

AN ABSTRACT OF THE DISSERTATION OF

Paul T. Callister for the degree of Doctor of Philosophy in Counseling presented on December 6, 2021.

Title: The Book of Mormon Topic Structure, Keyness Distinctions, and Collocates of Deity: Implications for Mental Health Professionals

Abstract approved:

Cass Dykeman

Understanding the spiritual worldview of clients is a core element of multicultural competency for mental health professionals. One spiritual and religious population is members of The Church of Jesus Christ of Latter-day Saints and related Latter-day Saint populations. The Book of Mormon is an important sacred text of this population. A corpus linguistic examination of the Book of Mormon provides mental health professionals with an understanding of the worldview of Latter-day Saint community members, and this understanding can inform competent counseling practices. This dissertation project has two studies. The first examined the spiritually informed worldview of members of The Church of Jesus Christ of Latter-day Saints through exploration of the topical structure of the Book of Mormon sacred text. This study utilized latent Dirichlet allocation (LDA) to identify the latent topical structure of the Book of Mormon. Thirty topics were identified. Levels of topics among books, the title page, and witness statements are given. Implications of results, limitations, and suggestions for further study are discussed. The top latent topic was the establishment and collapse of the Church of

Christ. The second study examined the worldview of members of The Church of Jesus Christ of Latter-day Saints through keyness and collocation analysis of the Book of Mormon as a sacred text. Keywords of the Book of Mormon were identified by using the Hebrew Bible and New Testament as reference corpuses, and the Book of Mormon was used as a reference corpus to identify biblical keywords as well. Collocates of deity within the Book of Mormon were identified and examined. Limitations and implications for research and practice are discussed. When comparing the Book of Mormon to the New Testament, the two words with the strongest keyness were “pass” and “land” and when comparing the Book of Mormon to the Hebrew Bible the two words with the strongest keyness were “yea” and “Lamanites”. Both studies expand multicultural awareness in line with CACREP Standard 2.F.2.g (CACREP, 2016). The first study examined the topic structure of the Book of Mormon and the levels of topics among the books, title page, and witness statements. The second study examined the Book of Mormon as a whole, compared to the Hebrew Bible and New Testament and in relation to deity. Both assist in accomplishing this multicultural standard. These studies support a cultural understanding of members of the Latter-day Saint community for mental health professionals and other providers.

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The Book of Mormon Topic Structure, Keyness Distinctions, and Collocates of Deity:
Implications for Mental Health Professionals

by

Paul T. Callister

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APPROVED:

Major Professor, representing Counseling

Dean of the College of Education

Dean of the Graduate School

I understand that my dissertation will become part of the permanent collection of Oregon State University libraries. My signature below authorizes release of my dissertation to any reader upon request.

Paul T. Callister, Author

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CONTRIBUTION OF AUTHORS

Dr. Cass Dykeman assisted with the methodology and design of this study, in addition to refining the manuscript narrative. Evelyn Stamey provided assistance with statistical analysis for manuscripts 1 and 2.

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Chapter 1: A General Introduction

Overview

Multicultural competence is an ethical and accreditation imperative for mental health counselors. Along with core identities such as race, age, and gender, spirituality is one of the important areas of the cultural background of a person. It may involve associations with communities and formal or informal practices, and it often forms a key part of identity. Spirituality shapes worldview and is a lens through which many people organize their understanding of the world. The effective counselor seeks to understand client spirituality.

Members of The Church of Jesus Christ of Latter-day Saints and associated Latter-day Saint communities represent a distinct spirituality. Latter-day Saint church members constitute 16.5 million people, over 2% percent of the U.S. population, or approximately 0.2 percent of the world population (The Church of Jesus Christ of Latter-day Saints, n.d.). The *Harvard Encyclopedia of American Ethnic Groups* (Themstrom et al., 1980) lists this group as one based on religion rather than national origin or ancestry. This spiritual group has a distinct and unique worldview.

Worldview is a way of seeing, organizing, and making sense of the world and of reality. The worldview of Latter-day Saints includes a view and meaning of life that involves relationships with God, Jesus Christ, and prophets now on earth. These perspectives are grounded in the sacred texts of this group, and standing out among the texts sacred to this community is the Book of Mormon. Joseph Smith, the founder of this organized system of faith, described the Book of Mormon as, “The keystone of our religion” (Woodruff, 1841, p. 112), and the text describes itself as containing the gospel of Jesus Christ, or a way to live for followers of Christ. Understanding such sacred texts, counselors may be able to increase their cultural competence with this group.

The Book of Mormon as a sacred text of Latter-day Saint community members has not been evaluated from a counseling perspective through corpus linguistic tools. This research seeks to disrupt current practice by expanding the understanding of this spiritual and ethnic group through analysis and

understanding of their sacred text.

This dissertational research aims to better understand clients with a Latter-day Saint background through examination of this sacred text by means of corpus linguistic methods. It is expected that this research will contribute to informing the counseling world regarding aspects of the spiritual and cultural background of Latter-day Saints and community members. It is also expected that members of these communities will benefit from corpus linguistic analysis of their sacred text as this analysis can make more transparent implicit belief structures.

Relationship of Dissertation Topic to CACREP Standards

The Council for Accreditation of Counseling and Related Educational Programs (CACREP, 2016) standard 2.F.2.g states that counselors need to have social and culture competence regarding “The impact of spiritual beliefs on client’s and counselors’ worldviews” (p. 9). One religious and spiritual population in the U.S. and in the world are members of The Church of Jesus Christ of Latter-day Saints and Latter-day Saint communities. There is limited information about working with this population in a counseling setting. This research aims to increase the knowledge base of the counseling fields regarding working with this population.

State of Scientific Knowledge with Regard to Dissertation Topic

In a review of the literature on how the Book of Mormon informs the worldview of Latter-day Saint communities, nine themes emerged. These themes were: (a) content specific definitions of deity, scripture, and worldview; (b) definition of the Book of Mormon and its significance to members of The Church of Jesus Christ of Latter-day Saints and Latter-day Saint communities; (c) the relationship between worldview and scripture, view of deity, and language; (d) the relationship of counselor attunement to client worldview and effective counseling; (e) definition of topic, topic structure, and latent Dirichlet allocation (LDA); (f) what is the extant research on using LDA to study sacred texts; (g) research on collocations of deity; (h) research on keyness; and (i) sacred canonical considerations.

There are three key terms that need to be defined in order for the objectives of this study to be clear. These terms are (a) deity, (b) scripture, and (c) worldview. The term *deity* refers to a god or goddess in polytheistic religion and to the creator and supreme being in monotheistic religions, such as Christianity. In the Hebrew Bible and New Testament, God refers to a personal God who is the creator of heavens and earth, who is involved in the world (Bullock, 1997). Members of The Church of Jesus Christ of Latter-day Saints also view God as the supreme governor of the universe and the father of humankind.

The word *scripture* comes from the word *scribere*, meaning to write (Thompson, 1995). It is used to denote writings that are recognized as sacred and inspired (The Church of Jesus Christ of Latter-day Saints, 2019). Within Latter-day Saint communities, scripture is viewed as (a) inspired by God; and (b) as providing a model for living (Davies & Madsen, 1992).

The term *worldview* is defined as a particular way of viewing life and existence. The *Oxford English Dictionary* defines worldview as “a set of fundamental beliefs, values, etc., determining or constituting a comprehensive outlook on the world” (Oxford University Press, 2020).

Along with the Holy Bible, the Book of Mormon is considered as scripture by members of The Church of Jesus Christ of Latter-day Saints. It was first published in 1830 by Joseph Smith, claims to be a record of ancient peoples who lived in the Americas, and contains poetry, narrative texts, sermons, speeches, letters, allegory, metaphor, imagery, typology, wisdom literature, and apocalyptic literature (Rust, 1992). The Book of Mormon consists of 15 books; its writers include religious, spiritual, and community leaders, and it also contains a title page and witness statements. The initial publication of the Book of Mormon was associated with the establishment of The Church of Jesus Christ of Latter-day Saints in 1830. Like other scriptures, the Book of Mormon is considered by Latter-day Saints to be the word of God and a tool by which one receives personal revelation and inspiration from God (Bushman, 2008).

For members of The Church of Jesus Christ of Latter-day Saints, worldview is related to scriptures, view of deity, and language. The Book of Mormon points to a God who is actively involved with humankind, set the stage for the establishment of a new church of Christ in the latter days, and witnesses of Jesus Christ leading his kingdom through prophets, apostolic gifts, and personal revelation. The Book of Mormon lays out a way of viewing all human events, realities, and truths according to the eternal principles of the gospel of Jesus Christ.

Joseph Smith, the founder of The Church of Jesus Christ of Latter-day Saints, taught about the importance of a correct view of God. He taught that “the great parent of the universe looks upon the whole of the human family with a fatherly care and paternal regard” (Smith, 1842, p. 759) and that “if men do not comprehend the character of God, they do not comprehend themselves” (Richards, 1844, p. 67). As such, members of The Church of Jesus Christ of Latter-day Saints hold a worldview of God as a “Heavenly Father” who is a personal and loving father, and their relationship to him being that of “children of God”. Thus, for Latter-day Saints, the view of God is tied to worldview.

Additionally, worldview is directly tied to language. The Prussian philologist Wilhelm von Humboldt (1836/2000) originated the idea that language and worldview are inextricable. According to von Humboldt, worldview is embedded in language, and through language humans are able to make use of and develop their mental processes to make sense of reality. He believed that this is true in all languages and among all groups of people. Thus, examination of language can help in understanding the worldview of groups and individuals. In addition, understanding language and worldview can facilitate effective multicultural counseling.

To provide effective counseling, counselors need to possess a robust understanding of a client’s worldview. CACREP (2016) mandates that understanding the spiritual aspects of a client’s worldview is a part of social and diversity competence. Sue and Sue (2013) also listed understanding the worldview of clients as one of the core cultural competencies. Focusing on the worldview of the individual client

allows the therapy to be personalized. Personally-relevant interventions increase client engagement and increase effectiveness for diverse groups (Hall et al., 2020). Understanding of worldview is directly linked to therapist-client attunement and effective therapy. Also, examination of language can promote understanding of diverse perspectives.

Before proceeding with discussion on the topic structure of the Book of Mormon, attention must be made to definitions of both topic and topic structure. Informally, the term topic refers to groups of words that are associated under a single theme (DiMaggio et al., 2013). More formally, Blei (2012) defined a topic as a distribution over a fixed vocabulary. In reference to topic structure, Blei noted that it is a hidden (i.e., latent) structure composed of the topics, per-document topic distributions, and the per-document per-word topic assignments.

There have been various previous attempts to characterize the Book of Mormon's topical content. A number of researchers have analyzed such things as style variations and author wordprints of the Book of Mormon, with goals of assessing authenticity claims of the sacred text (e.g., Burgon, 1958; Larsen et al., 1980). Latter-day Saint leaders have provided reference guides to the Book of Mormon, beginning in 1835 (Underwood & Underwood, 1985). However, these reference guides consist of chronological and alphabetical tables of contents rather than identification of topic structure. Additionally, while there have been numerous commentaries about the Book of Mormon, these also have not identified topic structure. Bean (n.d.) reported on prior text mining in the Book of Mormon in use of identification of intertext similarities and reported that "although topic models were not employed in this work, it probably could have benefitted from it" (p. 1).

Collocation is a linguistic tool that adds understanding to the meaning of words. Indeed, eminent linguist J. R. Firth (1957) noted that "you shall know a word by the company it keeps" (p. 6). In general, collocations can be defined as "combinations of words that habitually co-occur in texts and corpora" (Brezina, 2018, p. 67). After eliminating stopwords, the five most frequent collocations of God

in the King James Version are LORD, God, Israel, man, and house (Callister, 2020). Biblical collocation gives meaning to how this text represents deity and serves as a basis for comparison with other sacred texts.

Keyness refers to words that occur with unusual frequency in a given text by comparison with a reference corpus. It is closely related to the notion of aboutness—that is, the understanding of main concepts, topics, and attitudes presented or discussed in a text (Gabrielatos, 2018). Keyness has been used to study sacred and other texts. For example, Wang (2014) used keyness to examine the use of repetition in the biblical book of Matthew and recommended further use of keyness to understand biblical texts.

The sacred canon of The Church of Jesus Christ of Latter-day Saints consists of the Holy Bible, the Book of Mormon, the Doctrine and Covenants, and the Pearl of Great Price. In this study we will examine intercanon distinctions, whereas further research may look at sacred text outside of the Latter-day Saint canon (e.g., the Quran, the Vedas, the Tripitaka). Because the King James Version (KJV) of the Holy Bible was used at the time that the Book of Mormon was first published in 1830 and remains the standard version for this community, the KJV will be used. According to reception theory (Knight, 2010), selection of this English language version allows comparison with the biblical texts that have been received and thus influenced Latter-day Saint worldview formation. As well, the early modern and late middle English language of both the KJV and the Book of Mormon also support their comparison.

Description of Research Manuscript 1

Statement of Research Questions

Two research questions guided this study. First, what is the topical structure of the Book of Mormon? Second, what are the levels of the topics by book?

Brief Overview of Method

The study employed a topic modeling design using LDA, a statistical model for identifying topics

in documents through machine learning (Blei, 2012). The process of identifying topics, called topic modeling, assumes that documents contain multiple topics. The goal of topic modeling is to discover the topics from a collection of documents and to identify the hidden (i.e., latent) topical structure.

Brief Overview of Data Analysis

The topic model used for the Book of Mormon corpus was LDA, and the data was fit using the variational expectation-maximization (VEM) algorithm as implemented in the topicmodel package in R (Grün and Hornik, 2011). The data supplied to the topicmodel::LDA function was a document-term matrix with a term-frequency weighting. The number of topics k was set to 30. All remaining parameters were left as defaults. The unit of analysis was individual words as expressed by a document-term matrix with term-frequency weighting (Grün and Hornik, 2011), which is also known as a bag-of-words approach. For the first research question, we evaluated the top 50 beta scores to define each topic. For the second research question, we used gamma scores to measure the distribution of topics over documents. All analyses were conducted using R.

Target Journal

For the first manuscript, *Issues in Religion and Psychotherapy* was selected as the target journal. This is an online peer-reviewed journal that addresses the interface between spirituality and religion and mental health, especially concerning the Latter-day Saint community.

A recent article published in *Issues in Religion and Psychotherapy* was related to mental health therapy and sacred texts. In “Analyzing Anger References in the Scriptures: Connections to Therapy in a Religious Context,” Darowski et al. (2018) examined scriptural conceptualizations of the healthy and harmful uses of anger by humans as well as deity.

Preregistration, Preprint, and Open Science Plan

The research questions for this manuscript have been preregistered with the Open Science Foundation using the AsPredicted.org template (<https://osf.io/x2hev/>). The preprint of the completed

article manuscript will be deposited with PsyArXiv (<https://psyarxiv.com/>). There are no preprint restrictions listed for the target journal. Finally, this manuscript will bear the following Open Science badges: Preregistered, Open Data, and Open Materials (<https://www.cos.io/initiatives/badges>).

Description of Research Manuscript 2

Statement of Research Questions

There were five research questions that formulated this study. First, what word usage distinguishes the Book of Mormon from the New Testament? Second, what word usage distinguishes the New Testament from the Book of Mormon? Third, what word usage distinguishes the Book of Mormon from the Hebrew Bible? Forth, what word usage distinguishes the Hebrew Bible from the Book of Mormon? Fifth, in the Book of Mormon, what are the words most closely related to the proper noun “God”?

Brief Overview of Method

In this study we employed keyness and collocation to examine themes in the Book of Mormon. Keyness refers to the words that occur in a corpus of interest compared to a reference corpus and is related to concepts of unique aboutness. Using this method, we identified the words that are unique: (a) in the Book of Mormon compared to the Hebrew Bible, (b) in the Book of Mormon compared to the New Testament, (c) in the Hebrew Bible compared to the Book of Mormon, and (d) in the New Testament compared to the Book of Mormon.

Collocation refers to words that occur in a node word of interest within a text with frequency greater than chance. In this study we examined the collocates that occur with the node word “God”.

Brief Overview of Data Analysis

The first four research questions compare the proportions for each token in the corpus of interest and a reference corpus. As such, the proper statistical analysis is the log-likelihood (G^2 ; Brezina, 2018). The effect used will be Bayesian Information Criterion (BIC). The BIC strength descriptors

employed were those of Neath and Cavanaugh (2012). These analyses were conducted using R. For the fifth research question, the measure of association used was the square of mutual information (MI²; Brezina, 2018).

Target Journal

For the second manuscript, *BYU Studies Quarterly* was selected as the target journal. *BYU Studies Quarterly* focuses on scholarship related to The Church of Jesus Christ of Latter-day Saints and is published by the church-owned Brigham Young University. This journal has an impact factor of .1 with a five-year impact factor of 0.101.

A recent article that was published in *BYU Studies Quarterly* was related to sacred texts and Latter-day Saint community members. In *The Bible in the Millennial Star and the Woman's Exponent: Biblical Use and Interpretation in The Church of Jesus Christ of Latter-day Saints in the late nineteenth century*, Easton-Flake (2021) reviewed how the biblical and other scriptural texts have been interpreted by church members.

Preregistration, Preprint, and Open Science Plan

The research questions for this manuscript have been preregistered with the Open Science Foundation using the AsPredicted.org template (<https://osf.io/x2hev/>). The preprint of the completed article manuscript will be deposited with PsyArXiv (<https://psyarxiv.com/>). Sherpa/Romeo reports no information on preprint restrictions listed for the target journal (<https://v2.sherpa.ac.uk/romeo/>). Finally, this manuscript will bear the following Open Science badges: Preregistered, Open Data, and Open Materials (<https://www.cos.io/initiatives/badges>).

Glossary of Terms

Book of Mormon: A sacred text of The Church of Jesus Christ of Latter-day Saints. It is a part of the canon of scripture for Latter-day Saints, along with The Holy Bible, the Doctrine and Covenants, and Pearl of Great Price. It was published in 1830 by Joseph Smith, who claimed to translate it by the power

of God. According to the text, the authors are primarily prophet-writers who lived on the American continent from approximately 2200 BCE to 421 CE.

The Book of Mormon: The Earliest Text: The culmination of a critical text project led by Royal Skousen. It was produced through examination of Book of Mormon scribal, editing, and other text changes and attempts to restore the original language that Joseph Smith orally produced for the original text scribes.

Corpus linguistics: The study of language through examination of bodies of text that occur in natural settings through computer-based methods of analysis (McEnery & Hardie, 2011).

Collocation: A combination of words that occur with each other at a frequency greater than chance. It includes a node, which is a word of interest, and collocates of the node, which are words that occur at a high frequency with the node (Baker et al., 2006).

Keyness: Refers to words that occur with unusual frequency in a given text by comparison with a reference corpus. It suggests what is unique about a text. It is closely related to the notion of aboutness—that is, the understanding of main concepts, topics, and attitudes presented or discussed in a text (Gabrielatos, 2018).

Latent Dirichlet allocation (LDA): A Bayesian statistical method for identifying topics in documents through machine learning (Blei, 2012). This process of identifying topics, called topic modeling, assumes that documents contain multiple topics. The goal of topic modeling is to discover the topics from a collection of documents and to identify the hidden (i.e., latent) topical structure.

Thematic Link of Research Manuscripts

Both manuscripts seek to expand multicultural awareness in line with CACREP Standard 2.F.2.g (CACREP, 2016). Manuscript 1 examined the topic structure of the Book of Mormon and the levels of topics among the books, title page, and witness statements. Manuscript 2 examined the Book of Mormon as a whole, compared to the Hebrew Bible and New Testament, and in relation to deity. Both

assist in accomplishing this multicultural standard. These studies support a cultural understanding of members of the Latter-day Saint community for counselors and other providers.

Organization of the Dissertation

The first chapter is an overview of the entire dissertation. In the second chapter, the first study analyzed the topic structure of the Book of Mormon using LDA. In the third chapter, the second study analyzed the keyness and collocates of deity in the Book of Mormon text. The fourth chapter includes the results of both studies along with their contributions to the field.

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Chapter 2: A Research Manuscript


**The Topic Structure of the Book of Mormon:
Worldview Insights for Mental Health Professionals**

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The research contained in this manuscript was part of the dissertation of the first author and given the published nature of the material studied, a human subjects review was not required.

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Abstract

This study examined the spiritually informed worldview of members of The Church of Jesus Christ of Latter-day Saints through exploration of the topical structure of the Book of Mormon sacred text. Latent Dirichlet allocation (LDA) was used to identify the latent topical structure of the Book of Mormon. The two research questions were (RQ1): What is the topical structure of the Book of Mormon?, and (RQ2): How do the level of topics vary by individual subcorpuses within the Book of Mormon? This effort produced a 30-topic model. The levels of 30 topics among the sections of the Book of Mormon were detailed. Implications, limitations, and suggestions for further study were presented. In addition, a discussion on how the worldview structures produced by this study can inform the practice of mental health professionals takes place.

Keywords: multiculturalism, CACREP, latent Dirichlet allocation, LDA, artificial intelligence, natural language processing, topic modeling, spirituality, corpus linguistics, Book of Mormon, counseling, worldview, religion, Latter-day Saints, theistic values

The Topic Structure of the Book of Mormon: A Latent Dirichlet Allocation Study

Since the time of William James, counselors have recognized the interrelationship between spirituality and mental health. Within counseling, both the Council for Accreditation of Counseling and Related Educational Programs (CACREP) and the American Counseling Association (ACA) ethical standards embody James' perspective. Despite this confluence, mental health professionals have been slow to acknowledge and engage in clinical work with this reality. The aim of the present study is to close the gap between professional values and practice.

The CACREP national accreditation standards set forth a variety of multicultural learning goals. One such goal (2.F.2.g) focuses on spirituality. The test of this goal is as follows: "The impact of spiritual beliefs on clients' and counselors' worldviews" (CACREP, 2016, p. 9). Within the U.S., one significant religious and spiritual group consists of members of The Church of Jesus Christ of Latter-day Saints and related Latter-day Saint communities. There are only a few studies related to the relationship between this community's sacred text and meaning-making. As such, counselors working with these communities are ignorant of the text their clients rely on for meaning-making and life direction. Such ignorance limits their ability to be clinically effective.

In a review of the literature on the topical structure of the Book of Mormon and the influence of the Book of Mormon on The Church of Jesus Christ of Latter-day Saints and related Latter-day Saint communities, nine key points emerged in reference to the present study. These points were: (a) the definition of scripture, (b) the definition of the Book of Mormon, (c) the nature of authorship in the Book of Mormon, (d) the significance of the Book of Mormon to Latter-day Saint communities, (e) the role of the Book of Mormon in the Latter-day Saint community's worldview formation, (f) definition of topic and topic structure, (g) previous attempts to determine the topic structure of the Book of Mormon, (h) what is latent Dirichlet allocation (LDA), and (i) the definition of extant research on using LDA to study sacred texts.

The word “scripture” comes from the word *scribere*, meaning *to write* (Thompson, 1995). It is used to denote writings that are recognized as sacred and inspired (The Church of Jesus Christ of Latter-day Saints, 2019). Within Latter-day Saint communities, scripture is viewed as (a) inspired by God, (b) provides a model for living, and (c) has a role in religious and spiritual development for many people who consider themselves religious or spiritual (Davies & Madsen, 1992).

Along with the *Holy Bible*, the Book of Mormon is considered as scripture by The Church of Jesus Christ of Latter-day Saints and members of Latter-day Saint communities. It was first published in 1830 by Joseph Smith, the founder of The Church of Jesus Christ of Latter-day Saints. The book claims to be a record of ancient peoples who lived in the Americas. It contains poetry, narrative texts, sermons and speeches, letters, allegory, metaphor, imagery, typology, wisdom literature, and apocalyptic literature (Rust, 1992).

The Book of Mormon consists of 15 books, each named after the book’s primary author. However, the Book of Mormon consists of many writers. The writers include religious and spiritual leaders, community leaders, and record keepers. It also includes other figures whose voices and words are included, as well as preexisting biblical and non-biblical writings that are included in the text. The Book of Mormon also contains a title page and witness statements, which were included in the original publications.

The initial publication of the Book of Mormon was associated with the establishment of The Church of Jesus Christ of Latter-day Saints in 1830, and Joseph Smith called it “the keystone of our religion” (Woodruff, 1841, p. 112). Like other scripture, the Book of Mormon is considered by Latter-day Saints to be the word of God, and a tool by which one receives personal revelation and inspiration from God (Bushman, 2008).

The Book of Mormon shapes the worldview of Latter-day Saints. According to Palmer (1996), a worldview is “the fundamental cognitive orientation of a society, a subgroup, or even an individual” (pp.

113-114). The Book of Mormon points to a God who is actively involved with humankind, set the stage for the establishment of a new church of Christ in the latter days, and witnesses of Jesus Christ leading his kingdom through prophets, apostolic gifts, and personal revelation. For those who become members of the Latter-day Saint church, the Book of Mormon lays out a way of viewing all human events, realities, and truths according to the eternal principles of the gospel of Jesus Christ. As such, the Book of Mormon is the foundational text for worldview formation for members of the Latter-day Saint church.

Before proceeding with discussion on the topic structure of the Book of Mormon, attention must be made to definitions of both topic and topic structure. Informally, the term *topic* refers to groups of words that are associated under a single theme (DiMaggio et al., 2013). More formally, Blei (2012) defined a topic as a distribution over a fixed vocabulary. In reference to *topic structure*, Blei (2012) noted that it is a hidden (i.e., latent) structure composed of the topics, per-document topic distributions, and the per-document, per-word topic assignments.

There have been various previous attempts to characterize the Book of Mormon's topical content. A number of researchers have analyzed such things as style variations and author wordprints of the Book of Mormon, with the goal of assessing authenticity claims of the sacred text (e.g., Burgon, 1958; Larsen et al., 1980). Latter-day Saint leaders have provided reference guides to the Book of Mormon, beginning in 1835 (Underwood & Underwood, 1985). However, these reference guides consist of chronological and alphabetical tables of contents rather than identification of topic structure. Additionally, while there have been numerous commentaries about the Book of Mormon, these also have not identified topic structure. Bean (n.d.) reported on prior text mining in the Book of Mormon in the use of identification of intertext similarities and stated that "although topic models were not employed in this work, it probably could have benefitted from it" (p. 1).

The goal of topic modeling is to identify the hidden (i.e., latent) topic structure from a collection of documents. One approach to this modeling is latent Dirichlet allocation (LDA). LDA is a Bayesian

statistical method for identifying topics in documents through machine learning (Blei, 2012). The LDA algorithm contains the following: (a) words per topic and (b) number of topics per document. True to the Bayesian nature of the algorithm, it also contains priors for both words per topic and number of topics per document. These priors are Dirichlet distributions (i.e., a distribution of multiple probability distributions; Ng et al., 2011). These priors serve as hyperparameters for the analysis and hence the name of this form of modeling.

LDA has been used previously to study sacred texts. For example, Siddiqui et al. (2013) used LDA to identify the topics in the Holy Quran. Siddiqui et al. was able to identify the major topics in the surahs (i.e., chapters or sections of the Quran), as well as the terms that describe those topics. Another example of LDA use in sacred texts include Qahl (2014), who compared sections of the Quran and Hebrew Bible, to identify text similarities. Qahl found that the Hebrew Bible Deuteronomy text and four Quranic chapters were strongly related to each other. These results demonstrate the utility of LDA in use with sacred text corpuses.

Given the aforementioned research needs and gaps, two research questions were designed to guide this study:

RQ1: What is the topical structure of the Book of Mormon?

RQ2: How do the level of topics vary by individual subcorpuses within the Book of Mormon?

Method

Design

The topic model used for the Book of Mormon corpus was LDA, and the data were fit using the variational expectation-maximization (VEM) algorithm as implemented in the topicmodel package in R (Grün & Hornik, 2011). The data supplied to the topicmodel::LDA function was a document-term matrix with a term-frequency weighting. The number of topics k was set to 30. All remaining parameters were

left as defaults. The unit of analysis was individual words as expressed by a document-term matrix with term-frequency weighting (Grün & Hornik, 2011), which is also known as a bag-of-words approach.

Corpus

Register, Sources, and Scope

The register is sacred texts. The source for the corpus was *The Book of Mormon: The Earliest Text* (Skousen, 2009). The subcorpus were the individual books within the Book of Mormon text, plus the title page and witness statements. In the order they appear, these individual subcorpus were: title page, 1 Nephi, 2 Nephi, Jacob, Enos, Jarom, Omni, Words of Mormon, Mosiah, Alma, Helaman, 3 Nephi, 4 Nephi, Mormon, Ether, Moroni, and witness statements. For both research questions, the whole corpus was used. The token count was 1,231,000, and the type count was 16,511.

Preprocessing

Yale University Press and the editor gave permission to use the text files of *The Book of Mormon: The Earliest Text* (Skousen, 2009) for this dissertation study. The files were in ASCII format, and there were no non-ASCII characters. To create the bag-of-words for LDA analysis, the following preprocessing was done: parsing, tokenization, normalization by replacing uppercase with lowercase letters, punctuation removal, and stop words removal (Sbalchiero & Eder, 2020). Corpus specific stop words were not removed (Schofield et al., 2017). After preprocessing, the total stemmed word count was 121,989. For the stemmed word count by subcorpus after preprocessing, see Table 2.1.

Measures

Word

For this analysis, a word (also referred to as a token) is defined as a string of letters with a white space before and after.

Bag-of-words

Bag-of-words refers to all the words in a corpus or subcorpus. In the bag-of-words, grammar and word order are ignored, and multiplicity of words are retained. This is also known as a document-term matrix with term-frequency weighting (Grün & Hornik, 2011).

Document

In LDA, documents may be understood as subcorpuses, which when taken together constitute an entire corpus. In this study 17 subcorpuses were considered: 15 books of the Book of Mormon plus the title page and witness statements.

Beta (β) score

Each word in the corpus was assigned a beta score for each topic, which indicate how strongly each word is associated with each topic. Beta scores range from 0-1, and the sum of all beta scores in a corpus would equal a beta score of 1. Thus, lower beta scores indicate a more widely dispersed topic, and higher scores indicate higher topic density (i.e., clearer topic definition).

Gamma (γ)

Gamma scores measure the distribution of topics over documents, and are used to identify which topics are associated with each document (Silge & Robinson, 2017). Gamma scores range from 0-1. A gamma score of 1 for a certain topic within a book would indicate that a document is completely about that topic; whereas a 0 would indicate a topic is not present in a document.

Apparatus

R Studio was used for all analyses. The R library used for preprocessing and bag-of-words was tidytext (Silge & Robinson, 2017) and tm (Feinerer, 2011). For LDA, the two R packages used, were topicmodels (Grün & Hornik, 2011) and ldatuning (Nikita, 2016).

Data Analysis

An LDA model with $k = 30$ topics was fit to the document-term matrix using the variational expectation-maximization (VEM) method as implemented by Blei et al. (2003). No existing literature related to what number of latent topics exists in the Book of Mormon, although there is a history of exploration of various numbers of k when the number of topics is unknown (Siddiqui, 2013). Various numbers of k , ranging between 10 and 40 were examined and $k = 30$ was the best fit. This number allowed a granular examination of topics within books (i.e., a number greater than the number of subcorpus) and is small enough to render interpretable topics.

For the first research question, beta scores were inspected to evaluate which set of words most strongly characterize each topic. The top 50 beta scores were evaluated for each topic. For the second research question, gamma scores were inspected to evaluate which set of topics most strongly characterize each document. All topics where a gamma score exceeds .100 were reported.

Results

In terms of RQ1, the results suggested 30 topics in the Book of Mormon. The ten highest ranked terms per topic can be found in Table 2.2. Complete results can be reviewed on this research project's Open Science Foundation website (<https://osf.io/x2hev/>). Regarding RQ2, a heat map of topic frequency by subcorpus can be inspected in Figure 2.1.

Discussion

The aim of this study was to understand topics in the Book of Mormon as a sacred text of members of The Church of Jesus Christ of Latter-day Saints and related Latter-day Saint communities. The first research question examined the topical structure of the Book of Mormon. The second research question examined how topic frequency varied by books within the Book of Mormon.

RQ1

In terms of RQ1, the results suggested 30 topics that constitute the topical structure of the Book of Mormon. The topics consist of diverse vocabularies, and some topics appear to be readily identifiable. However, other topics are difficult to label. Given space limitations inherent in an Introduction, Methods, Results, and Discussion (IMRaD) article, only those identifiable topics with the 10 highest betas are addressed (in rank order) in this section. The labels for all 30 topics can be reviewed in Table 2.2.

Topic 3: Establishment and Collapse of the Church of Christ

Topic 3 occurred only in 4 Nephi with a high gamma score (.999), indicating this is the only topic of this book. Stems in this topic include references to time (e.g., year), deity (e.g., Christ), church (e.g., church), and people (e.g., people). Taken together, this vocabulary suggests this topic is about religious societies going through changes through time. These words match the narrative of the book, which is about the collapse of the religious society that was established following the visit of Jesus, after his death and resurrection, to the Book of Mormon people, and it appears to be about the establishment and collapse of the church of Christ. The following example of the topic occurs prior to the decline of the church: "And it came to pass that the thirty and fourth year passed away, and also the thirty and fifth, and behold, the disciples of Jesus had formed a church of Christ in all the lands round about" (4 Nephi 1:1). Thus, this topic presents to Latter-day Saint readers how Christ's church can be not only established but lost through sin and apostasy.

Topic 17: "Believe in Christ"

Topic 17 occurred in 2 Nephi with a low gamma score (.175), indicating this topic is a focus of a small portion of this book. Words include "believe" and "Christ". The topic centers on how the path of redemption is through a proper relationship with Christ. An example of this topic is the invitation of Nephi to "hearken unto these words and believe in Christ" (2 Nephi 33:10). As The Church of Jesus Christ

of Latter-day Saints (1988) later gave the Book of Mormon the subtitle, Another Testament of Jesus Christ, this topic emphasizes believing and coming unto Jesus Christ as the central purpose of the whole book.

Topic 12: The Nephites are a Branch of the House of Israel

Topic 12 occurred only in the book of Jacob and has a low gamma score (.166). This is one of two topics found in this book, the other being the allegory of the tame and wild olive tree (topic 14). Words of both topics overlap (e.g., fruit, tree, branch); however, this topic also includes words such as “Israel” and “Christ”. These words suggest that this topic is one in which Jacob is applying the olive tree allegory to the Nephites as a branch of the House of Israel, in which the Book of Mormon civilizations have the inheritance of being a part of God’s chosen people. Here is sample text from this topic:

Wherefore thus saith the Lord: I have led this people forth out of the land of Jerusalem by the power of mine arm, that I might raise up unto me a righteous branch from the fruit of the loins of Joseph. (Jacob 2:25)

The phrase from this passage, “from the fruit of the loins”, highlights the goal of this topic.

Topic 6: Recording on Gold Metal Plates

Topic 6 occurred in three subcorpuses. The book of Jarom and Words of Mormon both had the same high gamma score for this topic (.998), suggesting this is the only topic for these books. The title page had a lower gamma score (.330), and that subcorpus had a second topic. Topic 6 vocabulary include “plate”, “record”, and “write”. This topic appears to be about writing summaries on metal plate records of what the people and kings did. An important part of the history of the Book of Mormon is that it consisted of ancient writings made upon gold metal plates, and writers in these books and title page talk about their writing process. A passage representing this topic is: “An account written by the hand of Mormon upon plates taken from the plates of Nephi” (title page). This topic is significant because it presents the ancient historic process of the sacred text.

Topic 25: Linking to Other Covenantal Acts of Sparing

Topic 25 occurred only in the book of Omni with a high gamma score (.999), suggesting this is the topic of the whole book. Vocabulary in this topic include “Mosiah”, “Zarahemla”, “pass”, and “preserve”. Omni covers a narrative section of the Book of Mormon in which the history of King Mosiah facing war and eventually leading the righteous to peace in a new land of Zarahemla is recounted. This topic appears to be about this section of historical narrative. The following is an example of this topic: "And they departed out of the land into the wilderness, as many as would hearken unto the voice of the Lord" (Omni 1:13). This topic presents to the reader fulfilment of God’s promise in the opening of the Book of Mormon to Nephi “that inasmuch as thy seed shall keep my commandments, they shall prosper in the land of promise” (1 Nephi 4:14). Woods (2003) pointed out that Zarahemla can be translated as seed of mercy or seed of the spared. This topic’s presence serves as means to link Book of Mormon redemption narratives to New Testament and Hebrew Bible redemption narratives (Head, 2012).

Topic 16: Destroy Wickedness or Be Destroyed

Topic 16 appeared only in the book of Helaman with a moderate gamma score (.348), suggesting it is not the only topic of the book. Words in this topic vocabulary include “destroy” and “repent”. In this section of the Book of Mormon, the prophet-leaders emphasize to the Nephite people that they must repent or face utter destruction of their civilization, whereas in prior sections the prophets taught that the people would be cast out of their lands if they did not repent. The word “destroy”, in particular, is used in this book in reference to the need to destroy the wicked civilization of the Gadianton robbers among them, and not partake of their iniquities, or that they themselves will be destroyed. This topic captures the repent or be destroyed theme present in the Book of Mormon. An example of this topic is: "And except ye repent, ye shall perish; yea, even your lands shall be taken from you, and ye shall be

destroyed from off the face of the earth" (Helaman 7:28). Thus, Latter-day Saints are given a model of how God interacts to guide his people through his prophetic servants.

Topic 14: The Tame and Wild Olive Trees

Of all the topics found, the most recognizable was topic 14. The allegory of the tame and wild olive tree is a subject clearly present in Jacob chapter 5, although the high gamma score (.834) suggests that this topic goes beyond that single chapter and is the topic for the majority of the book of Jacob. The allegory is a detailed narrative of thoughtful caring of olive trees and includes dozens of horticultural references (Rust, 1992). The presence of words such as "tree", "fruit", and "branch" directly connect to this story. Jacob credits the allegory authorship to Zenos, an old world and pre-Christian prophet, the allegory may be related to the tree of life motif, and it is also a symbol of the House of Israel being dispersed among the nations of the gentiles and later gathered again. The allegory presents itself as typology but also prophecy and apocalyptic literature, reviewing God's involvement with his covenant people through the end when his vineyard will be burned with fire. The following is an example of this topic: "I will liken thee, O house of Israel, like unto a tame olive tree which a man took and nourished in his vineyard, and it grew and waxed old and began to decay" (Jacob 5:4). The inclusion of this topic was to reinforce that members of the Church of Jesus Christ of Latter-day Saints are organically connected to deity.

Topic 22: The Jaredites Face Destruction

Topic 22 is one of three topics that occurred in the book of Ether and had a moderately low gamma score (.245). It is related to the ancient civilization of the Jaredites which can be seen in the inclusion of names of particular Jaredites (e.g., Coriantumr, Shiz). It also has references to deity (e.g., Lord), words related to repentance (e.g., repent), and words related to destruction (e.g., battle, destruction, murder). Much of the book of Ether is about the great wars among the Jaredite kingdoms, and the book culminates with the destruction of all the people with the exception of a last king,

Coriantumr, and a prophet-writer, Ether, who both witness the utter destruction of the people. This topic elucidates the repent or be destroyed motif active within the Jaredite historical narrative. The following includes words of this topic:

And a part of them fled to the army of Shiz, and a part of them fled to the army of Coriantumr. And so great and lasting had been the war and so long had been the scene of bloodshed and carnage that the whole face of the land was covered with the bodies of the dead. (Ether 14:20-21)

This topic found its way into the Book of Mormon as a warning to the Latter-day Saint faithful against the errors of universalism, the need for repentance, and the pitfalls of unjust rule.

Topic 27: Jesus's Visit

Topic 27 occurred only in 3 Nephi with a moderate gamma score (.317). In this book, Jesus Christ appears to the Nephites after his death and resurrection, teaches, heals, gives power to baptize, and sets up his church. Whereas the word "Christ" occurred more frequently in 3 Nephi prior to the visit of Jesus, referring to the coming messiah, the word "Jesus" occurred more often during the period of his visit, referring to the presence of the person Jesus. The presence of Jesus among the topic vocabulary, as well as other words such as "bless", "baptize", and "pray", suggest that this topic is related to the period of Jesus's visit. The following is an example of this topic:

And it came to pass that when Jesus had spake these words, the whole multitude fell to the earth, for they remembered that it had been prophesied among them that Christ should shew himself unto them after his ascension into heaven. (3 Nephi 11:12)

This topic presents the New Testament Jesus as the same Book of Mormon Jesus, the one Lord God Omnipotent of the old and new worlds, so that "there shall be one fold and one shepherd" (3 Nephi 15:17, John 10:16).

Topic 18: Human Experience of God's Guidance

Topic 18 is present in two subcorpuses. Both the book of Enos and the witness statements had high gamma scores for this topic, .999 and .997, respectively. While it is unexpected that these subcorpuses would share a common topic due to content and narrative differences, the high gamma scores suggest that they were drawn from a single latent topic. Example words in topic 18 include “heard” and “voice”. Here are example 8 Right, 8 Left concordance lines from Enos 1:3, 10 for these two words:

I remembered the words which I had often *heard* my father speak concerning eternal life and the
was thus struggling in the spirit, behold, the *voice* of the Lord came into my mind again.

These concordance lines suggest a theme of human experience of God's guidance. This theme echoes Psalm 29 (e.g., “The voice of the Lord is powerful; the voice of the Lord is full of majesty”). This psalm, most likely drawn from Canaanite, Ugaritic, and Sumero-Akkadian sources, contains worship motifs focusing on God's voice and dominion over the cosmos (Van der Westhuizen, 1993; Venter, 2004). Like Psalm 29, topic 18 may represent a worship motif.

Summary of RQ1 Findings

When viewed as a whole, the topics obtained in the analysis appear to present different facets of how a people stay on track with their relationship with God. Each topic is about (a) deity, (b) humans, and (c) the interactions of both. For example, the allegory of the tame and wild olive tree (topic 14) is a metaphor of God trying through history to get humans to produce good fruit (i.e., to be righteous). As further examples, topics 16, 22, and 25 encapsulate God's relationship to specific groups within the context of a repent or be destroyed theme. Overall, these topics present different facets of a spiritual worldview where God's interactions with humanity is the central and organizing way of seeing reality.

Latter-day Saints are given a template and bird's-eye-view for living their lives through this theocentric perspective.

RQ2

In terms of RQ2 (levels of topics within subcorpuses), the distribution of topics varies by subcorpus. For the most part, each topic occurred in only one subcorpus; the smaller subcorpuses have only one topic, and the larger subcorpuses have more than one topic. Twenty-three of the 30 topics are present in only one book, two topics are present in two different subcorpuses (13 and 18), one topic is in three subcorpuses (6), and three topics (10, 21, 26) do not have gamma scores above the cutoff limit (.100) in any subcorpus. Topics that do occur in multiple documents tend to do so only in the small subcorpuses documents, and these occurrences may be related to small sample size.

There are four potential explanations for the finding that topics are unique to subcorpuses and for the most part do not cross subcorpus divisions. The first explanation is that the subcorpuses of the Book of Mormon are drawn from separate latent topics. A second explanation is that the topic differences are due to changes in the narrative and historical timeframe. For example, only topics in the book of Ether talk about the Jaredites. A third explanation may be that the writers of different subcorpuses have unique language styles. Writers may use pronouns, other parts of speech, and other specific terms at different rates, and the topic model may detect this. It is possible that some of the topics represent an author ID or subcorpus fingerprint. Finally, a fourth explanation is that the number of topics chosen ($k = 30$) impacted the finding of topics not crossing subcorpus divisions. Taken together, the first three explanations appear to be plausible. It does appear likely that the topic differences may be due to a combination of factors, and it appears that the topics of the Book of Mormon are complex. Regarding the number of topics, it appears that the differences between book topics are due to vocabulary differences and not due to the number of topics chosen.

Limitations

When considering the results of this study, three limitations should be kept in mind. The first is related to the number of topics selected, which was $k = 30$. At present there is no literature regarding the number of latent topics in the Book of Mormon. As such a goal of the present research was topic discovery. Not knowing the number of topics beforehand makes for an unsupervised model and different levels of k impacted the results. This study represents early work in topical analysis of this sacred text, further research may explore different numbers of topics for potential better model fit. A second limitation of this research was the inability of the model to detect identifiable topics in some books. While some topics were easily recognizable (e.g., topic 14, olive tree allegory), other topics were loosely defined (e.g., topics 4, 22, and 30 in the book of Ether), and some were ambiguous (e.g., topics 10, 21, and 26 in Alma). While the bag-of-words modeling has been useful, it ignores the relationships between words, and more sophisticated algorithms may be needed to detect more complex topics of the Book of Mormon. A third limitation of the study is the subjectivity of interpretation of topics. While there are no wrong answers in a subjective process of topic interpretation, the LDA model only identifies vocabularies, and different people may project different understandings onto the same sets of vocabulary.

Implications for Researchers

The findings suggest two implications for researchers. The first is regarding the finding that topical structure is centered around book divisions. This finding was not an expected result of the research and thus may merit further study. For example, whether this finding is unique to the Book of Mormon among sacred texts may be considered. Future research could examine whether other scripture such as the Doctrine and Covenants, the Hebrew Bible, or the New Testament follow this pattern.

A second implication for future research is regarding potential for further topic modeling. Future topic modeling could be expanded to include the larger corpus of the Latter-day Saint cannon, which includes the Holy Bible, the Book of Mormon, the Doctrine and Covenants, and the Pearl of Great Price. Topics found in this larger corpus would provide further understanding of the Latter-day Saint worldview. As well, while the number of topics chosen in this study ($k = 30$) allowed for granularity and also interpretability, expansion of the number of topics (e.g., 100 topics) would allow for further granularity of the topic model. As well, examining levels of topics present in smaller portions of text (e.g., individual chapters, author, or other book subdivisions) would allow more precision regarding where in the corpus specific topics occur.

Implications for Mental Health Professionals

The obtained results suggest two key implications for mental health professionals that are either within the Latter-day Saint community or outside of this community. First, for outside professionals these topics aid in an understanding of the spiritual worldview of this population. These topics present a worldview that is centered on God, relationships with God, and how people interact with God, Jesus, and the church. For example, Jacob's topics (12 and 14) teach Latter-day Saints that they are members of the house of God within the Abrahamic covenant, which ties them to him like branches grafted into the olive tree, drawing personal strengthening from the goodness of the roots. While many of the topics presented also occur in both the Hebrew Bible and the New Testament, others were unique to the Latter-day Saint community. The 30-topic configuration discussed in the article present a distinct theistic-infused worldview that may both befuddle and limit the professional unfamiliar with such a worldview. As such, it is incumbent on these professionals to grow in their knowledge of the Latter-day Saint worldview.

Second, this research may also deepen understanding of the worldview of this population for those already familiar with Latter-day Saints. Machine learning is a new approach to understanding the

topical structure of the Book of Mormon, and there may be some aspects of the spirituality, religion, and scriptures of The Church of Jesus Christ of Latter-day Saints that may be underappreciated, even by Latter-day Saint professionals and clients themselves. As well, the mined topics may amount to an articulation of core aspects of the Book of Mormon as identified in novel ways by the algorithms which may shine unique light on the faith and worldview of Latter-day Saints. For example, the inclusion of both the Book of Enos and the witness statements in a single topic is a grouping that has not been previously identified. This grouping allowed us to identify a worship motif with words like voice and hear. This provides new understanding of the background of the authors of these books, and adds a spiritual depth to these texts. Another example is the finding that most topics do not overlap book, title page, or witness statement divisions, suggesting a diversity within the Book of Mormon and between book authors which may not have been appreciated previously. Taken together, the results of this research provide a refreshed view of the Book of Mormon, which in turn adds a depth of understanding of the Latter-day Saint spiritual worldview.

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Table 2.1*Subcorpus Stemmed Word Count After Preprocessing*

Subcorpus	Count
Alma	38,353
2 Nephi	14,157
Mosiah	13,845
3 Nephi	12,832
1 Nephi	11,374
Helaman	9,447
Ether	7,473
Jacob	4,336
Mormon	4,189
Moroni	2,910
4 Nephi	882
Omni	605
Enos	536
Words of Mormon	363
Jarom	325
Witness statements	237
Title page	125

Note. Total corpus = 121,989

Table 2.2

Topic Number, Beta Scores, Words, Subcorpus, and Topic Description

Topic	Sum Beta*	Top 10 words of topic	Subcorpus name (gamma score)	Topic description
3	0.595	<i>pass, year, peopl, came, away, christ, hundr, also, among, even</i>	4 Nephi (.999)	<i>Establishment and Collapse of the Church of Christ</i>
17	0.580	<i>shall, god, unto, may, word, hath, yea, now, men, peopl</i>	2 Nephi (.175)	<i>“Believe in Christ”</i>
12	0.553	<i>unto, thing, lord, word, thou, will, fruit, day, wherefor, saith</i>	Jacob (.166)	<i>The Nephites are a Branch of the House of Israel</i>
6	0.549	<i>plate, peopl, king, land, thing, pass, mani, accord, wherefor, came</i>	Jarom (.998); title page (.330); Words of Mormon (.998)	<i>Recording on Gold Metal Plates</i>
25	0.522	<i>pass, came, mosiah, lord, behold, land, peopl, unto, zarahemla, wilder</i>	Omni (.999)	<i>Linking to Other Covenantal Acts of Sparing</i>
16	0.517	<i>yea, peopl, shall, come, now, unto, word, upon, came, might</i>	Helaman (.348)	<i>Destroy Wickedness or Be Destroyed</i>
26	0.490	<i>unto, peopl, will, word, yea, pass, behold, great, mani, god</i>	Alma**	<i>Prophecy of Destruction</i>
14	0.489	<i>unto, vineyard, behold, tree, shall, fruit, will, came, branch, pass</i>	Jacob (.834)	<i>The Tame and Wild Olive Trees</i>
10	0.486	<i>unto, god, pass, peopl, came, land, thing, lamanit, upon, now</i>	Alma**	<i>Ambiguous war topic</i>
22	0.483	<i>unto, upon, came, peopl, behold, pass, mani, son, lord, coriantumr</i>	Ether (.245)	<i>The Jaredites Face Destruction</i>
27	0.476	<i>unto, pass, shall, peopl, came, upon, land, come, thing, say</i>	3 Nephi (.317)	<i>Jesus’s Visit</i>
18	0.475	<i>unto, god, peopl, shall, lord, came, faith, also, father, record</i>	Enos (.999); Witness statements (.997)	<i>Human Experience of God’s Guidance</i>
19	0.474	<i>unto, came, shall, lord, god, pass, thing, father, wherefor, also</i>	1 Nephi (.357)	<i>Narrative of being led out of Jerusalem by God</i>
13	0.465	<i>unto, lord, lamanit, god, came, peopl, also, behold, hath, come</i>	Mormon (.443); title page (.666)	<i>Religious perspective of social destruction</i>

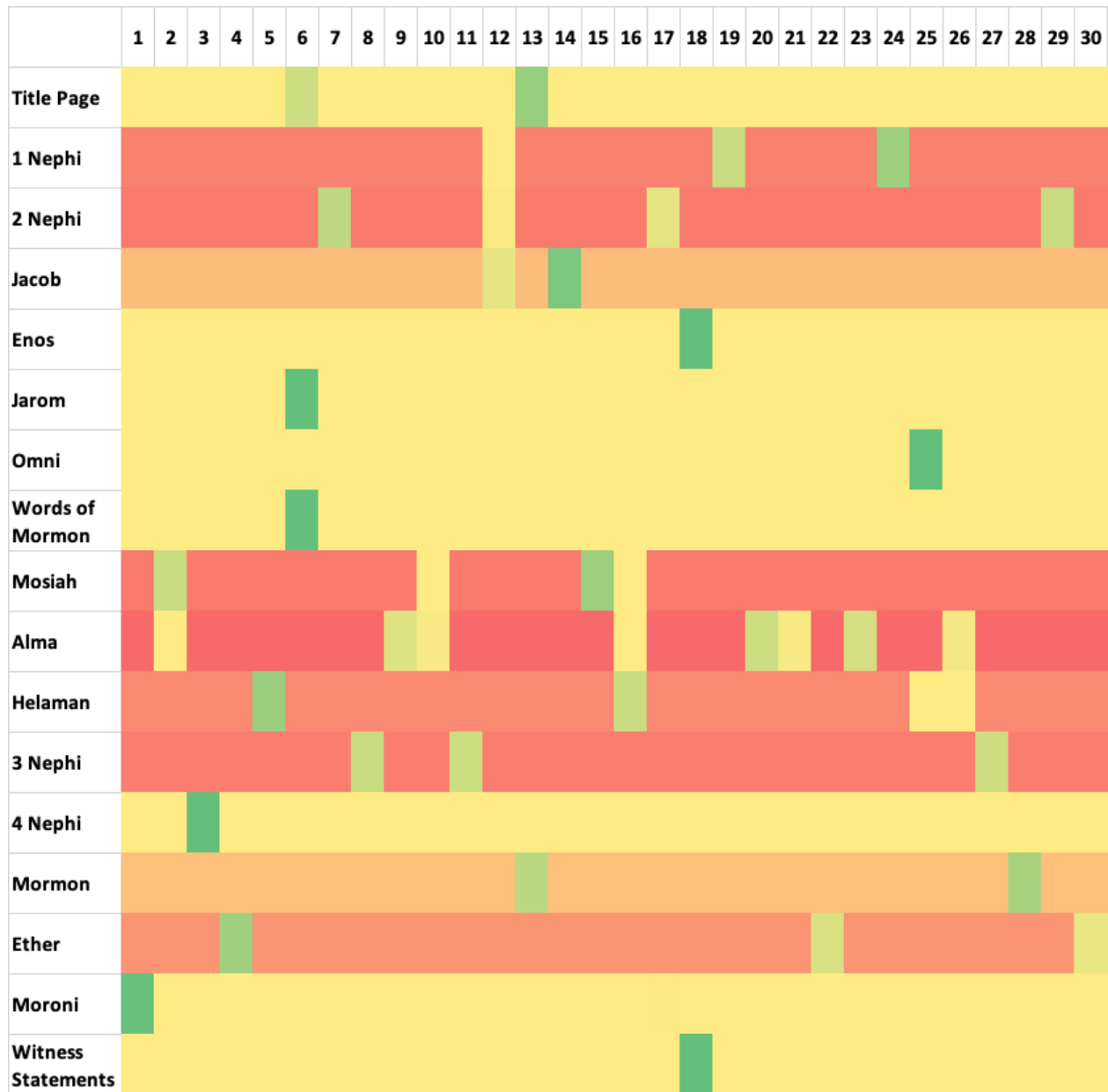
28	0.463	<i>shall, pass, behold, land, came, come, peopl, god, even, lord</i>	Mormon (.557)	<i>Destruction of Nephites by the Lamanites</i>
1	0.457	<i>unto, christ, god, thing, behold, shall, faith, wherefor, good, may</i>	Moroni (.972)	<i>Come to Christ and find good</i>
21	0.457	<i>peopl, unto, will, now, god, shall, behold, therefor, yea, pass</i>	Alma**	<i>Ambiguous Alma topic</i>
24	0.454	<i>unto, pass, lord, behold, thing, also, shall, yea, father, god</i>	1 Nephi (.633)	<i>Visions and spiritual teachings</i>
4	0.452	<i>unto, came, pass, lord, land, peopl, shall, jare, upon, thing</i>	Ether (.613)	<i>Jaredite kingdom</i>
5	0.448	<i>unto, behold, shall, pass, came, mani, god, land, lord, year</i>	Helaman (.647)	<i>Ambiguous Helaman topic</i>
30	0.444	<i>shall, pass, lord, came, wherefor, son, said, write, behold, begat</i>	Ether (.142)	<i>Narrative story of Jared and family lineage</i>
29	0.443	<i>shall, unto, lord, upon, behold, will, word, come, land, great</i>	2 Nephi (.358)	<i>2 Nephi ambiguous topic</i>
2	0.441	<i>god, came, unto, land, word, peopl, thing, shall, also, hath</i>	Mosiah (.353)	<i>Come unto God and he will save you from bondage</i>
11	0.434	<i>shall, behold, unto, father, thing, peopl, will, one, say, hath</i>	3 Nephi (.326)	<i>Jesus's Visit</i>
8	0.429	<i>unto, shall, father, will, came, lord, therefor, mani, word, command</i>	3 Nephi (.357)	<i>3 Nephi period before Christ's visit</i>
20	0.422	<i>unto, now, yea, pass, god, lamanit, land, also, came, citi</i>	Alma (.332)	<i>Lamanite-Nephite religious issues</i>
15	0.418	<i>peopl, lord, king, now, pass, unto, shall, land, yea, might</i>	Mosiah (.631)	<i>Nephite story narrative with Alma and Mosiah</i>
23	0.409	<i>unto, behold, peopl, shall, yea, land, now, came, pass, lamanit</i>	Alma (.285)	<i>Lamanite-Nephite spiritual teachings</i>
9	0.396	<i>god, came, land, now, behold, lord, know, armi, accord, son</i>	Alma (.209)	<i>Lamanite-Nephite war</i>
7	0.385	<i>shall, will, one, wherefor, thi, day, peopl, hath, men, god</i>	2 Nephi (.425)	<i>Nephi commentary about events</i>

*Sum of beta scores for top 50 beta scores for each topic

**Gamma score below .100

Figure 2.1

Heatmap of Topic Levels by Books, Title Page, and Witness Statements



Note. Gamma scores; green = high to moderate; yellow, orange, and red = lower scores approaching 0

Chapter 3: A Research Manuscript


**Keyness and Collocation Distinctions in How Latter-day Saint Communities Relate to God:
Implications for Mental Health Professionals**

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The research contained in this manuscript was part of the dissertation of the first author. Given the published nature of the material studied, a human subjects review was not required.

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Abstract

Multicultural competence includes understanding how spirituality informs client worldview. This corpus linguistics study examines the worldview of members of The Church of Jesus Christ of Latter-day Saints through analysis of the Book of Mormon as a sacred text. Keywords of the Book of Mormon text are identified by using the Hebrew Bible and New Testament as reference corpuses, and the Book of Mormon is used as a reference corpus to identify biblical keywords as well. Collocates of deity within the Book of Mormon text are identified and examined. Limitations and implications for research and practice are discussed.

Keywords: multiculturalism, CACREP, spirituality, God, deity, corpus linguistics, keyness, collocation, Book of Mormon, counseling, worldview, religion, Latter-day Saints, theistic values

Keyness and Collocation Distinctions in How Latter-day Saint Communities Relate to God:

Implications for Mental Health Professionals

Nearly three-quarters of the U.S. population identify as religious (Pew Research Center, 2019). While such an identity is commonplace, the place of religion and spirituality in mental health treatment has been long debated. More recently, ethical standards in the helping professions have pointed to an imperative for practitioners to not ignore this aspect of identity. However, skills and knowledge among practitioners lag. Understanding the relationship between spirituality and mental health is fundamental to providing effective counseling of clients who identify as religious.

The Council for Accreditation of Counseling and Related Educational Programs (CACREP, 2016) provides an example of a clear knowledge and skills imperative. The training standard 2.F.2.g specifies that "the impact of spiritual beliefs on clients' and counselors' worldview" (p. 9) are foundational knowledge required as part of social and cultural diversity. Ethical and accreditation statements from allied professions (e.g., social work, marriage and family therapy, psychology) contain similar language. For example, the social work ethical code 1.05.c states "Social workers should obtain education about and seek to understand the nature of social diversity and oppression with respect to race, ethnicity, national origin, color, sex, sexual orientation, gender identity or expression, age, marital status, political belief, religion, immigration status, and mental or physical ability" (National Association of Social Workers, 2017, p. 1).

One religious community within the U.S. are members of The Church of Jesus Christ of Latter-day Saints. This community represents 2% of the U.S. population (Pew Research Center, 2019), or 6.7 million people (The Church of Jesus Christ of Latter-day Saints, n.d.-a). Despite the size and geographic spread of this community, little knowledge exists in the counselor education literature on the community. The aim of the present study is to address this gap with the goal of greater adherence to the aforementioned training and ethical standards. Increasing multicultural competence of counselors who

work with Latter-day Saint clients could disrupt current practice with this population by facilitating effective practice based on attunement with these clients and their religious and spiritual worldview.

In a review of the literature on the relationship with members of The Church of Jesus Christ of Latter-day Saints to deity and of distinctions of the Book of Mormon compared to other sacred texts, five key issues emerged. These key issues were: (a) key definitions, (b) the relationship of view of deity and worldview, (c) the relationship of language and worldview, (d) the relationship of counselor attunement to client worldview and effective counseling, (e) research on keyness, (f) research on collocations of deity, and (g) sacred canonical considerations. After these issues are discussed, the research questions developed to guide the present study will be enumerated.

There are three key terms that need to be defined in order for the objectives of this study to be clear. These terms are (a) deity, (b) scripture, and (c) worldview. The term *deity* refers to a god or goddess in polytheistic religion and to the creator and supreme being in monotheistic religions, such as Christianity. In the Hebrew Bible and New Testament, God refers to the creator of heavens and earth. In the biblical text, God is presented as a personal God, who is involved in Israel and the world (Bullock, 1997). The bible dictionary that accompanies the canonized scriptures of The Church of Jesus Christ of Latter-day Saints says God is the supreme governor of the universe and the father of mankind. In addition, Latter-day Saint cannon refers to the Godhead, which represents a council of three distinct beings, God the Father, his Son Jesus Christ, and the Holy Ghost (The Church of Jesus Christ of Latter-day Saints, n.d.-b).

The term *scripture* means the same thing across the three spiritual traditions addressed in this paper. Scripture is the sacred writings of a religion. It comes from the word *scribere*, meaning writing or to write, and denotes writings that are sacred and inspired. Within religious communities it is seen as being inspired by God and as a guide for daily living. Within the Latter-day Saint communities, scripture is viewed as being inspired by the Holy Ghost, and being the will, mind, word, and voice of God, and “the

power of God unto salvation" (Smith, 1835, p. 73). In the case of Christianity, it is the sacred writings contained in the Holy Bible. For members of The Church of Jesus Christ of Latter-day Saints, scripture includes the Holy Bible as well as the Book of Mormon. As such, while the exact sacred canon differs among Christian traditions, the concept of scripture does not. Like the concept of scripture, the concept of worldview is key to the present research study.

The term *worldview* defines a particular way of viewing life and existence. The *Oxford English Dictionary* defined worldview as "a set of fundamental beliefs, values, etc., determining or constituting a comprehensive outlook on the world" (Oxford University Press, 2020). Such a definition is supported by the work of Sigmund Freud (1989), who defined the related word *weltanschauung* (literally, a perception of the world) as "an intellectual construction which solves all the problems of our existence uniformly on the basis of one overriding hypothesis, which, accordingly, leaves no question unanswered and in which everything that interests us finds its fixed place" (pp. 195-196).

Deistic beliefs are known influencers of worldview. Influential theologian Paul Tillich (1957) defined God as that which concerns man ultimately showing the intersection between God and worldview in modern thought. Joseph Smith, the founder of The Church of Jesus Christ of Latter-day Saints, taught about the importance of a correct view of God. He taught that "the great parent of the universe looks upon the whole of the human family with a fatherly care and paternal regard" (Smith, 1842, p. 759) and that "if men do not comprehend the character of God, they do not comprehend themselves" (Richards, 1844, p. 67). As such, members of The Church of Jesus Christ of Latter-day Saints form a worldview of God as a "Heavenly Father" who is a personal and loving father, and their relationship to him being that of "children of God". Thus, for Latter-day Saints, the view of God is tied to worldview.

Additionally, worldview is directly tied to language. The Prussian philologist Wilhelm von Humboldt (1836/2000) originated the idea that language and worldview are inextricable. According to

von Humboldt, worldview is embedded in language, and through language humans are able to make use of and develop their mental processes to make sense of reality. He believed that this is true in all languages and among all groups of people. Thus, examination of language can help in understanding the worldview of groups and individuals. In addition, understanding language and worldview can facilitate effective multicultural counseling.

To provide effective counseling, mental health professionals need to possess a robust understanding of a client's worldview. CACREP (2016) mandates that understanding the spiritual aspects of a client's worldview is a part of social and diversity competence. Sue and Sue (2013) also listed understanding the worldview of clients as one of the core cultural competencies. Focusing on the worldview of the individual client allows the therapy to be personalized. Personally-relevant interventions increase client engagement and increase effectiveness for diverse groups (Hall et al., 2020). Understanding of worldview is directly linked to therapist-client attunement and effective therapy. Also, examination of language can help promote understanding of diverse perspectives.

Keyness refers to words that occur with unusual frequency in a given text by comparison with a reference corpus. It is closely related to the notion of aboutness, that is, the understanding of main concepts, topics, and attitudes presented or discussed in a text (Gabrielatos, 2018). Keyness has been used to study sacred and other texts. For example, Wang (2014) used keyness to examine the use of repetition in the biblical book of Matthew, and recommended further use of keyness to understand biblical texts. In addition, collocation is an additional corpus linguistic tool which may be used to examine meaning of texts.

Collocation is a linguistic tool that adds understanding to the meaning of words. Indeed, eminent linguist J. R. Firth (1957) noted that "you shall know a word by the company it keeps" (p. 6). In general, collocations can be defined as "combinations of words that habitually co-occur in texts and corpora" (Brezina, 2018, p. 67). After eliminating stopwords, the five most frequent collocations of God

in the King James Version (KJV) are LORD, God, Israel, man, and house (Callister, 2020). Biblical collocation gives meaning to how this text represents deity and serves as a basis for comparison with other sacred texts.

The sacred canon of The Church of Jesus Christ of Latter-day Saints consists of the Holy Bible, the Book of Mormon, the Doctrine and Covenants, and the Pearl of Great Price. In this study I will examine intercanon distinctions, whereas further research may look at sacred text outside of the Latter-day Saint canon (e.g., the Quran, the Vedas, the Tripitaka). Because the KJV of the Holy Bible was used at the time that the Book of Mormon was first published in 1830 and remains the standard version for this community, the KJV will be used. According to reception theory (Knight, 2010), selection of this English language version allows comparison with the biblical texts that have been received and thus influenced Latter-day Saint worldview formation. As well, the early modern and late middle English language of both the KJV and the Book of Mormon profitably support their comparison.

Given the aforementioned and the goal to understand distinctiveness of the Latter-day Saint community's worldview, five research questions were developed:

- RQ1: What word usage distinguishes the Book of Mormon from the New Testament?
- RQ2: What word usage distinguishes the New Testament from the Book of Mormon?
- RQ3: What word usage distinguishes the Book of Mormon from the Hebrew Bible?
- RQ4: What word usage distinguishes the Hebrew Bible from the Book of Mormon?
- RQ5: In the Book of Mormon, what are the words most closely related to the proper noun "God"?

Method

Design

The present research study used a corpus linguistics design (Weisser, 2016). There were four variables: subcorpus, keyness, node, and collocates of the node. The corpus was composed of three

subcorpus that represent influential sacred texts in the Judeo-Christian tradition. These texts were: the Hebrew Bible (KJV), the New Testament (KJV), and The Book of Mormon: The Earliest Text (Skousen, 2009). The type of measure varied by variable: (a) corpus was nominal, (b) keyness was continuous, (c) node was nominal, and (d) collocate was nominal. The unit of analysis was words.

For RQs 1-4, the log-likelihood ratio test (i.e., G^2 test) was employed to examine keyness (Brezina, 2018; Dunning, 1993). G*Power does not contain analysis for the G^2 test (Faul et al., 2009). However, since the G^2 test is a derivation of the χ^2 test, this test was used as a proxy. A medium effect size for the χ^2 test was inputted (Cohen, 1988). The input parameters were: (a) test family- χ^2 tests; (b) statistical test- goodness-of-fit tests: contingency tables; (c) type of power analysis - a priori: compute required sample size - given α , power, and effect size; (d) $w = 0.30$; (e) power ($1-\beta$ error probability) = 0.90; (f) $\alpha = .001$; and (g) degrees of freedom (Df) = 1. The G*Power 3.1 output suggested a sample size of 233 with an actual power of 0.90.

RQ5 involved exploring relationships between words. Since G*Power doesn't offer a mutual information option, the calculation for a point biserial correlation was selected as a proxy. The average Cohen's d from a study of impact of collocation manipulation upon learning was employed as the effect size input ($d = 1.325$; Boers et al., 2017). This average Cohen's d was then transformed into the effect size appropriate for a point biserial correlation: $|r|$ (Ellis, 2009). The input parameters were: (a) test family = t tests; (b) statistical test = correlation: point biserial model; (c) type of power analysis = a priori: compute required sample size - given α , power, and effect size; (d) effect size $|r| = 0.5522$; (e) power ($1-\beta$ error probability) = 0.90; (f) $\alpha = .05$; and (g) tails = 2. The G*Power 3.1 output included a sample size of 27 and an actual power of 0.91.

Corpus

Register, Sources, and Scope

The register is sacred texts. The sources for the corpus were the KJV of the Holy Bible (1611/2004) and The Book of Mormon: The Earliest Text (Skousen, 2009). The KJV was used for both the Hebrew Bible as well as for the New Testament. The earliest text version of the Book of Mormon was selected due to its removal of printing and scribal errors, as well as the modernization of the language that followed the original 1830 printing. For the Hebrew Bible and the New Testament, the translation used was the KJV. For the whole corpus, the token (word count) and type counts (unique words) were 1,060,020 and 14,068, respectively. The token and type counts for the subcorpus were: Hebrew Bible (609,424 and 10,751), New Testament (180,585 and 6,006), Book of Mormon (270,011 and 5,616).

Preprocessing

The KJV (1611, 2004) Hebrew Bible and New Testament in .txt format were drawn from the Project Gutenberg website. Yale University Press and the editor gave permission to receive and use the text files of The Book of Mormon: The Earliest Text (Skousen, 2009) for this dissertation study. All of these files were in ASCII format, and there were no non-ASCII characters. The text was processed by removing punctuation, numbers, and white space. Then a document-term matrix was generated for application with keyness but not collocation. Word stemming was not applied, and stop words were not removed. For the collocation analysis, the stop words were filtered out after analysis.

Measures

Word Node

The node is the central word to which the collocates are associated. For the purpose of uniformity and ease of comparison, a single deity nodal word was chosen. The single node word was “God”, which is capitalized and in the singular form.

Keyness

The keyness parameters were: maximum wanted = 100; minimum frequency = 5; minimum log ratio = 1.5; minimum Bayesian information criterion (BIC) scores = 2.5; and minimum p -value = 0.001. Stop words were excluded from the top 100 words.

Collocation

The collocation parameters were as follow: statistic name = MI^2 , statistic cut-off value = 3, left and right span = 8, minimum collocate frequency = 5, minimum occurrence frequency = 100.

Apparatus

The software program used for analyses was R Studio. Quanteda (Benoit, Watanabe, Wang, Nulty et al., 2021) and quanteda.textstats (Benoit, Watanabe, Wang, Lua et al., 2021) were the R packages used for both keyness and collocation. Text was processed using the "tm" package (Feinerer, 2011).

Statistical Analysis

The first four research questions compared the proportions for each token in the corpus of interest and a reference corpus. As such, the proper statistical analysis is the log-likelihood (G^2 ; Brezina, 2018). The effect size used was BIC. The BIC strength descriptors employed were those of Neath and Cavanaugh (2012). For the fifth research question, the measure of association used was the square of mutual information (MI^2 ; Brezina, 2018).

Results

RQs 1-4 involve keyness analysis between study and reference corpuses. The results for these analyses can be viewed in Table 3.1. RQ5 examined the words associated with the node word "God".

The collocates results can be found in Table 3.2. Complete results can be reviewed on this research project's Open Science Foundation website (<https://osf.io/x2hev/>).

Discussion

The aim of this study was to explore the spiritual worldview of members of The Church of Jesus Christ of Latter-day Saints and related Latter-day Saint communities through corpus linguistic analysis of the Book of Mormon as a sacred text of this community. The first four research questions examined keywords of the Book of Mormon compared to the New Testament (RQ1) and Hebrew Bible (RQ3) and the keywords of the New Testament (RQ2) and the Hebrew Bible (RQ4) to the Book of Mormon. The fifth research question identified the words that most commonly co-occur with the proper noun "God" in the Book of Mormon.

RQ1 examined the Book of Mormon compared to the New Testament. The top keyword "pass" comes from a Hebrew word *wayehi* which may be translated as "and it came to pass", which occurs frequently in the Book of Mormon, and which is used to connect two ideas or events (Parry, 1992). The text itself refers to its Reformed Egyptian and Hebrew origins (e.g., Mormon 9:32-33), and this phrase has been identified as commonly occurring in Hebrew Bible narratives and in narrative sections of the Book of Mormon, but rarely in Hebrew poetic, literary, or prophetic writing (Parry, 1992). The presence of Hebraisms in the Book of Mormon keyness analysis demonstrates to Latter-day Saints the historical origin of this sacred text. The word "pass" links Latter-day Saints to ancient Palestine and to God's ancient Abrahamic covenant people. Additionally, this keyword may suggest the presence of a narrator's voice as well as continuity of worldview throughout the text.

The second keyword "land" refers to the geographical settings of the Book of Mormon. The lands of the Book of Mormon are frequently mentioned in the text and figure importantly in the historical narrative. An example of land in the text is when Lehi talks to his children about how they left the land of Jerusalem and have been led to a new land: "We have obtained a land of promise, a land

which is choice above all other lands, a land which the Lord God hath covenanted with me" (2 Nephi 1:5). The presence of the keyword land demonstrates the connection of God's people to the earth and God's blessings through covenantal living with him.

The keywords "people", "Lamanites", and "Nephites", along with the word "land", show that the Book of Mormon is about groups of people and civilizations. An example text including this focus is the following: "And now as ye are desirous to come into the fold of God and to be called his people" (Mosiah 18:8). These are narratives about how God's people throughout history worked their way to salvation. Like biblical narratives in Genesis and Exodus, these are stories of groups of people struggling to find and stay on the Lord's path. This level of focus in the Book of Mormon demonstrates to Latter-day Saints the importance of collectivist and communal relationships in the process of drawing closer to God.

RQ2 compared the New Testament to the Book of Mormon. The results suggest that the New Testament focuses on individuals and their activities such as talking to each other (e.g., "said" and "answered"). In contrast, the Book of Mormon seems to have a group and civilization level focus. One explanation for this is the context from which the writings emerged. The New Testament is largely a collection of individual eyewitness accounts and letters, written during the final years of the 2nd Temple period and the decades right after its destruction. The Book of Mormon consists of a curated record of writings that occurred over a longer period of time, including between 600 BCE and 400 CE. The narrower focus of the New Testament may have prevented forming a more communal narrative. Note the focus in the individual in the story of the Rich Ruler from Luke 18:20-23:

Thou knowest the commandments, Do not commit adultery, Do not kill, Do not steal, Do not bear false witness, Honour thy father and thy mother. And he said, All these have I kept from my youth up. Now when Jesus heard these things, he said unto him, Yet lackest thou one thing: sell

all that thou hast, and distribute unto the poor, and thou shalt have treasure in heaven: and come, follow me. And when he heard this, he was very sorrowful: for he was very rich.

The individual-based focus is not the only explanation for the differences encountered. Another explanation is a variation in soteriology. The writers of the New Testament emphasized the individual's role and responsibilities for their own salvation. In contrast, the writers of the Book of Mormon present a more communal understanding of soteriology. For example, King Benjamin invites his people as a whole to make a covenant with God to keep his commandments and if they do he will give them the name of Christ, which will be written in their hearts (Mosiah 5:7). Between the latter and the former, it appears that the former is more likely because the scope of the text does not necessarily reflect theological differences between the primitive New Testament church and the Book of Mormon Church of Christ. However, the more Christocentric focus of the New Testament (e.g., keyword "Jesus") may reflect foundational differences in views of salvation that have emerged since the texts were produced.

RQ3 identified the keywords of the Book of Mormon compared to the Hebrew Bible. Along with the results of RQ1, these results show that the Book of Mormon is about the Lamanites, Nephites, and persons named Nephi. However, words present in RQ1, which are not present here, are "land" and "people", suggesting that while the Hebrew Bible is not about the same specific civilizations, both the Book of Mormon and the Hebrew Bible focus on groups of people and their associated geographies. This focus on civilizations and kinship demonstrates common communal values within both of these sacred texts and link Latter-day Saints to ancient Israel.

Both RQ1 and RQ3 include the keywords "pass", "yea", and "behold". This suggests phrasing and language style differences between the Book of Mormon and the combined biblical texts. The word pass, as noted above, is part of a Hebrew expression used in narrative passages. While both the Hebrew Bible and Book of Mormon frequently use this phrase, the higher frequency in the Book of Mormon suggests higher portions of narrative text. The words yea and behold also suggest style distinctions

between the Book of Mormon and biblical texts. While the translation of the Book of Mormon occurred within a KJV saturated religious discourse, and while the KJV Bible and the Book of Mormon both contain early modern and late middle English, these text distinctions suggest unique style aspects in the Book of Mormon compared to the language used by the King James translators. These findings demonstrate the Latter-day Saint view of the Book of Mormon as a unique scripture coming from God.

Also, regarding RQ3, the word “Christ” occurs in the Book of Mormon but not in the Hebrew Bible. The presence of Christ in the Book of Mormon and not in the Hebrew Bible is not unexpected but does demonstrate the strong Christ theme that is in the Book of Mormon. It is noted that while Christ is a keyword in the Book of Mormon compared to the Hebrew Bible, the word Jesus is a keyword in the New Testament compared to the Book of Mormon. This demonstrates the role of the Book of Mormon for Latter-day Saint communities in forming a Christocentric reading of all three texts. For example, in the Book of Mormon Abinadi refers to the Messiah who is recognized as Jesus Christ in the Hebrew Bible writings when he asks, “Did not Moses prophesy unto them concerning the coming of the Messiah and that God should redeem his people...and even all the prophets?” (Mosiah 13:33), following which Abinadi goes on to identify the Messiah as the suffering servant in Isaiah 53 (Mosiah 14). The keyword Christ in the Book of Mormon demonstrates how Latter-day Saints see these sacred texts as centralized in a faith in Jesus Christ.

RQ4 focused on keyness of the Hebrew Bible when the reference corpus is the Book of Mormon. The top three words “thy”, “thee”, and “thou” are all second-person singular pronouns. These words are used when individuals speak with each other, and these results may indicate that the Hebrew Bible has a greater focus on an individual level of dialogue than the Book of Mormon. An alternative explanation is that this corpus contains a greater level of theophany. For example, Ticciati (2013) talked about the role of first- and second-person pronouns in Job's development of an I-thou relationship with God in which "Job's identity is guaranteed by God" (p. 47). Job uses the second-person pronoun to speak

directly to God and in return God uses the second-person pronoun to speak directly to Job, confirming his unique individuality. In another example, God speaks to Moses using the second-person pronoun, saying “I will be with *thy* mouth, and teach *thee* what *thou* shalt say” (Exodus 4:12, emphasis added). These pronouns may thus reflect Hebrew spirituality which is rooted in tangible interactions with God. A third explanation is that these findings reflect particular pronoun textual variations in the early modern and late middle English usage of the Hebrew Bible compared to the Book of Mormon as used by the KJV Hebrew Bible translators compared to the Book of Mormon translator, or that the Hebrew Bible uses archaic forms at different rates than the Book of Mormon. As well, if all pronouns had been lemmatized, different results may have been obtained. Taken together, the first two explanations appear to be the most likely explanation of the presence of *thy*, *thee*, and *thou*, because of the levels of one-on-one communication as well as the higher presence of dialogue related to theophany as compared to writings in the Book of Mormon. These findings demonstrate unique aspects of the Hebrew Bible as a text saturated with relationship and the development of the individual through interactions with deity. These results provide contrast with the RQ3 findings for the Book of Mormon which, by comparison, highlight the focus of how civilizations as well as individuals relate to a God who is active in the universe. In addition, the present study did not lemmatize given the goal of obtaining the most granular results possible. Future research may examine keyness after lemmatization to explore the broad influence of pronoun use in the Book of Mormon.

Along with *thy*, *thee*, and *thou*, the words “*said*” and “*shalt*” also appear to be associated with person-to-person dialogue as well as communication between humans and deity. It is also noted that “*said*” is a keyword of both the Hebrew Bible (RQ4) as well as the New Testament (RQ2), compared to the Book of Mormon. Sample text from the Hebrew Bible with these words occur with the decalogue: “And the Lord *said* unto Moses, Thus thou *shalt* say unto the children of Israel, Ye have seen that I have talked with you from heaven” (Exodus 20:22, emphasis added). These words further emphasize the

focus of the Hebrew Bible on the individual in comparison to the Book of Mormon emphasis on the deity-civilization relationship. The RQ4 Hebrew Bible findings also include the keywords “Israel” and “David”. These words highlight that the Hebrew Bible deals more with the House of Israel and Israel’s king than does the Book of Mormon. While the Book of Mormon also talks about the nation and kingdom of Israel, the references are less frequent and less specific. This is because the Book of Mormon occurs in a setting that is removed in space and time from Palestine’s Israel, and the Book of Mormon references to Israel and David are made historically rather than in present tense. To Latter-day Saints, the Book of Mormon does not give the history of the House of Israel, but it gives the context to the House of Israel through a global perspective. This perspective may reflect the Latter-day Saint view of the present involvement of the God of ancient Israel.

The word “Lord” in the Hebrew Bible refers to YHWH, or *Yahweh*, the Hebrew name of God that was revealed to Moses. It is noted that “God”, as a possible synonym to “Lord”, does not show up in this keyness list. In comparison to the keyword Lord, it is again noted that the word Christ is a keyword of the Book of Mormon compared to the Hebrew Bible (RQ3), and that Jesus is a keyword of the New Testament compared to the Book of Mormon (RQ2). These results highlight variations in how these texts conceptualize and refer to deity. For Latter-day Saints, *Yahweh* or Jehovah, Jesus, and Christ are all the same being. These results highlight Latter-day Saint cosmology.

RQ5 examined the collocates of “God” in the Book of Mormon. The goal was to capture the “aboutness” of God from a Latter-day Saint worldview. The strongest collocate of God is the word “God”. Self-collocation has been referred to as “burstiness” (Church and Gale, 1995), and it means that when a word occurs, it tends to occur more than once, or in groups with itself. While it is already known that a major theme in the Book of Mormon is deity, these burstiness findings further suggest that God is one of main things that the book is about. The following text demonstrates the self-referencing tendency of God in the Book of Mormon:

Therefore lift up your heads and rejoice and put your trust in *God*, in that *God* who was the *God* of Abraham and Isaac and Jacob, and also that *God* who brought the children of Israel out of the land of Egypt and caused that they should walk through the Red Sea on dry ground and fed them with manna that they might not perish in the wilderness; and many more things did he do for them. (Mosiah 7:19, emphasis added)

In this passage King Limhi uses references to God in the past to help his people understand who God is to them now, specifically as a helper and a deliverer. These findings show the importance of God in the text as a being one who is peerless and compared only to himself. Self-collocation of deity reflects how the Book of Mormon text and Latter-day Saint worldview revolve around a common theocentric perspective.

The second strongest collocate was “commandments”. This collocate indicates an understanding of God in the Book of Mormon as a rule-giving agent. In the Book of Mormon, the word “commandments” is often associated with God, and the phrase “commandments of God” occurs frequently. An example of this phrase in the text is the following: “And this was their faith, that by so doing God would prosper them in the land; or in other words, if they were faithful in keeping the commandments of God, that he would prosper them in the land” (Alma 48:15). Latter-day Saints see God as a caring father in whom they can trust for personal help as well as instruction.

The third strongest collocate was “word”. This word has special meaning in the Bible, including in the famous opening of the Gospel of St. John, “In the beginning was the Word, and the Word was with God, and the Word was God” (John 1:1). In this scripture word refers to Jesus Christ but also implies the “In the beginning” (Genesis 1:1) of when God spoke and by his word brought into being or organized all of creation. In the Bible, word has the Greek root of *logos*, meaning reason, understanding, or truth; and the associated Hebrew association is *dabar*, which may be called “performative utterances” or “a divine command to lead a sacrificial life of service” (Berman, 1994, p. 145). Like the

biblical texts, word in the Book of Mormon is frequently associated with God and refers to a way of spiritual living. An example from the Book of Mormon is, “They did impart the word of God one with another without money and without price” (Alma 1:20). Word as a collocate of God signifies to Latter-day Saints the association of God’s voice and words to him and connects Latter-day Saints to a righteous way of living that is tied to God.

Taken together, the top collocations suggest a view of God as presented in the Book of Mormon. This God is a being who is self-defined and compares only to himself, gives instructions to guide his children, and speaks words from himself that can be used by humankind and individuals. The self-referencing of the word God brings to mind Yahweh, who told Moses that his name is “I am that I am” (Exodus 3:14), and of the New Testament Jesus who referred to himself the same way, saying “Verily, verily, I say unto you, Before Abraham was, I am” (John 8:58). As well, this Book of Mormon God is a personal God who exists within the cosmos, interacting personally with humanity through his commandments and words. These collocates of deity present an all-powerful and involved God in whom Latter-day Saints can trust, believe, and find meaning.

The combined keyness and collocation findings paint a picture of the worldview presented in the Book of Mormon. The keyness results present an overall Book of Mormon view of God interacting with groups of people and civilizations over periods of time, and has less individual focus than that present in the New Testament and Hebrew Bible. The Book of Mormon is about a larger picture view of humanity, whereas the New Testament is about a relatively small set of people talking to each other. The Hebrew Bible is also about lands and groups of people but doesn’t talk about Jesus Christ, which the Book of Mormon does, and also has more theophany. These keyness results, combined with the collocation findings regarding the view of God, suggest a Book of Mormon worldview in which Christocentric and other spiritual perspectives are encompassed in an overall theistic view of the world.

When considering limitations, two should be kept in mind. The first limitation is related to the keyness study, which used English language comparison. While the Book of Mormon was originally published in English, the text itself has references to its Reformed Egyptian, Hebrew, and other language origins. The Hebrew Bible and New Testament original languages were Hebrew, Greek, and Aramaic. While it is necessary for the texts to be in the same language to have a keyness analysis, some results may be due to translation word choices and may not be due to differences in the original language constructs. I purposely chose editions and translations of the corpuses that have similar uses of English language to reduce noise due to language differences. However, keyness analysis with different versions or languages would produce different results.

The second limitation is related to collocation and the minimum number of times a word needed to occur in the text to be included. I chose a large number (100) to allow major collocation themes to emerge. However, this criterion eliminated many less frequently occurring but significant collocates. For example, setting this number at three would have produced the top two collocates of "Isaac" ($MI^2 = 8.216$) and "changeable" ($MI^2 = 8.069$), suggesting the association of *God* to the biblical patriarch and to the trait of not changing. Or, if I had set the minimal cutoff value to 40, the second collocate after God would have been "lamb" ($MI^2 = 6.368$), also a significant result. Future research may explore a more nuanced examination of the less frequently occurring collocates of God in the Book of Mormon.

The obtained results suggest some implications for further research. First, while I compared the Book of Mormon to other monotheistic sacred texts, it could also be profitably compared to sacred texts beyond the Hebrew Bible and New Testament. For example, it may be useful to compare it to the Tripitaka, Vedic and Tantric texts, or to the Quran. There are also implications for further research regarding the collocation analysis and for corpus linguistics generally. As mentioned, analysis of lower frequency terms that collocate with "God" may provide more nuanced results, and collocation analysis

of other terms may be useful as well. Further, there currently is little application of corpus linguistic tools for Latter-day Saint religious texts, and it is hoped that this research will inspire researchers to consider new applications of corpus linguistics tools for Latter-day Saint and other religious documents.

The findings of this research suggest key implications for mental health professionals both familiar and unfamiliar with members of The Church of Jesus Christ of Latter-day Saints and related Latter-day Saint communities. For those who are not familiar with this population, the keyness and collocation results may generally present an understanding of the spiritual worldview of Latter-day Saint clients, and understanding this multicultural diversity will help professionals attune to these individuals. For those who are familiar with the Latter-day Saint population, these findings also have implications for practice. These findings highlight aspects of Latter-day Saint theology and spirituality that may not be readily apparent or that may be underappreciated. The following are several implications for mental health professionals.

The first implication of this research is the theocentric worldview of Latter-day Saints which is present in the Book of Mormon. The keyness and collocation results present a worldview that is rooted in God and his involvement in humankind throughout history, which may be called theocentric rather than Christocentric, in which Christology is centered within a larger theocentric perspective. This is a nuance that distinguishes Latter-day Saints from non-Latter-day Saint Christians, and this view is also distinct from non-religious clients. Understanding this individual and cultural background puts mental health professionals in a position to assess for spirituality and how religious and spiritual views inform presenting concerns. Latter-day Saints are less concerned with their relationship with Jesus, or with “What would Jesus do?” and are more concerned with their relationship with God, and their place within Latter-day Saint cosmology, which spans from preexistence to post-final judgment and post-mortality, compared to other Christians. For example, a distressed Latter-day Saint client may find comfort and meaning in exploration of their connection or lack of connection to God and God’s purpose

for them in their lives. Exploring such spiritual ruptures as attachment injuries may be empowering to Latter-day Saint clients.

A second implication of these findings for mental health professionals is the need of Latter-day Saint clients to find identity and personal meaning within the grand Latter-day Saint worldview and narrative. While the keyness results highlight ways in which the Book of Mormon is about groups and civilizations relating to God, the individual and I-thou relationships within the New Testament and Hebrew Bible are also part of the Latter-day Saint scriptural cannon. These scriptures have meaning to members of The Church of Jesus Christ of Latter-day Saints, and it appears that within Latter-day Saint theology and spirituality the theocentric view needs to be rooted within a personal relationship with God. For example, when Job was suffering, it can be seen that his friends pushed a theology that made Job invisible, pushing platitudes that urged him to not complain or speak to God. However, he persevered and upheld a theology rooted in personal identity with God (Ticciati, 2013). The results similarly highlight the role of the individual in the New Testament. In this way, these biblical texts compliment the Book of Mormon findings of this research. For example, to fully flesh out the theocentric worldview, a Latter-day Saint client may find utility in considering how their presenting concerns fit into the overall context of their spiritual life purpose. Or when client emotions arise, especially if affect appears to be blocked, considering how feelings fit into or conflict with the theocentric worldview may put the mental health professional into a position to understand the meaning of those emotions to the client. When anger or hurt arises, the mental health professional may ask the client whether they believe it is okay to be angry toward a parent, parent figure, or at God himself, and then explore ways to find meaning for affect within the spiritual theocentric view. Such approaches can strengthen alliance and deepen therapeutic work.

A third implication is the need for connecting with others in the path toward God. Within the Book of Mormon narrative are imbedded communal and collectivist values. In a study of religion in the

U.S., the Pew Research Center found that among all Christian religions, Latter-day Saint members are one of the most highly involved in their congregations (Sandstrom, 2016). Latter-day Saints need to not only connect with deity, but members of the Latter-day Saint church have spiritual needs and values in regard to identity within a communal belonging. Keeping in mind ways in which Latter-day Saint clients relate to or are disconnected from others of their faith community may facilitate therapeutic work in counseling.

Fourthly, this research points mental health professionals toward the spirituality of Latter-day Saints. Most of those who join the Latter-day Saint Church of Jesus Christ have done so to get closer to God, to find happiness and a sense of peace, or to find a better sense of purposefulness and direction in their lives (Anderson, 1977). However, often counseling can be secularized by humanistic and cognitive-behavioral approaches, and when clients do address their religion, often they approach it from historical, political, and cognitive rather than spiritual perspectives. While religious clients have often been socialized to secularize their presenting problems, doing so may not be in their interest. The findings of this study point mental health professionals to the spiritual roots of the Latter-day Saint client and community. For example, the collocation results highlight a view of God as a self-defined individual who speaks to humans to give us direction. This view of God implies a spiritual identity of the Latter-day Saint client that occurs in a relationship with God, which may be positively internalized. Even those who have left the Church of Jesus Christ of Latter-day Saints may retain a portable theocentric worldview rooted in the Book of Mormon. In a counseling setting, assessing how spiritual identity intersects with mental health constitutes multiculturally competent counseling and may lead to empowerment of Latter-day Saint clients.

A fifth implication is regarding consideration of how the worldview of the mental health professional impacts clinical work. Latter-day Saint professionals with a theocentric spirituality need to be aware of their subjectivity when working with religious clients with a Christocentric or pneumocentric

spirituality or when working with nonreligious clients with an anthropocentric worldview. As well, non-Latter-day Saint professionals need to be aware of their Christocentrism, pneumocentrism, or anthropocentrism to allow attunement to the theocentrism of Latter-day Saint clients.

Finally, the keyness and collocation results highlight the importance of the Book of Mormon as a significant and unique sacred text for informing professional understanding of Latter-day Saint clients. While some scholars have described the Book of Mormon as having added little new theology that distinguishes it from protestant Christian faiths (Givens, 2015), this corpus linguistic analysis sheds new light on the Book of Mormon, such as having less theophany than the Hebrew Bible, less focus on individuals than the Hebrew Bible or the New Testament, but a broader view of God than either of the biblical texts. Even mental health professionals familiar with the Latter-day Saint faith may gain from this research an appreciation of the Book of Mormon as a document that undergirds the Latter-day Saint worldview, the cognitive awareness of which can inform spiritually integrated and culturally informed practice. This research highlights this unique way in which mental health professionals can view the Book of Mormon as a document to inform the understanding of the Latter-day Saint spiritual worldview.

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Table 3.1*Top Eight Words with Strong Keyness*

Study	Ref.	Token	Study Ct.	Ref. Ct.	G^2*	BIC**
BoM	NT	<i>pass</i>	1571	118	972.13	959.11
BoM	NT	<i>land</i>	1252	50	951.80	938.78
BoM	NT	<i>yea</i>	1254	65	887.15	874.14
BoM	NT	<i>people</i>	1770	231	806.63	793.62
BoM	NT	<i>behold</i>	1640	222	727.57	714.55
BoM	NT	<i>lamanites</i>	701	0	718.71	705.69
BoM	NT	<i>nephi</i>	474	0	485.81	472.80
BoM	NT	<i>nephites</i>	375	0	384.29	371.27
NT	BoM	<i>jesus</i>	983	190	955.57	942.55
NT	BoM	<i>said</i>	1061	386	659.24	646.23
NT	BoM	<i>man</i>	869	469	337.13	324.11
NT	BoM	<i>paul</i>	170	0	310.98	297.96
NT	BoM	<i>peter</i>	160	1	281.55	268.53
NT	BoM	<i>disciples</i>	243	54	218.20	205.18
NT	BoM	<i>answered</i>	203	32	217.08	204.07
NT	BoM	<i>john</i>	136	4	216.54	203.52
BoM	HB	<i>yea</i>	1254	275	1725.65	1711.97
BoM	HB	<i>lamanites</i>	701	0	1656.77	1643.08
BoM	HB	<i>pass</i>	1571	712	1402.85	1389.16
BoM	HB	<i>nephi</i>	474	0	1119.99	1106.31
BoM	HB	<i>behold</i>	1640	1104	987.70	974.01
BoM	HB	<i>christ</i>	390	0	921.43	907.74
BoM	HB	<i>nephites</i>	375	0	885.98	872.29
BoM	HB	<i>things</i>	914	433	785.77	772.08
HB	BoM	<i>thy</i>	4184	468	1142.43	1128.75
HB	BoM	<i>thee</i>	3343	294	1107.56	1093.88
HB	BoM	<i>thou</i>	4617	611	1064.09	1050.41
HB	BoM	<i>israel</i>	2490	213	840.41	826.73
HB	BoM	<i>lord</i>	7119	1575	720.96	707.27
HB	BoM	<i>said</i>	2938	386	681.35	667.66
HB	BoM	<i>david</i>	953	8	625.84	612.15
HB	BoM	<i>shalt</i>	1509	104	581.96	568.27

* $p < 0.001$; critical value = 10.83

** > 10: very strong evidence against H_0

Note. BoM = Book of Mormon, $n = 270,011$; NT = New Testament, $n = 180,585$; HB = Hebrew Bible, $n = 609,424$.

Table 3.2*Collocation Outputs for the Node word God (RQ5)*

N	Token	Raw Count in 8R 8L Window of Node	Raw Count in Corpus	Observed Proportion	Expected Proportion	MI ²
1	<i>God</i>	1852	1676	1.105	0.006	7.476
2	<i>commandments</i>	91	210	0.054	0.001	6.125
3	<i>word</i>	126	317	0.075	0.001	6.001
4	<i>kingdom</i>	46	151	0.027	0.001	5.617
5	<i>power</i>	113	413	0.067	0.002	5.462
6	<i>keep</i>	41	155	0.024	0.001	5.413
7	<i>church</i>	58	226	0.035	0.001	5.37
8	<i>son</i>	85	340	0.051	0.001	5.332
9	<i>true</i>	26	107	0.016	0	5.291
10	<i>holy</i>	70	298	0.042	0.001	5.242
11	<i>cometh</i>	31	132	0.018	0	5.242
12	<i>am</i>	43	194	0.026	0.001	5.158
13	<i>jacob</i>	22	101	0.013	0	5.133
14	<i>cry</i>	25	115	0.015	0	5.13
15	<i>remember</i>	33	161	0.02	0.001	5.045
16	<i>before</i>	89	436	0.053	0.002	5.039
17	<i>stand</i>	22	108	0.013	0	5.036
18	<i>christ</i>	75	390	0.045	0.001	4.953
19	<i>known</i>	21	110	0.013	0	4.943
20	<i>jesus</i>	36	190	0.021	0.001	4.932
21	<i>who</i>	58	308	0.035	0.001	4.923
22	<i>knowledge</i>	24	128	0.014	0	4.917
23	<i>lord</i>	289	1575	0.172	0.006	4.886
24	<i>is</i>	264	1452	0.158	0.005	4.872
25	<i>deliver</i>	21	117	0.013	0	4.854

Chapter 4: A General Conclusion

The following sections are covered in this chapter: (a) a summary of findings, limitations, and recommendations from manuscript 1; (b) a summary of findings, limitations, and recommendations from manuscript 2; (c) linkages between the manuscripts; (d) implications of collective manuscripts; (e) preprint disposition; and (f) recommendations for future research.

Summary of Manuscript 1

Manuscript 1 examined the topical structure of the Book of Mormon as a sacred text of members of the Church of Jesus Christ of Latter-day Saints and related Latter-day Saint communities using latent Dirichlet allocation (LDA). Two research questions were designed for this study. The first was, what is the topical structure of the Book of Mormon? The second was, what are the levels of topics by book?

Limitations

There were three limitations to this study. The first is related to the number of topics selected, which was $k = 30$. At present there is no literature regarding the number of latent topics in the Book of Mormon, and further research may explore different numbers of topics for potential better model fit. A second limitation was the inability of the model to detect identifiable topics in some books. While the bag-of-words modeling has been useful, it ignores the relationships between words, and more sophisticated algorithms may be needed to detect more complex topics of the Book of Mormon. A third limitation is the subjectivity of interpretation of topics. While there are no wrong answers in a subjective process of topic interpretation, the LDA model identifies only vocabularies, and different people may project different understandings onto the same sets of vocabulary.

Implications and Recommendations

Two implications for researchers and two implications for mental health professionals came from this study. As it refers to researchers, the first implication is regarding the finding that topical structure is centered around book divisions. This finding was not an expected result of the research and

thus may merit further study. For example, future research may examine whether other scripture such as the Doctrine and Covenants, the Hebrew Bible, or the New Testament follow this pattern. A second implication for research is regarding potential for further topic modeling. Topic modeling could be expanded to include the larger corpus of the Latter-day Saint cannon, which includes the Holy Bible, the Book of Mormon, the Doctrine and Covenants, and the Pearl of Great Price. As well, while the number of topics chosen in this study ($k = 30$) allowed for granularity and interpretability, expansion of the number of topics (e.g., 100 topics) would allow for further granularity of the topic model. Examining levels of topics present in smaller portions of text (e.g., individual chapters, author, or other book subdivisions) would allow more precision regarding where in the corpus specific topics occur.

As well, the results suggest two key implications for mental health professionals. First, for outside professionals these topics aid in understanding the spiritual worldview of this population. These topics present a worldview that is centered on God, relationships with God, and how people interact with God, Jesus, and the church. The 30-topic configuration discussed in the article present a distinct theistic-infused worldview that may both befuddle and limit the professional unfamiliar with such a worldview. Second, this research may also deepen understanding of the worldview of this population for those already familiar with Latter-day Saints. Machine learning is a new approach to understanding the topical structure of the Book of Mormon, and there may be some aspects of the spirituality, religion, and scriptures of The Church of Jesus Christ of Latter-day Saints that may be underappreciated, even by Latter-day Saint professionals and clients themselves. The mined topics may amount to an articulation of core aspects of the Book of Mormon as identified in novel ways by the algorithms which may shine unique light on the faith and worldview of Latter-day Saints. Taken together, the results of this research provide a refreshed view of the Book of Mormon, which, in turn, adds a depth of understanding of the Latter-day Saint spiritual worldview.

Summary of Manuscript 2

Manuscript 2 explored keyness and collocation in the Book of Mormon as a sacred text of members of Latter-day Saint communities. There were five research questions that formulated this study. First, what word usage distinguishes the Book of Mormon from the New Testament? Second, what word usage distinguishes the New Testament from the Book of Mormon? Third, what word usage distinguishes the Book of Mormon from the Hebrew Bible? Fourth, what word usage distinguishes the Hebrew Bible from the Book of Mormon? Fifth, in the Book of Mormon, what are the words most closely related to the proper noun “God”?

Limitations

There were two limitations to this study. The first limitation is related to the keyness examination, which used English language comparison. While the Book of Mormon was originally published in English, the text itself has references to its Reformed Egyptian, Hebrew, and other language origins. The Hebrew Bible and New Testament original languages were Hebrew, Greek, and Aramaic. While it is necessary for the texts to be in the same language to have a keyness analysis, some results may be due to translation word choices and may not be due to differences in the original language constructs. Keyness analysis with different versions or languages would produce different results. The second limitation is related to collocation and the minimum number of times a word needed to occur in the text to be included. We chose a large number (100) to allow major collocation themes to emerge. However, this criterion eliminated many less frequently occurring but significant collocates. Future research may explore a more nuanced examination of the less frequently occurring collocates of God in the Book of Mormon.

Recommendations

The obtained results suggest implications for further research and for mental health professionals. Regarding future research, there are three implications. First, while we compared the

Book of Mormon to other monotheistic sacred texts, it could also be profitably compared to sacred texts beyond the Hebrew Bible and New Testament. For example, it may be useful to compare it to the Tripitaka, Vedic and Tantric texts, or to the Quran. As well, there are also implications for further research regarding the collocation analysis and for corpus linguistics generally. As mentioned, analysis of lower frequency terms that collocate with “God” may provide more nuanced results, and collocation analysis of other terms may be useful as well. Further, there currently is little application of corpus linguistic tools for Latter-day Saint religious texts, and it is hoped that this research will inspire researchers to consider new applications of corpus linguistics tools for Latter-day Saint and other religious documents.

There are five implications of this research for mental health professionals. The first implication of this research is the theocentric worldview of Latter-day Saints which is present in the Book of Mormon. The keyness and collocation results present a worldview that is rooted in God and in his involvement in humankind throughout history, which may be called theocentric rather than Christocentric, in which Christology is centered within a larger theocentric perspective. A second implication is the need of Latter-day Saint clients to find identity and personal meaning within the grand Latter-day Saint worldview and narrative. While the keyness results highlight ways in which the Book of Mormon is about groups and civilizations relating to God, the individual and I-thou relationships within the New Testament and Hebrew Bible are also part of the Latter-day Saint scriptural cannon. A third implication is the need for connecting with others in the path toward God. Within the Book of Mormon narrative are imbedded communal and collectivist values. Latter-day Saints need to not only connect with deity, but in the spiritual path members of the Latter-day Saint church have spiritual needs and values in regard to identity within a communal belonging. Fourth, this research points mental health professionals toward the spirituality of Latter-day Saints. Often counseling can be secularized by humanistic and cognitive-behavioral approaches, and when clients do address their religion, often they

approach it from historical, political, and cognitive rather than spiritual perspectives. While religious clients have often been socialized to secularize their presenting problems, doing so may not be in their interest, and the findings of this study point mental health professionals to the spiritual roots of the Latter-day Saint client and community. Finally, the keyness and collocation results highlight the importance of the Book of Mormon itself as a significant and unique sacred text for informing professional understanding of Latter-day Saint clients. This research highlights this unique way in which mental health professionals may view the Book of Mormon as a document to inform the understanding of Latter-day Saint spiritual worldview.

Linkages Between Manuscript 1 and 2

The purpose of this section is to outline the thematic links between manuscripts 1 and 2. Included are both the differences and similarities. Both manuscripts sought to expand multicultural awareness of members of the Church of Jesus Christ of Latter-day Saint in line with CACREP Standard 2.F.2.g (CACREP, 2016). Manuscript 1 examined the topic structure of the Book of Mormon and the levels of topics among the books, title page, and witness statements. Manuscript 2 examined the Book of Mormon as a whole, compared to the Hebrew Bible and New Testament, and in relation to deity. Both assist in accomplishing this multicultural standard.

Contribution to the Literature

This research contributes to the literature in three ways. First, it expands the literature on the spiritual worldview of members of The Church of Jesus Christ of Latter-day Saints and related Latter-day Saint communities and furthers the understanding of mental health professionals regarding how to work with this spiritual and religious population. For example, this research describes the theocentric worldview of Latter-day Saints as well as the need to find individual identity and meaning within the theocentric perspective and within a collectivist and communal religious community. Second, this research introduces ways to use the Book of Mormon as a lens for researchers and professionals to

understand the spirituality of Latter-day Saints. It does this through the topic modeling, keyness analysis, and collocation examination. The topic modeling identifies topics present in the sacred text, the keyness analysis identifies distinctions between the Book of Mormon and other sacred texts, and the collocation study presents information on how God is presented in the Book of Mormon. Prior research on the Book of Mormon has not examined it for the purpose of helping mental health professionals develop competence in working with this population. Third, this research introduces corpus linguistic tools for use in examining Latter-day Saint spirituality for multicultural purposes. This is a unique application of these methodologies and opens up new ways to study and understand this population. Taken together, this research contributes to the literature by increasing understanding of the worldview of this population and expands the literature by introducing new methodologies and tools to examine this spiritual population.

Preprint Disposition

Preprints for both manuscripts were deposited on this dissertation research project's webpage with the Open Science Foundation (<https://osf.io/x2hev/>).

Future Research Agenda

In this section I will describe research imperatives and knowledge gaps that may not be visible when the manuscripts are considered separately. I will also outline my agenda for future research for the next five to 10 years.

Manuscripts 1 and 2 represent the development of a new methodology for the field of mental health. They apply the tools of corpus linguistics to spirituality and support understanding the worldview of a specific religious and spiritual population—members of The Church of Jesus Christ of Latter-day Saints and related Latter-Day Saint communities. While the studies expand the understanding of this population, they raise questions and invite further study. These methods should be further applied to

answer research questions about this population. Additionally, the methods used in these manuscripts may be used to examine the worldview of those from populations with other religious traditions as well.

Below are examples of possible further research that may arise from Manuscripts 1 and 2. Further topic modeling of the Book of Mormon may be considered, authorial differences between authors may be evaluated, and further comparison with other scriptures may be conducted. Authorial or book differences could be analyzed by means of keyness or other corpus linguistics tools. LDA could be used to examine the levels of topical themes among authors rather than by book divisions. As an example of a more granular examination, the top two Book of Mormon writers, Nephi and Mormon, may be compared. Other key Book of Mormon terms could also receive collocation analysis, such as “Jesus” or “power”, to further examine constructs that occur within the text. All of the Latter-day Saint canon could receive a topical structure analysis, and the levels of topics among all these texts may be evaluated. As well, the Book of Mormon topical structure findings may be better contextualized by understanding how they compare to those found in other sacred texts (i.e., the Hebrew Bible, the New Testament, the Holy Quran).

My immediate research goal is to seek publication of manuscripts 1 and 2. Beyond that, I will seek to consider further the implications of this dissertation research and to expand my research agenda based on those implications and the research questions they suggest. For the next five years, I expect to continue to use corpus linguistics methods to examine Latter-day Saint and other sacred texts. There are also other Latter-day Saint corpuses available for examination, including the General Conferences of The Church of Jesus Christ of Latter-day Saints (i.e., twice a year conference messages from Church leaders to members worldwide), which have had limited corpus linguistics examination to date.

As well, I am interested in research related to mental health treatment. Areas of interest include counselor training, internalization of counselor identity, and the role of professional associations in counselor career development. I am interested in group work and in the role of emotions in counseling.

In the next five to 10 years, I expect to explore how corpus linguistics and other methodologies may answer research questions related to these areas.

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Appendices

Appendix A

IRB Determination of Non-Human Subjects

7/30/2021

Oregon State University Mail - Advising - Paul Callister



Callister, Paul <callistp@oregonstate.edu>

Advising - Paul Callister

IRB <irb@oregonstate.edu>
To: "Callister, Paul" <callistp@oregonstate.edu>
Cc: "Dykeman, Cass" <dykemanc@oregonstate.edu>

Wed, Jan 16, 2019 at 10:15 AM

Hello Paul,

Thank you for your email. I have reviewed the attached document and as described, the project does not involve human subjects therefore it does not require IRB review and oversight. If you wish to receive a formal determination from the HRPP office please have your PI submit the document for review. Note the HRPP office is currently implementing a new electronic system, if the document is not received by 5pm on Thursday, the application will need to be migrated into iRIS. Please see our [website](#) for additional information.

Please let us know if you have additional questions related to the submission.

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Appendix B

Biographical Statement

Paul Callister is a Clinical Mental Health Counselor and lives in North Salt Lake, Utah. He received his Associate of Science degree at Salt Lake Community College and his Bachelor of Science with a major in Psychology and minor in Sociology as well as his Master of Education in Clinical Mental Health Counseling, both at the University of Utah. He is pursuing his doctorate in Counselor Education and Supervision at Oregon State University. His professional experiences include working in community mental health, the Utah State Prison, and private practice. His research interests focus on the intersection of spirituality and mental health.