely vital because they were relatable to people living in and around the places where Biblical events took place. However, they were less relatable to the people living in the Americas, where The Book of Mormon was written, and thus were used less often in The Book of Mormon. This indicates the usefulness of cultural metaphors for religious teaching.

### Social Structure

The "Social Structure" category highlights governmental, cultural, and political aspects that are key to the Bible.

**Table 6.**

*Keywords in the Social Structure category*

| Raw      |           |         |        | Raw       |           |         |        |
|----------|-----------|---------|--------|-----------|-----------|---------|--------|
| Keyword  | Frequency | Keyness | Effect | Keyword   | Frequency | Keyness | Effect |
| princes  | 276       | 133.51  | 4.58   | crown     | 66        | 31.67   | 4.52   |
| lord     | 283       | 126.67  | 4.03   | harlot    | 40        | 17.16   | 3.80   |
| tribe    | 241       | 119.50  | 4.80   | shepherds | 40        | 17.16   | 3.80   |
| stranger | 129       | 56.42   | 3.90   | palaces   | 33        | 13.37   | 3.52   |
| prince   | 98        | 49.97   | 5.09   |           |           |         |        |

Overall, the Bible focuses on eight descriptors of social class that the Book of Mormon uses sparingly. One of the keywords is *prince* or *princes*. The Book of Mormon uses only one *prince*, which is not a direct quotation from the Bible. However, in contrast, the Bible uses *prince* or *princes* about their social structure.

Example 12. Exodus 2:14 "And he said, Who made thee a **prince** and a judge over us?"

Example 13. Job 21:28 "Where is the house of the **prince**?"

Example 14. Genesis 12:15 "The **princes** also of Pharaoh saw her, and commended her."

*Tribe* is used three times (0.77 per million words) in The Book of Mormon, all within the same book and same section, to describe a fleeting social structure that lasted only a short period. Throughout almost the entirety of The Book of Mormon, the author(s) divide all the people into groups called the "Nephites" and the "Lamanites." The author(s) avoided referring to these groups as *tribes*, even though they could describe them that way.

On the other hand, *tribe* is used 241 times (177.81 per million words) in the Bible. *Tribes* were a fundamental social structure of the Old Testament, especially throughout the Books of Moses. Many of the references are administrative,

Example 15. 1 Kings 11:13 "But will give one **tribe** to thy son for David my servant."

Example 16. Numbers 31:5 "A thousand of every **tribe**."

while other references are references to the specific group of people:

Example 17. Numbers 36:4 "From the inheritance of the **tribe** of our fathers."

Example 18. Joshua 21:7 "By their families had out of the **tribe** of Reuben."

Since there were mainly only two key groups, the Nephites and the Lamanites, they were regularly referred to by name. In contrast, the Bible regularly referred to numerous groups or tribes as *tribe*, *the tribe*, or *the tribe of*, making *tribe* a more common way to describe various groups of people in the Bible than in The Book of Mormon.

### Grammar and Style

The "Grammar and Style" category includes keywords about the general writing style of the Bible's books and highlights how it differs from that of The Book of Mormon.

**Table 7.***Keywords in the Grammar and Style category*

| <b>Raw</b>     |                  |                |               | <b>Raw</b>     |                  |                |               |
|----------------|------------------|----------------|---------------|----------------|------------------|----------------|---------------|
| <b>Keyword</b> | <b>Frequency</b> | <b>Keyness</b> | <b>Effect</b> | <b>Keyword</b> | <b>Frequency</b> | <b>Keyness</b> | <b>Effect</b> |
| afar           | 51               | 23.24          | 4.15          | lo             | 118              | 50.39          | 3.77          |
| doest          | 43               | 18.81          | 3.90          | prevailed      | 37               | 15.53          | 3.68          |
| herself        | 42               | 18.26          | 3.87          | indeed         | 70               | 28.89          | 3.60          |

Several key grammatical words in the Bible are significant stylistically from The Book of Mormon. *Lo* is used four times (1.03 per million words) in The Book of Mormon and is used exclusively in quotations from the Bible, showing that it is not part of the style of The Book of Mormon in and of itself. In the Bible, *lo* is used throughout various stories, books, and narrative styles to convey emphasis either by the speaker within a story or by the narrator.

Example 19. Jeremiah 1:15 “For, **lo**, I will call all the families of the kingdoms of the north.”

Example 20. 2 Samuel 1:6 “And there was Saul, leaning on his spear; and, **lo**, the chariots and the horsemen followed hard after him.”

*Indeed* is similarly used only in quotations from the Bible in The Book of Mormon. It is used two times (0.51 per million words) in The Book of Mormon but 70 times (50.65 per million words).

Example 21. Luke 24:34 “The Lord is risen **indeed**, and hath appeared to Simon.”

Example 22. Isaiah 6:9 “Ye shall hear **indeed**, but ye shall not understand; and ye shall see indeed, but ye shall not perceive.”

There are, however, no examples of words that the Bible only has as quotes from The Book of Mormon. These examples are vital in showing that the language of The Book of Mormon reflects its relationship with the Bible: the Bible influenced The Book of Mormon, but The Book of Mormon did not influence the Bible.

### ***The Book of Mormon*** **Grammar and Style**

The "Grammar and Style" category was the most key in The Book of Mormon, with 1,204 keyword tokens, compared to the next most key category, "Theology," with 947 keyword tokens. This category deals with words merely grammatically or stylistically different from the Bible.

**Table 8.***Keywords in the Grammar and Style category*

| Raw          |           |         |        | Raw         |           |         |        |
|--------------|-----------|---------|--------|-------------|-----------|---------|--------|
| Keyword      | Frequency | Keyness | Effect | Keyword     | Frequency | Keyness | Effect |
| has          | 292       | 779.13  | 9.72   | exceedingly | 267       | 510.32  | 4.26   |
| its          | 37        | 91.66   | 6.74   | extended    | 13        | 24.66   | 4.23   |
| perhaps      | 43        | 96.19   | 5.37   | naught      | 18        | 33.36   | 4.11   |
| sufficeth    | 10        | 21.01   | 4.85   | nethermost  | 6         | 11.12   | 4.11   |
| remainder    | 57        | 118.49  | 4.77   | entire      | 5         | 8.75    | 3.85   |
| insomuch     | 181       | 372.48  | 4.70   | inasmuch    | 31        | 51.91   | 3.67   |
| sufficiently | 18        | 36.99   | 4.70   | durst       | 38        | 62.48   | 3.60   |
| expedient    | 62        | 126.97  | 4.67   | supposed    | 33        | 53.77   | 3.57   |
| suppose      | 63        | 125.59  | 4.50   | exceed      | 16        | 25.75   | 3.53   |
| amongst      | 14        | 27.09   | 4.33   |             |           |         |        |

The keyword with the most significant effect size in The Book of Mormon was *has*. It is used 293 times (75.09 per million words) in The Book of Mormon and one time (0.74 per million words) in the Bible.

Example 23. Alma 5:21 “Through the blood of him of whom it **has** been spoken by our fathers.”

Example 24. Mormon 2:18 “A continual scene of wickedness and abominations **has** been before mine eyes.”

The disparity in effect size is a particularly noticeable difference, which can be accounted for in that the Bible uses *hath* instead with a frequency of 2264 times (1670.41 per million words). However, The Book of Mormon also uses *hath* and has a frequency of 513 times (131.47 per million words). A helpful example is how the Book of Mormon references Biblical text (Isaiah in this example) using *has* instead of *hath*.

Example 25. Isaiah 53:10 “Yet it pleased the Lord to bruise him; he **hath** put him to grief: when thou shalt make his soul an offering for sin, he shall see his seed”

Example 26. Mosiah 15:10 “And now I say unto you, who shall declare his generation? Behold I say unto you, that when his soul **has** been made an offering for sin he shall see his seed.”

The differences between *has* in The Book of Mormon and *hath* in the Bible illustrate grammatical differences more so than any of the other keywords analyzed in this study; however, other words in this category also reflect these differences. This particular difference likely stems from the fact that The Book of Mormon was published in 1830, whereas *The King James Version of the Bible* was published in 1611. During this time, the –ETH 3<sup>rd</sup> person singular inflectional ending is slowly disappearing from the language, which reflects a broader number of linguistic changes occurring during the transition from Early Modern English in the Jacobean

era to Late Modern English (Barber, 1997). Joseph Smith wrote *The Book of Mormon* scripturally, likely based on his exposure to the Bible. This example highlights one of the many grammatical differences between *The Book of Mormon* and *the King James Version of the Bible*.

### Theology

The "Theology" category was the most diverse in *The Book of Mormon*, with 47 token types. It encompasses words that were usually used by characters to give sermons or otherwise describe the beliefs and religious obligations associated with the people in *The Book of Mormon*.

*The Book of Mormon* addresses many of the Bible's theological themes by referencing, discussing, and quoting them directly. However, the *Book of Mormon* also explores topics not present in the Bible and elaborates on topics that the Bible mentions in less detail. The list of keywords in the "Theology" category shows this difference.

*Repent* is used 198 times (50.744 per million words) in *The Book of Mormon*; in contrast, the Bible uses *repent* 46 times (33.94 per million words). In addition, repentance is a central theme in the *Book of Mormon*, not just a single book within it, and it appears consistently. As seen in examples 32-34, *repent* is often used with another verb.

Example 27. Helaman 11:4 "Perhaps they will **repent** and turn unto thee."

Example 28. Ether 5:5 "And if it so be that they **repent** and come unto the Father."

Example 29. Helaman 12:23 "Blessed are they who will **repent** and hearken."

The *Book of Mormon* also places particular interest in repenting in conjunction with baptism, which the Bible does not do except in one case.

Example 30. Acts 2:38: "**Repent**, and be baptized every one of you."

Though *The Book of Mormon* does not frequently use the same prophetic language as the Bible, it persistently writes about *prophecies*. The term *prophecies* appears 37 times (9.48 per million words).

Example 31. Helaman 4:21 "Remember the **prophecies** of Alma."

Example 32. Ether 13:21 "Live to see the fulfilling of the **prophecies** which had been spoken."

The use of *prophecies* refers to both previous *prophecies* and the fulfillment of future *prophecies*. An important theme throughout *The Book of Mormon* is that the people regularly reflect on fulfilled *prophecies* and conclude that future *prophecies* will similarly come to pass. Since many records were collected to write *The Book of Mormon*, the authors likely viewed the events reflectively as fulfilling *prophecy*.



**Table 9.***Keywords in the Theology category*

| Raw          |           |         |        | Raw           |           |         |        |
|--------------|-----------|---------|--------|---------------|-----------|---------|--------|
| Keyword      | Frequency | Keyness | Effect | Keyword       | Frequency | Keyness | Effect |
| prophecies   | 37        | 85.73   | 5.74   | covenanted    | 20        | 34.98   | 3.85   |
| traditions   | 29        | 64.99   | 5.38   | today         | 10        | 17.49   | 3.85   |
| belief       | 14        | 31.20   | 5.33   | conversion    | 5         | 8.75    | 3.85   |
| desires      | 39        | 85.91   | 5.23   | determination | 5         | 8.75    | 3.85   |
| endless      | 24        | 52.16   | 5.11   | harrow        | 5         | 8.75    | 3.85   |
| conditions   | 12        | 26.08   | 5.11   | pruned        | 5         | 8.75    | 3.85   |
| desirous     | 63        | 133.62  | 4.92   | recall        | 5         | 8.75    | 3.85   |
| covenants    | 31        | 65.54   | 4.89   | sense         | 5         | 8.75    | 3.85   |
| fulfilling   | 31        | 65.54   | 4.89   | convinced     | 18        | 30.32   | 3.70   |
| immortal     | 10        | 21.01   | 4.85   | pains         | 18        | 30.32   | 3.70   |
| eternity     | 9         | 18.49   | 4.70   | mankind       | 25        | 40.89   | 3.58   |
| guilt        | 16        | 32.01   | 4.53   | desirest      | 8         | 12.87   | 3.53   |
| revelations  | 16        | 32.01   | 4.53   | permitted     | 8         | 12.87   | 3.53   |
| forbidden    | 22        | 43.09   | 4.40   | disappointed  | 4         | 6.44    | 3.53   |
| expound      | 7         | 13.55   | 4.33   | elected       | 4         | 6.44    | 3.53   |
| afflictions  | 78        | 144.59  | 4.11   | experiment    | 4         | 6.44    | 3.53   |
| devilish     | 6         | 11.12   | 4.11   | honor         | 4         | 6.44    | 3.53   |
| gulf         | 6         | 11.12   | 4.11   | mansions      | 4         | 6.44    | 3.53   |
| hopes        | 6         | 11.12   | 4.11   | mortality     | 4         | 6.44    | 3.53   |
| sharpness    | 6         | 11.12   | 4.11   | ripening      | 4         | 6.44    | 3.53   |
| state        | 77        | 138.98  | 3.98   | tomorrow      | 4         | 6.44    | 3.53   |
| administered | 11        | 19.85   | 3.98   | wilfully      | 4         | 6.44    | 3.53   |

While the Bible may have been written with an eye toward the past fulfillment of *prophecies*, it does not state this explicitly. Overall, The Book of Mormon places particular emphasis on change and obedience and on following Christian teachings.

### War and Conflict

The category "War and Conflict" encompasses a variety of words related to the description of war in The Book of Mormon. The content of The Book of Mormon and the Bible both deal with war and conflict; however, the way that The Book of Mormon describes its wars and conflicts is different from the Bible.

Overall, one of the critical differences portrayed by the keywords in how the Book of Mormon talks about war and conflict as opposed to the Bible is its description of the strategic aspects of war. The Book of Mormon explains in depth many of the troops' movements, logistical aspects of war, and how the armies interacted.

**Table 10.***Keywords in the War and Conflict category*

| Raw          |           |         |        | Raw          |           |         |        |
|--------------|-----------|---------|--------|--------------|-----------|---------|--------|
| Keyword      | Frequency | Keyness | Effect | Keyword      | Frequency | Keyness | Effect |
| guards       | 30        | 73.10   | 6.43   | protection   | 7         | 13.55   | 4.33   |
| shedding     | 29        | 70.45   | 6.38   | speedy       | 7         | 13.55   | 4.33   |
| preparations | 20        | 46.78   | 5.85   | swollen      | 7         | 13.55   | 4.33   |
| support      | 38        | 88.34   | 5.77   | afflictions  | 78        | 144.59  | 4.11   |
| cries        | 18        | 41.56   | 5.70   | conquer      | 6         | 11.12   | 4.11   |
| success      | 16        | 36.37   | 5.53   | Scalp        | 6         | 11.12   | 4.11   |
| marched      | 15        | 33.78   | 5.43   | administered | 11        | 19.85   | 3.98   |
| march        | 58        | 125.30  | 5.06   | leaders      | 15        | 26.24   | 3.85   |
| disputations | 11        | 23.53   | 4.98   | threatenings | 10        | 17.49   | 3.85   |
| security     | 11        | 23.53   | 4.98   | await        | 5         | 8.75    | 3.85   |
| united       | 11        | 23.53   | 4.98   | commander    | 5         | 8.75    | 3.85   |
| leader       | 32        | 68.07   | 4.94   | contending   | 5         | 8.75    | 3.85   |
| contentions  | 54        | 110.97  | 4.70   | deceivings   | 5         | 8.75    | 3.85   |
| revile       | 18        | 36.99   | 4.70   | numbers      | 19        | 32.64   | 3.77   |
| assist       | 9         | 18.49   | 4.70   | powerful     | 14        | 23.90   | 3.75   |
| dispute      | 9         | 18.49   | 4.70   | arrived      | 9         | 15.16   | 3.70   |
| preparing    | 17        | 34.50   | 4.61   | wars         | 63        | 103.38  | 3.60   |
| slings       | 8         | 16.01   | 4.53   | suffering    | 25        | 40.89   | 3.58   |
| unite        | 8         | 16.01   | 4.53   | harden       | 41        | 66.64   | 3.56   |
| grieveth     | 15        | 29.54   | 4.43   | envyings     | 8         | 12.87   | 3.53   |
| employ       | 7         | 13.55   | 4.33   | strongest    | 4         | 6.44    | 3.53   |

*March*, or *marched*, is used repeatedly throughout The Book of Mormon to describe wars and conflicts.

Example 33. Alma 16:7 “Sidon, with their armies, and **marched** away beyond the border.”

Example 34. Alma 43:25 “Remaining part of his army and **marched** over into the land of”

The Book of Mormon uses *shedding* 29 times (7.43 per million words), and each instance refers to *blood*. However, the Bible uses *shedding* once (0.74 per million words), also referring to *blood*.

Finally, *support*, though not explicitly associated with war and conflict, is often used as such in the Book of Mormon. It is used 38 times (9.74 per million words) in the Book of Mormon and two times (1.48 per million words) in the Bible. In the Bible, *support* only means “to help, offer aid to, etc.”

Example 35. 1 Thessalonians 5:14 “Comfort the feeble-minded, **support** the weak, be patient.”

Example 36. Acts 20:35 "Ye ought to **support** the weak."

However, though there are some examples of that usage in The Book of Mormon, other usages are more conflict-oriented.

Example 37. Mosiah 19:28 "And he did **support** his guards."

Example 38. Alma 51:17 "Take up arms and **support** the cause of liberty."

Thus, The Book of Mormon places more emphasis on describing the wars and conflicts of the people. Prophets have long claimed that the last days would be a time of "wars and rumors of wars" (Matthew 24:6). The authors wrote The Book of Mormon for a modern audience, so they may have emphasized this aspect to help prepare people for prophesied conflicts. For example, the so-called war chapters of The Book of Mormon might foreshadow these future conflicts, or the discussion of conflict and war might provide insight into how to live righteously amidst these circumstances or to fight to overcome evil or Satan.

### Record Keeping

The category "Record Keeping" encompasses any of the words in The Book of Mormon that reference itself.

**Table 11.**

*Keywords in the "Record Keeping" category*

| Keyword  | Raw       |         |        | Keyword   | Raw       |         |        |
|----------|-----------|---------|--------|-----------|-----------|---------|--------|
|          | Frequency | Keyness | Effect |           | Frequency | Keyness | Effect |
| engraved | 31        | 75.74   | 6.48   | plainness | 15        | 33.78   | 5.43   |
| records  | 78        | 187.61  | 6.23   | record    | 129       | 213.65  | 3.63   |
| plates   | 145       | 346.28  | 6.12   | account   | 73        | 120.83  | 3.63   |

One of the key differences between The Book of Mormon is that it references itself much more than the Bible using words such as *plates*, *record*, *records*, and *account*. The Bible also references itself, but not often until the New Testament. Examples from The Book of Mormon include:

Example 39. Mormon 8:5 "My father hath made this **record**."

Example 40. Mormon 8:12 "And whoso receiveth this **record**."

Examples from the Bible, specifically the New Testament:

Example 41. 3 John 1:12 "And ye know that our **record** is true."

Example 42. John 1:19 "And this is the **record** of John."

These self-references indicate that the authors of The Book of Mormon had a keener awareness that others would read and use what they were writing. For example, at least one writer explicitly states that he wrote the Book of Mormon for a future audience (Mormon 8:35). This emphasis on record keeping has also been

echoed by modern-day prophets of the Church, indicating a continuing need for documenting meaningful spiritual experiences (citation needed).

## Crime

Another central theme of The Book of Mormon is *crime*, which is categorized as "Crime." Some keywords here include *robbers*, *murders*, *crime*, and *crimes*.

**Table 12.**

*Keywords in the Crime category*

| Raw        |           |         |        | Raw        |           |         |        |
|------------|-----------|---------|--------|------------|-----------|---------|--------|
| Keyword    | Frequency | Keyness | Effect | Keyword    | Frequency | Keyness | Effect |
| murders    | 30        | 59.09   | 4.43   | harden     | 41        | 66.64   | 3.56   |
| crimes     | 12        | 22.24   | 4.11   | committing | 8         | 12.87   | 3.53   |
| robbers    | 55        | 96.20   | 3.85   | crime      | 8         | 12.87   | 3.53   |
| deceivings | 5         | 8.75    | 3.85   | dangerous  | 4         | 6.44    | 3.53   |

*Robbers* often describe a group of people who left mainstream civilization to form their group of outlaws, which has increased frequently.

Example 43. 3 Nephi 3:15 “The hands of those Gadianton **robbers**”

Example 44. 3 Nephi 1:29 “To join those Gadianton **robbers**.”

There are also uses of “robbers” in other contexts.

Example 45. Ether 10:33 “There began to be **robbers** in the land.”

Example 46. Ether 13:26 “And there were **robbers**, and in fine, all manner of wickedness”

Overall, the text about *crime* in The Book of Mormon appears throughout each book. Additionally, some words in this category also refer to *crimes* against God and murders resulting from war. Thus, the theme of *crime* in the context of governments is covered more extensively in The Book of Mormon than in the Bible. Like the theme of war and conflict, this has relevance to Latter-day Saints' understanding of how to deal with conflict and wrongdoing in the modern day.

## Narrative

The "Narrative" category of The Book of Mormon deals with keywords but, in many ways, does not fit with any of the other categories. Like the Bible's "Narrative" category, it deals with words associated with the relating of events and circumstances in The Book of Mormon.

**Table 13.** *Keywords in the Narrative category*

| Raw         |           |         |        | Raw         |           |         |        |
|-------------|-----------|---------|--------|-------------|-----------|---------|--------|
| Keyword     | Frequency | Keyness | Effect | Keyword     | Frequency | Keyness | Effect |
| traditions  | 29        | 64.99   | 5.38   | eighty      | 16        | 28.59   | 3.94   |
| ball        | 10        | 21.01   | 4.85   | translate   | 5         | 8.75    | 3.85   |
| copper      | 8         | 16.01   | 4.53   | arrived     | 9         | 15.16   | 3.70   |
| delightsome | 8         | 16.01   | 4.53   | buildings   | 13        | 21.59   | 3.64   |
| hunted      | 8         | 16.01   | 4.53   | arts        | 4         | 6.44    | 3.53   |
| travel      | 13        | 24.66   | 4.23   | chickens    | 4         | 6.44    | 3.53   |
| object      | 6         | 11.12   | 4.11   | distant     | 4         | 6.44    | 3.53   |
| slaves      | 6         | 11.12   | 4.11   | industrious | 4         | 6.44    | 3.53   |

Much of the narrative of The Book of Mormon revolves around descriptions that are not as common in the Bible, such as how the people were or what their culture was like.

In the Book of Mormon, *buildings*, *arts*, *chickens*, *copper*, and *balls* are all keywords; however, *arts* and *chickens* are mentioned only a few times. There is a much stronger focus on *buildings* and things made from *copper*.

*Traditions* has the most significant effect size in the "Narrative" group, with a log ratio of 5.38. *Traditions* is a recurring theme in The Book of Mormon, with almost all references dealing with some form of *traditions* of fathers.

Example 47. Alma 30:31 "The silly **traditions** of their fathers"

Example 48. Alma 30:23 "I do not teach the foolish **traditions** of your fathers."

In the Book of Mormon, most references to *traditions* are made by people who oppose the people's religion and use these *traditions* in a negative context, describing them as silly and foolish. The writer(s) of The Book of Mormon viewed traditions as important to a people of faith, yet recognized that those people would be mocked for them.

## Government

The final key theme in The Book of Mormon is the "Government" category, which contains words related to the political system described in the Book of Mormon and the political movements throughout the story.

Specifically, one of the key themes discussed more frequently in The Book of Mormon than in the Bible is *freedom*. This topic appears particularly important regarding word usage in the Book of Alma, which contains 26 of 29 total occurrences.

Example 49. Alma 46:35 "Denied the covenant of **freedom**."

Example 50. Alma 46:12 "In memory of our God, our religion, and **freedom**, and our peace, our wives."

**Table 14.***Keywords in the Government category*

| Raw     |           |         |        | Raw        |           |         |        |
|---------|-----------|---------|--------|------------|-----------|---------|--------|
| Keyword | Frequency | Keyness | Effect | Keyword    | Frequency | Keyness | Effect |
| freedom | 29        | 64.99   | 5.38   | government | 25        | 6.90    | 4.17   |
| united  | 11        | 23.53   | 4.98   | subjected  | 6         | 11.12   | 4.11   |
| leader  | 32        | 68.07   | 4.94   | taxes      | 6         | 11.12   | 4.11   |
| unite   | 8         | 16.01   | 4.53   | leaders    | 15        | 26.24   | 3.85   |

Similar to the theme of war and conflict, this is a significant theme since the Book of Mormon was published in the United States not long after the formation of a new government and was a crucially important topic to the people living there.

### ***Conclusion***

While distinct in their origins and cultural contexts, the Bible and the Book of Mormon share numerous thematic parallels that resonate through their respective narratives. Both texts delve into profound topics central to human experience, such as morality, spirituality, and the struggle between good and evil. Despite their shared themes, each text approaches these subjects with unique emphasis and perspective, resulting in nuanced differences in portrayal.

One notable area where the two texts intersect is their exploration of warfare. While the Bible contains accounts of battles and conflicts, the Book of Mormon offers a more detailed and strategic examination of warfare, providing insights into tactics, alliances, and military leadership. The heightened focus on the intricacies of warfare reflects the historical context of the Book of Mormon, which chronicles the struggles of ancient civilizations in the Americas.

Conversely, specific themes receive more attention in one text than the other. For instance, the concept of freedom is a recurring motif in the Book of Mormon, with its narrative highlighting the importance of agency and the consequences of both righteous and wicked choices. In contrast, while the Bible touches upon themes of liberty and captivity, it does not delve into the concept of freedom with the same degree of elaboration.

Similarly, the texts diverge in their treatment of religious practices and rituals. The Bible contains detailed descriptions of ceremonies, sacrifices, and religious ordinances central to Jewish tradition, offering insights into the spiritual practices of ancient Israelites. In contrast, the Book of Mormon focuses less on physical sacrifice and ritualistic aspects of holy living. However, it highlights specific religious observances more than the Bible, especially regarding baptism.

Despite these differences, one can discern similarities in grammar and style, reflecting the standard linguistic conventions of their respective periods and cultural milieus. However, distinct linguistic features and stylistic choices also set them apart, reflecting the diverse authorship and cultural influences behind each text.

While the Bible and the Book of Mormon share many thematic threads and linguistic characteristics, their unique perspectives and emphases contribute to a rich tapestry of religious literature, offering readers varied insights into the complexities of human existence and spiritual truth. This analysis has highlighted

areas where the books are different, emphasizing the complementary nature of the books of scripture, especially for members of the Church.

### **Future Directions**

This keyness analysis highlights many critical differences between The Book of Mormon and the Bible. However, some key themes in each book must be included in the keyword lists, showing limited differences in certain areas. More research is needed to explore similarities between the books by exploring lockwords (significantly common words between two corpora when running a statistical analysis). Furthermore, though we explored a small portion of the keywords of each corpus, there remain many keywords to analyze further to discover differences between The Book of Mormon and the Bible.

This study presents a method of keyword analysis that researchers could use to explore various questions in different religious texts. One of the most notable of these relates to the problem of treating the Old Testament and New Testament as a single corpus for this study. The Old Testament and New Testament have many differences. A computational analysis of those differences could lead to new insights and research, adding to the existing work comparing the two "books" that have not been fully explored.

Future research could and should also examine the language differences between books within the Bible and the Book of Mormon and authors within scripture, such as the various gospel writers in the New Testament. Also, register analysis could be implemented in such analysis to describe each book more considerably from a register-functional perspective (see, e.g., Biber et al., 2021). Keyword analysis also helps identify critical differences in themes between the Vedas individually or in comparison to other religious texts. Furthermore, speeches could be organized into corpora and compared to answer questions such as "What do modern Evangelical Christian leaders speak about that is distinct from modern Catholic leaders?"

While many opportunities exist to learn about contemporary language use and its implications, the possibility of examining language change within and across religions over time may be even greater. Using corpora to examine the topics that were most prevalent within a specific religion 100 years ago compared to that same religion in the 21<sup>st</sup> century could lead to discoveries of how the religion has changed in its emphasis on specific themes and its treatment of those same themes. Further, comparing multiple religions across many years could lead to conclusions about how religions have influenced one another. The possibilities to learn more about the world's religions by systematically examining the language itself are vast and numerous.

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**Appendix A****Keywords of the Bible Sorted by Effect Size**

| <b>Keyword</b> | <b>Raw<br/>Frequency</b> | <b>Keyness</b> | <b>Effect</b> | <b>Keyword</b> | <b>Raw<br/>Frequency</b> | <b>Keyness</b> | <b>Effect</b> |
|----------------|--------------------------|----------------|---------------|----------------|--------------------------|----------------|---------------|
| congregation   | 364                      | 206.01         | 6.98          | cubit          | 45                       | 19.91          | 3.97          |
| gods           | 247                      | 136.99         | 6.42          | shield         | 45                       | 19.91          | 3.97          |
| ark            | 230                      | 127.00         | 6.32          | offerings      | 265                      | 116.71         | 3.94          |
| toward         | 346                      | 187.15         | 5.91          | repaired       | 44                       | 19.36          | 3.94          |
| offered        | 143                      | 76.05          | 5.63          | woman          | 348                      | 152.69         | 3.92          |
| asked          | 119                      | 62.11          | 5.37          | fat            | 130                      | 56.97          | 3.92          |
| firstborn      | 113                      | 58.63          | 5.29          | stranger       | 129                      | 56.42          | 3.90          |
| offering       | 724                      | 371.85         | 5.17          | horse          | 43                       | 18.81          | 3.90          |
| clothes        | 101                      | 51.70          | 5.13          | doest          | 43                       | 18.81          | 3.90          |
| prince         | 98                       | 49.97          | 5.09          | posts          | 42                       | 18.26          | 3.87          |
| altar          | 378                      | 191.86         | 5.04          | sitteth        | 42                       | 18.26          | 3.87          |
| beast          | 180                      | 90.74          | 4.97          | herself        | 42                       | 18.26          | 3.87          |
| breadth        | 89                       | 44.80          | 4.95          | obeyed         | 41                       | 17.71          | 3.83          |
| wash           | 87                       | 43.65          | 4.92          | walketh        | 41                       | 17.71          | 3.83          |
| company        | 86                       | 43.07          | 4.90          | walked         | 122                      | 52.58          | 3.82          |
| early          | 86                       | 43.07          | 4.90          | candlestick    | 40                       | 17.16          | 3.80          |
| vanity         | 84                       | 41.93          | 4.87          | harlot         | 40                       | 17.16          | 3.80          |
| trespass       | 82                       | 40.78          | 4.83          | shepherds      | 40                       | 17.16          | 3.78          |
| tabernacle     | 327                      | 162.59         | 4.83          | lo             | 118                      | 50.39          | 3.77          |
| lambs          | 81                       | 40.21          | 4.81          | net            | 39                       | 16.61          | 3.76          |
| tribe          | 241                      | 119.50         | 4.80          | lot            | 76                       | 32.14          | 3.72          |
| sware          | 78                       | 38.50          | 4.76          | confidence     | 38                       | 16.07          | 3.72          |
| seven          | 449                      | 220.20         | 4.70          | empty          | 38                       | 16.07          | 3.72          |
| burnt          | 366                      | 178.84         | 4.67          | corner         | 37                       | 15.53          | 3.68          |
| defiled        | 71                       | 34.51          | 4.62          | dew            | 37                       | 15.53          | 3.68          |
| doors          | 71                       | 34.51          | 4.62          | prevailed      | 37                       | 15.53          | 3.68          |
| princes        | 276                      | 133.51         | 4.58          | brake          | 73                       | 30.51          | 3.66          |
| sanctuary      | 136                      | 65.62          | 4.56          | folly          | 36                       | 14.98          | 3.64          |
| upright        | 68                       | 32.81          | 4.56          | horn           | 36                       | 14.98          | 3.64          |
| crown          | 66                       | 31.67          | 4.52          | street         | 36                       | 14.98          | 3.64          |

|           |     |        |      |                  |     |       |      |
|-----------|-----|--------|------|------------------|-----|-------|------|
| rose      | 131 | 62.78  | 4.51 | circumcisi<br>on | 35  | 14.44 | 3.60 |
| asses     | 64  | 30.54  | 4.47 | indeed           | 70  | 28.89 | 3.60 |
| upward    | 61  | 28.85  | 4.41 | corn             | 102 | 41.71 | 3.56 |
| months    | 59  | 27.72  | 4.36 | ephah            | 34  | 13.90 | 3.56 |
| mingled   | 55  | 25.48  | 4.26 | residue          | 34  | 13.90 | 3.56 |
| oxen      | 102 | 46.48  | 4.15 | goeth            | 135 | 55.08 | 3.55 |
| afar      | 51  | 23.24  | 4.15 | golden           | 66  | 26.73 | 3.52 |
| heathen   | 150 | 68.05  | 4.12 | thereon          | 66  | 26.73 | 3.52 |
| increased | 49  | 22.13  | 4.09 | cleanse          | 33  | 13.37 | 3.52 |
| host      | 192 | 86.29  | 4.06 | palaces          | 33  | 13.37 | 3.52 |
| lord      | 283 | 126.67 | 4.03 | reed             | 33  | 13.37 | 3.52 |
| entering  | 46  | 20.46  | 4.00 | turneth          | 33  | 13.37 | 3.52 |
| mischief  | 46  | 20.46  | 4.00 | wheels           | 33  | 13.37 | 3.52 |

## Appendix B

### Keywords of *The Book of Mormon* Sorted by Effect Size

| Keyword      | Raw<br>Frequency | Keyness | Effect | Keyword      | Raw<br>Frequency | Keyness | Effect |
|--------------|------------------|---------|--------|--------------|------------------|---------|--------|
| has          | 292              | 779.13  | 9.72   | devilish     | 6                | 11.12   | 4.11   |
| its          | 37               | 91.66   | 6.74   | gulf         | 6                | 11.12   | 4.11   |
| engraven     | 31               | 75.74   | 6.48   | hopes        | 6                | 11.12   | 4.11   |
| guards       | 30               | 73.10   | 6.43   | sharpness    | 6                | 11.12   | 4.11   |
| shedding     | 29               | 70.45   | 6.38   | object       | 6                | 11.12   | 4.11   |
| records      | 78               | 187.61  | 6.23   | slaves       | 6                | 11.12   | 4.11   |
| plates       | 145              | 346.28  | 6.12   | crimes       | 12               | 22.24   | 4.11   |
| temporal     | 22               | 52.01   | 5.98   | naught       | 18               | 33.36   | 4.11   |
| preparations | 20               | 46.78   | 5.85   | nethermost   | 6                | 11.12   | 4.11   |
| support      | 38               | 88.34   | 5.77   | subjected    | 6                | 11.12   | 4.11   |
| prophecies   | 37               | 85.73   | 5.74   | taxes        | 6                | 11.12   | 4.11   |
| handed       | 18               | 41.56   | 5.70   | administered | 11               | 19.85   | 3.98   |
| cries        | 18               | 41.56   | 5.70   | state        | 77               | 138.98  | 3.98   |
| success      | 16               | 36.37   | 5.53   | administered | 11               | 19.85   | 3.98   |
| marched      | 15               | 33.78   | 5.43   | eighty       | 16               | 28.59   | 3.94   |
| plainness    | 15               | 33.78   | 5.43   | repent       | 198              | 351.24  | 3.91   |

|              |     |        |      |                   |     |        |      |
|--------------|-----|--------|------|-------------------|-----|--------|------|
| traditions   | 29  | 64.99  | 5.38 | endeth            | 5   | 8.75   | 3.85 |
| traditions   | 29  | 64.99  | 5.38 | leaders           | 15  | 26.24  | 3.85 |
| freedom      | 29  | 64.99  | 5.38 | threatenings      | 10  | 17.49  | 3.85 |
| perhaps      | 43  | 96.19  | 5.37 | await             | 5   | 8.75   | 3.85 |
| belief       | 14  | 31.20  | 5.33 | commander         | 5   | 8.75   | 3.85 |
| desires      | 39  | 85.91  | 5.23 | contending        | 5   | 8.75   | 3.85 |
| endless      | 24  | 52.16  | 5.11 | deceivings        | 5   | 8.75   | 3.85 |
| conditions   | 12  | 26.08  | 5.11 | covenanted        | 20  | 34.98  | 3.85 |
| march        | 58  | 125.30 | 5.06 | today             | 10  | 17.49  | 3.85 |
| disputations | 11  | 23.53  | 4.98 | conversion        | 5   | 8.75   | 3.85 |
| security     | 11  | 23.53  | 4.98 | determinatio<br>n | 5   | 8.75   | 3.85 |
| united       | 11  | 23.53  | 4.98 | harrow            | 5   | 8.75   | 3.85 |
| united       | 11  | 23.53  | 4.98 | pruned            | 5   | 8.75   | 3.85 |
| leader       | 32  | 68.07  | 4.94 | recall            | 5   | 8.75   | 3.85 |
| leader       | 32  | 68.07  | 4.94 | sense             | 5   | 8.75   | 3.85 |
| desirous     | 63  | 133.62 | 4.92 | translate         | 5   | 8.75   | 3.85 |
| covenants    | 31  | 65.54  | 4.89 | robbers           | 55  | 96.2   | 3.85 |
| fulfilling   | 31  | 65.54  | 4.89 | deceivings        | 5   | 8.75   | 3.85 |
| immortal     | 10  | 21.01  | 4.85 | entire            | 5   | 8.75   | 3.85 |
| ball         | 10  | 21.01  | 4.85 | leaders           | 15  | 26.24  | 3.85 |
| sufficeth    | 10  | 21.01  | 4.85 | numbers           | 19  | 32.64  | 3.77 |
| remainder    | 57  | 118.49 | 4.77 | powerful          | 14  | 23.90  | 3.75 |
| insomuch     | 181 | 372.48 | 4.70 | altered           | 9   | 15.16  | 3.70 |
| contentions  | 54  | 110.97 | 4.70 | arrived           | 9   | 15.16  | 3.70 |
| revile       | 18  | 36.99  | 4.70 | convinced         | 18  | 30.32  | 3.70 |
| assist       | 9   | 18.49  | 4.70 | pains             | 18  | 30.32  | 3.70 |
| dispute      | 9   | 18.49  | 4.70 | arrived           | 9   | 15.16  | 3.70 |
| eternity     | 9   | 18.49  | 4.70 | inasmuch          | 31  | 51.91  | 3.67 |
| sufficiently | 18  | 36.99  | 4.70 | buildings         | 13  | 21.59  | 3.64 |
| expedient    | 62  | 126.97 | 4.67 | record            | 129 | 213.65 | 3.63 |
| preparing    | 17  | 34.50  | 4.61 | account           | 73  | 120.83 | 3.63 |
| impart       | 16  | 32.01  | 4.53 | durst             | 38  | 62.48  | 3.60 |

|             |     |        |      |              |    |        |      |
|-------------|-----|--------|------|--------------|----|--------|------|
| ending      | 8   | 16.01  | 4.53 | wars         | 63 | 103.38 | 3.60 |
| slings      | 8   | 16.01  | 4.53 | suffering    | 25 | 40.89  | 3.58 |
| unite       | 8   | 16.01  | 4.53 | mankind      | 25 | 40.89  | 3.58 |
| guilt       | 16  | 32.01  | 4.53 | supposed     | 33 | 53.77  | 3.57 |
| revelations | 16  | 32.01  | 4.53 | harden       | 41 | 66.64  | 3.56 |
| copper      | 8   | 16.01  | 4.53 | harden       | 41 | 66.64  | 3.56 |
| delightful  | 8   | 16.01  | 4.53 | block        | 4  | 6.44   | 3.53 |
| hunted      | 8   | 16.01  | 4.53 | envyings     | 8  | 12.87  | 3.53 |
| unite       | 8   | 16.01  | 4.53 | strongest    | 4  | 6.44   | 3.53 |
| suppose     | 63  | 125.59 | 4.50 | desirest     | 8  | 12.87  | 3.53 |
| grieveth    | 15  | 29.54  | 4.43 | permitted    | 8  | 12.87  | 3.53 |
| murders     | 30  | 59.09  | 4.43 | disappointed | 4  | 6.44   | 3.53 |
| forbidden   | 22  | 43.09  | 4.40 | elected      | 4  | 6.44   | 3.53 |
| employ      | 7   | 13.55  | 4.33 | experiment   | 4  | 6.44   | 3.53 |
| obtaining   | 7   | 13.55  | 4.33 | honor        | 4  | 6.44   | 3.53 |
| protection  | 7   | 13.55  | 4.33 | mansions     | 4  | 6.44   | 3.53 |
| speedy      | 7   | 13.55  | 4.33 | mortality    | 4  | 6.44   | 3.53 |
| swollen     | 7   | 13.55  | 4.33 | ripening     | 4  | 6.44   | 3.53 |
| expound     | 7   | 13.55  | 4.33 | tomorrow     | 4  | 6.44   | 3.53 |
| amongst     | 14  | 27.09  | 4.33 | tomorrow     | 4  | 6.44   | 3.53 |
| exceedingly | 267 | 510.32 | 4.26 | wilfully     | 4  | 6.44   | 3.53 |
| travel      | 13  | 24.66  | 4.23 | arts         | 4  | 6.44   | 3.53 |
| extended    | 13  | 24.66  | 4.23 | chickens     | 4  | 6.44   | 3.53 |
| government  | 25  | 46.9   | 4.17 | distant      | 4  | 6.44   | 3.53 |
| soberness   | 6   | 11.12  | 4.11 | industrious  | 4  | 6.44   | 3.53 |
| afflictions | 78  | 144.59 | 4.11 | committing   | 8  | 12.87  | 3.53 |
| conquer     | 6   | 11.12  | 4.11 | crime        | 8  | 12.87  | 3.53 |
| scalp       | 6   | 11.12  | 4.11 | dangerous    | 4  | 6.44   | 3.53 |
| afflictions | 78  | 144.59 | 4.11 | exceed       | 16 | 25.75  | 3.53 |

