

Emotion Over Time Within a Religious Culture: A Lexical Analysis of the Old Testament

The present reprint is a corrected version of that which appeared in the *Journal of Psychohistory*, Fall, 1994 issue (Volume 22, pp. 235-248). The ERRATUM below appeared in the following issue Winter, 1995, on Page 357.

ERRATUM: In the Fall 1994 issue of the journal, we inadvertently left off the title page the name of Jim Tibbetts as John D. Mayer's co-author of the article "Emotion Over Time Within a Religious Culture: A Lexical Analysis of the Old Testament." Mr. Tibbetts was correctly identified only at the end of the article. We apologize to him for this oversight.

We also apologize to Rudolph Binion for the many typographical errors in his article in the same issue "Being, Doing, Having." We will be pleased to furnish corrected offprints to any readers who ask us for them.

We are happy to announce the appointment of Jill B. Root as proofreader for the journal.

People construct cultures in an effort to promote family relations, order, power, spirituality—and more generally their personal well-being and happiness.¹ But can cultures succeed in increasing happiness? Progress has sometimes been defined as a society's ability to do just that.² Today, tracking polls regularly ask people about their general well-being, and such polls are of potential relevance to historians of the present period. But such polling technology is clearly unavailable to assist the understanding of societies before the 20th century. Yet it may be possible to infer changes in a historical peoples' overall emotions by examining those peoples' historical documents.³ These inferences would be based on recent psychological findings concerning the influence of emotion on thought.⁴ In particular, psychological research has linked emotion to thoughts through a class of *mood-congruency* effects.

Mood-congruency refers to a match between a person's moods and thoughts.⁵ The mood-congruent *judgment* effect states that when a person's mood and ideas match, the ideas will seem "better" (e.g., more plausible) in some way. For example, a sad person will judge sad concepts as richer in their associations, sad attributes as more applicable, and unpleasant examples of categories as more typical than will a happy person.⁶ From the standpoint of a psychological analysis of history this means that one might track the changing emotions within a culture according to the content of the written documents produced by that culture. Other things being equal, happy historical documents should reflect happy people and happy societies; sad documents, sad people and sad societies.

In the present study, we conduct an exploratory examination of the happiness of the Jewish people during their evolution over a twelve-century period, as reflected by the emotional content of the Hebrew Bible (Old Testament). The Hebrew Bible contains thirty-nine books (e.g., *Genesis*, *Ecclesiastes*, etc.) that describe a wide range of personal, social, cultural, and religious events spanning a twelve-century period. We will examine the development of the usage of emotional terms in the Hebrew Bible during that roughly twelve-century period, over which we hypothesize there will be distinct trends in emotional content. For example, specific emotions may increase or decrease over that time. More speculatively, any such trends in the biblical texts may roughly parallel overall changes in the emotions of the Jewish people over that time.

The decision to study the texts of the Hebrew Bible is governed at least as much by its cultural significance as by our confidence that it is entirely amenable to modern data-analytic procedures. The Hebrew Bible does, however, have unique properties of interest to the psychohistorical investigator: It spans a period of enormous historical interest and refers to a religiously stable Jewish group. The mood-congruent judgment effect is strongly established under conditions likely to have been present as the Bible was assembled. For example, Seligman & Sethi found that more optimistic congregations and optimistic sermons co-vary together.⁷ Our hope here is to see whether any evolution of emotion in the Old Testament is present; part of our contribution will therefore be to see whether there are any strongly apparent trends in emotion over the twelve-century period and also to delineate ways in which future investigations might refine such techniques.

MOOD-CONGRUENT JUDGMENT AS APPLIED TO THE HEBREW BIBLE

Different faiths recognize the authenticity of overlapping, yet different, sets of religious books during the period from the 12th to 1st century B.C.E.. The Hebrew Bible, also referred to as the *Tanach*, is based on the 39 books of the Hebrew-language Masoretic text.⁸ The Roman-Canon Old Testament is based on the 46 books of the Septuagint, the original version of which is a Greek translation of the Hebrew.⁹ The two different versions, although indicating religious disagreement, have the scientific advantage of representing two slightly different perspectives on the twelve-century period. To the degree emotional

change is similar over the two versions, we may place greater confidence in conclusions regarding the change of emotions that occurred during that time.

The writers of the Bible were probably individuals who in part recorded several earlier oral traditions that evolved from four primary sources, including a Yahwist, an Elohist, a Deuteronomist, and a Priestly tradition, which were distinguishable according to their characteristic vocabulary, literary style, and historical epoch.¹⁰ These several traditions account in part for why certain stories such as *Genesis* are told in different versions. From secular and certain religious perspectives, a number of subjective authorial and editorial judgments are necessary to create any collective document such as the Hebrew Bible. For example, the choice of the most important topics to be covered, the critical lessons to be drawn from them, and the way such material is presented all provide opportunities for individual and collective judgments.

According to the mood-congruent judgment hypothesis, when alternative materials such as stories are near-equal in quality but differ in their emotional pleasant-unpleasantness, material closest to the author or editor's mood in content will generally be judged superior. The experimental evidence for such mood-congruent bias is compelling, spanning the study of the mentally ill depressed (who not only feel sad, but also think negatively), mood-inductions conducted with college students, and surveys of the general populace.¹¹ In fact, as people's mood changes over as little time as a week, their judgment changes as well.¹² Not only are judgments altered in this way, but so is attention and memory, once again, with happy people attending to and remembering more positive material, and sad people attending to and remembering more negative material.¹³

Given the near-universality of these effects, it appears plausible that judgments concerning a collective work such as the Hebrew Bible would be altered over time according to the moods of its authors. There are several compelling reasons to believe the moods of those who compiled the biblical texts and those of the general populace were intertwined. First, these author-editors were a part of (i.e., sampled from) the population at large. Second, those individuals most likely to be trusted with such an assignment would be those whose moods were congruent with that of the people around them, because according to the mood-congruency hypothesis their judgments would appear superior. Third, to the degree those author-editors consulted with other

experts around them, the perceived goodness of a text would be determined in part by those surrounding individuals' moods (who in turn were drawn from the target population). Fourth, the oral tradition itself would be determined in part by the moods of still other individuals who were a part of the culture. Fifth, this material would have been modified in affective tone so as to be of greatest interest to the Jewish people, and doing so would require adjusting its content to the average mood of those people. Finally, these compilers, because they were part of the culture, would be subject to the same major societal, historical, and religious influence as the populace. For these reasons, the emotional content of the books of the Hebrew Bible should provide an index of the mood of the people who wrote it.

We hope to track the emotional developments of a culture by counting emotion words, divided into several emotional categories, that appear in the 12 centuries of books of the Hebrew Bible. Thus, we will track the change of emotions over the centuries by counting the proportion of emotion words appearing in the writings of each century. Matlin & Stang have already employed lexical analysis over a number of cultures to demonstrate that such techniques can be used to understand a peoples' greater emphasis on positive than negative feelings.¹⁴ By using a similar procedure, we hope to create a historical "tracking poll" examining the changes in emotion of the Jewish civilization for the 12 centuries of the Hebrew Bible.

THE EMPIRICAL STUDY

To study the emotional experience of the Jewish people over the 12 centuries B.C.E., we therefore ordered the books of the Masoretic text plus the seven non-overlapping books of the Septuagint according to general scholarly agreement as to the time they were written.¹⁵ Where a range of possible centuries is given we chose the mean century as the estimate. Thus, the Pentateuch is generally said to have been composed between the 13th and 11th centuries B.C.E., and so we assigned it an estimated date of 12 B.C.E..

Any lexicographic study of emotion words in the Hebrew Bible has to begin with a comparison of words from antiquity to contemporary words. The Masoretic text is written in Hebrew; the Septuagint in Greek. Translations are typically carried out with care, and conducted and checked by scholarly groups from many religious traditions; for the most part these translations agree.¹⁶ A contemporary American-English list of emotion terms, compiled by Clore, Ortony, & Foss,¹⁷ can

be expected to cover most of the terms employed in the Masoretic texts and Septuagint because contemporary English contains more than 290,000 words by one count¹⁸ compared to the approximately 9,000 ancient Hebrew and 6,000 Greek words employed in the Hebrew Bible and New Testaments.¹⁹

HYPOTHESES OF THE STUDY

We assumed that all emotion terms from the Hebrew Bible exist in rough translation because there are apparently few difficulties in translating the emotion terms of antiquity (although their shades of meaning may be changed). There was a legitimate question, however, as to whether representative emotion terms reflecting all major emotion categories of today can be found in the Masoretic text's earliest books (i.e., c. 12th century B.C.E.). We therefore tested whether (a) all among a number of basic classes of emotion (e.g., *happiness*, *anger*, *sadness*, etc.) would be found in books dated as early as 1200 B.C.E.. Our second, central test is for whether (b) the Jewish people had improved emotional experience over time; for example, we expected people might have become more happy over the 12 centuries.

METHOD

We classified common emotion terms common in the Masoretic text (and non-overlapping Septuagint) into nine categories and then counted their usage over time. Our specific methods were as follows:

Step 1: Identification of Relevant Emotion Words

Clore, Ortony, & Foss collected 234 words that could be considered "pure" emotion terms both on the basis of theoretical linguistic criteria, and also based on empirical findings.²⁰ This list is perhaps the most inclusive of pure emotion words today. Some sample terms included, "admiration," "cheerfulness," "hostility," "suffering," and so on. We determined that 132 of Clore et al.'s 234 emotion terms were employed in the Hebrew Bible, by checking each term in Young's concordance to the Masoretic text,²¹ to see which appeared.

Step 2: Classification of Nine Emotion Categories

We next divided the 56 of the original 132 emotion terms into nine broad emotion classes, including four classes of basic emotions (*happiness*, *anger*, *fear*, and *sadness*,²² and five classes of social emotions (*love*, *hate*, *jealousy/envy*, *contempt/disdain*, and *guilt/shame*).²³ The basic

emotion (a) *Happiness Terms* included *cheer, cheered, cheerfulness, contented, delight, delighted, happy, joy, joyful, joyous, merry, pleased, and pleasure*, (b) the *Anger Terms* included *anger, angry, furious, fury, incensed, mad, outraged, and rage*, (c) the *Fear Terms* included *afraid, fear, scared, terrified, and terror*, and (d) the *Sad Terms* including *disappointed, discouraged, miserable, misery, mournful, sad, sorrow, sorry, and woe-stricken*. Among the five social-emotion classes, (e) the *Love Terms* included *affection, compassion, love, lovingkindness*, (f) the *Hate Terms* included *hate, malice, spiteful, and vengeful*, (g) the *Contempt/Disdain Terms*, included *abhor, contempt, contemptuous, disdain, and enmity*, (g) the *Guilt/Shame Terms* included *ashamed, guilt, humiliation, and shame*, and (h) the *Jealousy/Envy Terms* included *envious, envy, jealous, and jealousy*.

Most of the remaining 86 unclassified words were nonspecific or blends of two or more basic feelings. For example, *agony* was not classified because it appears to combine together multiple negative experiences (i.e., potentially anger, guilt, and sadness). Another group of unclassified words were largely cognitive (e.g., *gratified, longing, or self-conscious*). And finally, there were terms denoting singular feelings such as *bitterness*, and *pride* which could not easily be combined with others.

Step 3: Frequency Count of Emotion Categories in the Old Testament

We next tabulated the frequency of occurrence of each of 56 words in each of the 39 books of the Masoretic text, employing Young's concordance,²⁴ as well as for the 7 books unique to the Septuagint employing the concordance to the New American Bible.²⁵ We then summed words across categories to obtain the frequency of occurrence of the various classes of emotions (e.g., Happiness, Anger, etc.) in each biblical book. We used a combination of concordances because Young's concordance, although considered authoritative, does not cover the non-overlapping books of the Septuagint.

RESULTS: PRELIMINARY METHODOLOGICAL CONSIDERATIONS

After obtaining our emotion word-count for each book of the Hebrew Bible/Septuagint, we needed to correct the absolute number of emotion words for the length of the particular book in which the word appeared. There are two reasonable ways to do this and we employed both although we will uniformly report only the second method as the two were in general agreement. First, the frequency of a given emotion-class in a book (e.g., happy terms in *Genesis*) can be divided by all

TABLE 1. Frequency per 10,000 Words of Emotion-Terms Over the Books of the Hebrew Bible/Septuagint

Hebrew Bible	Estimated Century	Basic Emotions				Interpersonal/Social Emotions					Total
		Happiness	Anger	Fear	Sad	Love	Hate	Contempt	Guilt	Envy	
Genesis	12	1.05	2.10	6.29	2.62	3.67	2.10	0.26	0.52	0.79	19.40
Exodus	12	0.00	1.31	4.57	0.98	0.98	0.98	0.00	0.33	0.65	09.80
Leviticus	12	0.00	0.89	3.12	0.45	0.89	0.89	2.68	3.57	0.00	12.50
Numbers	12	0.32	3.50	1.27	1.91	0.00	0.32	0.64	0.95	3.50	12.39
Deuteronomy	12	2.54	5.40	13.67	0.95	7.63	6.36	1.27	0.00	2.23	40.05
Joshua	10	2.78	1.67	5.56	0.00	1.11	0.56	0.00	0.00	0.56	12.24
Judges	10	0.00	4.40	3.85	0.55	2.20	2.20	0.00	1.10	0.00	14.28
Samuel-I	10	1.25	2.51	11.29	2.51	4.18	0.00	0.84	0.42	0.00	23.01
Samuel-II	10	1.98	1.98	4.46	3.47	3.47	2.98	0.00	1.98	0.00	20.33
Ruth	9	4.19	0.00	8.39	0.00	4.19	0.00	0.00	0.00	0.00	16.78
Kings-I	9	2.99	2.14	3.85	2.14	2.99	0.43	0.43	0.86	0.86	16.68
Kings-II	9	0.00	3.57	8.48	0.00	0.45	0.00	0.00	0.00	0.00	12.49
Songs	9	10.65	3.55	3.55	0.00	113.56	0.00	0.00	0.00	3.55	134.85
Amos	8	2.37	2.37	4.74	11.85	2.37	9.48	4.74	0.00	0.00	37.93
Hosea	8	3.64	10.92	3.64	10.92	23.67	1.82	0.00	9.10	0.00	63.73
Micah	8	6.14	9.22	6.14	6.14	9.22	6.14	3.07	12.29	0.00	58.37
Isaiah-I	7	10.22	9.25	15.09	15.58	1.95	1.46	0.97	5.84	1.46	61.83
Jeremiah	7	3.62	10.85	10.85	6.99	3.14	2.65	0.24	6.99	0.00	45.34
Naham	7	0.00	31.75	0.00	7.94	0.00	7.94	0.00	7.94	7.94	63.49
Habakkuk	7	6.97	13.94	20.91	34.84	0.00	0.00	0.00	13.94	0.00	90.59
Zephaniah	7	11.66	17.49	11.66	11.66	5.83	0.00	0.00	17.49	11.66	87.46
Isaiah-II	6	23.05	11.52	15.77	6.67	6.67	3.64	0.61	11.52	0.61	80.06
Lamentations	6	5.49	35.71	8.24	19.23	5.49	2.75	2.75	0.00	0.00	79.67
Ezekiel	6	1.59	10.36	4.78	4.52	1.59	2.92	0.84	2.52	0.84	34.27
Haggai	6	9.28	0.00	18.55	0.00	0.00	0.00	0.00	0.00	0.00	27.83
Zechariah	6	5.62	3.75	5.62	7.50	5.62	0.00	1.87	5.62	7.50	43.12
Ezra	5	9.49	1.36	1.36	1.36	0.00	0.00	0.00	4.07	0.00	17.62
Nehemiah	5	7.65	1.91	8.61	6.69	0.96	0.00	0.00	0.00	0.00	25.82
Job	5	7.94	4.23	24.35	8.47	0.53	2.12	4.23	2.12	0.53	54.52
Proverbs	5	19.31	8.97	21.38	6.21	19.31	15.17	1.38	11.72	4.83	108.28
Obadiah	5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	15.87	0.00	15.87
Malachi	5	23.32	0.00	46.65	0.00	17.49	11.66	17.49	0.00	0.00	116.62

TABLE 2. Correlations of Emotion-Usage Over Books of the Hebrew Bible/Old Testament

Emotion Category	Emotion Count Relative to All Words or Emotion Words	Biblical Text	
		Masoretic	Masoretic plus Septuagint
<i>Basic Emotions</i>			
Happiness	All Words	.42**	.43**
	Emotion Words	.44**	.51**
Anger	All Words	.24	.24
	Emotion Words	.07	.10
Fear	All Words	.32*	.31*
	Emotion Words	-.13	-.09
Sad	All Words	.16	.06
	Emotion Words	.05	-.09
<i>Social Emotions</i>			
Love	All Words	-.08	-.09
	Emotion Words	-.24	-.24
Hate	All Words	.11	.01
	Emotion Words	-.22	-.32*
Contempt/Disdain	All Words	.11	.09
	Emotion Words	-.14	-.10
Guilt/Shame	All Words	.19	.18
	Emotion Words	.10	.05
Envy/Jealousy	All Words	.02	.03
	Emotion Words	-.24	-.24

the emotion words appearing in that given book. This approach yields the proportion of a type of emotion relative to all emotion in the book. A second approach is to divide the number of emotion terms of a given class by all the words appearing in the book (e.g., all words in *Genesis*). We prefer this second approach because we are interested in the absolute rise and fall of a given emotion relative to all discourse, rather than its status relative to other emotions. We estimated words in a given book by measuring its centimeters of text in the Revised Standard Version of the Bible,²⁶ and, separately, its centimeters of verse, and multiplying each by the number of words typically found in a centimeter of that respective material.

An examination of Table 1 shows the emotional word-count as a frequency of all words for each book. These word-counts reflect the emo-

tional content of certain key books in a manner that supports the general validity of our word-count procedure. For example, Table 1's "love" column indicates that *Song of Songs* has the highest count of love terms in the Hebrew Bible which reflects its descriptions of a love relationship. Table 1's "anger" and "fear" columns also reflect, for example, that *Jonah* describes an angry/fearful relationship between Jonah and God. Sadness words are very frequent in *Lamentations*, as the book's name implies they should be. These relative counts indicate that the word-count approach at least coarsely reflects the emotional tone of the individual books.

CENTRAL HYPOTHESES

Were there particular emotional experiences that may not have been present in the 12th century B.C.E.? To answer this question, we examined word frequencies for our nine emotion categories for the five books dated between the 11th and 13th centuries (*Genesis*, *Exodus*, *Leviticus*, *Numbers*, and *Deuteronomy*). As can be seen from the top rows of Table 1, each emotion category found at least some representation within the earliest five biblical books. Thus, all major forms of emotion seemed in use between the 11th and 13th centuries B.C.E..

Does emotion change over time? Our central test examined whether there were changes in emotional experiences over the twelve-century period. We correlated each of the given nine emotional categories with century (coded from "1":12th Century B.C.E. to "12":1st Century B.C.E.) in four variations because of the importance of the analysis. We estimated our emotion frequency counts both relative to the total emotion words in a book and relative to the total of all words in a book. Second, we employed books of the Hebrew Bible alone, and also books of the Hebrew Bible plus the seven non-overlapping books of the Septuagint. The results can be seen in Table 2; several findings were significant: Most reliably, as the centuries progressed, more mention was made of happy terms. This result occurred whether happiness was measured relative to the total words per book in the Masoretic text ($r(39) = .42, p < .01$), or in the Masoretic text plus Septuagint ($r(46) = .43, p < .01$); or was measured relative to the total emotion words in a book in either of those two works (Masoretic text: $r(39) = .44, p < .01$; Septuagint: $r(46) = .51, p < .01$). An examination of the happiness column in Table 1 indicates that during the 12th century B.C.E., almost all that was written was relatively low in the mention of happiness terms. But, beginning in the 9th century B.C.E. and extending to the

2nd century, books became more diverse in their relative happiness, ranging from high to low in happiness.

No other emotions changed so consistently over time, although a few additional relationships were significant.²⁷ Thus, the central finding of this section is that happiness terms rose over time in the biblical text.

FURTHER STATISTICAL CONSIDERATIONS

The books of the Hebrew Bible are often divided into three or four classes, i.e., *The Pentateuch*, the *Writings* (often divided into the *Historical* and *Wisdom* categories), and the *Prophets*.²⁸ Changes in emotion terms may therefore be due to the type of book in which they appeared rather than due to changes in time. Such effects can be separated out employing the statistical technique of multiple regression. When we employed a multiple regression to check for the influence of type of book, we obtained clear results that the increase in happiness was related to the change in centuries, and was not related to the particular type of book (e.g., historical or wisdom).²⁹

DISCUSSION

This study examined the relation between time and emotion over a twelve-century period. Our first finding was that emotions from nine basic categories were apparently present in writings from the 13th-11th centuries B.C.E.. This suggests that the emotions we experience today may have been fairly stable over time, although we draw such a conclusion tentatively, given that more contemporary feelings may have been added during early revisions of biblical texts or through the vagaries of translations. We also found that happiness, but not other emotions, increased over the twelve-century period. This effect was found independently for both the Masoretic text and Septuagint, and was found whether happiness was calculated relative to emotion words or all words, and was found even when the type of biblical book (i.e., historical or wisdom) was held constant statistically.

Our procedures led to the clear conclusion that happiness increased with time in the Hebrew Bible. Assuming that variations in these procedures (e.g., alternative choices of emotion categories; use of computerized concordances) will lead to the same conclusion, this finding has considerable implications for a psychology of religion. As noted in the introduction, cross-sectional studies have already indicated that the emotional content of sermons covaries with the emotions of people in the

congregation.³⁰ Based on this and other evidence, our assumption is that such changes reflect increased happiness among the Jewish people over the twelve-century period. Given the plausible evidence for an increase in happiness over the 12 centuries described in the Hebrew Bible, it is worth turning to a consideration of its possible causes.

The most intellectually interesting and provocative influence would be that of religion itself. True religious belief (at least in Judaism and Christianity) requires emotional involvement and even emotional transaction with God; these religions take a "very selective attitude" toward emotion, often emphasizing the positive and numinous.³¹ Today, belief in religion and related spirituality is known to help individuals cope with their more serious problems.³² Another more obvious effect of religion is that more religious individuals are more apt to provide help to others.³³ Perhaps these influences together account for the fact that the more time spent in religious activities correlates with more overall happiness.³⁴

Arguments against this hypothesis are possible as well. If religion were essentially constant over the twelve-century period, the religious system in-and-of itself could not account for a rise in happiness, unless its effects were cumulative over the generations. A great number of other influences might have altered peoples' emotions over the twelve-century period instead of religion (or in addition to it). It is possible that the increased happiness had more to do with improved technology, societal, or other cultural changes. These societal changes might have occurred independently of religion or not. One way in which religion may have been involved was to bring about social change by establishing customs and laws that ensured the well-being of its adherents. For example, one area of considerable interest to contemporary psychohistorians is the treatment of children.³⁵ Archeological and historical evidence suggests that many ancient civilizations spanning the globe engaged in child mistreatment and ritual sacrifice.³⁶ The increased happiness of the Jewish civilization may have been due to their successful struggle for the increased betterment of their children; biblical sources (e.g., the story of Abraham and Isaac)³⁷ indicate that early familiarity with child sacrifice was replaced by laws and rules to prohibit such practices.

A study such as this one cannot determine what caused the mood change but at best only provide some evidence that it occurred. It is possible that further studies could chart historical periods in which there

were greater changes in culture than religion, or in religion than culture, to see which increases happiness more; but the likely interactions between religion and culture will make such research highly challenging.

Most religions are full of information concerning how emotions should be dealt with. Moreover the practices of emotional control, religious or otherwise, within a civilization may exert a substantial influence on emotion.³⁸ Although our investigation is historical, our concern is also for the present and the future in the sense that understanding what influences increased emotional well-being in the past might provide evidence for what can improve it in the present. Evidence, albeit indirect, that the happiness of the Jewish people increased from the 12th to 1st century B.C.E. suggests that certain aspects, religious or not, of that religious civilization may have exerted positive psychological benefits to its adherents; understanding such positive contributions may improve our welfare today.

John D. Mayer, Ph.D., is Associate Professor of Psychology at the University of New Hampshire, Durham, NH 03824, where he studies human personality from a systems perspective, and in particular, the interaction of emotion and cognition. James J. Tibbetts is a Candidate for the Licentiate of Sacred Theology at the International Marian Research Institute, University of Dayton, Dayton, OH 45469, who is interested in the psychological study of religion, and in religious education.

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14. M.W. Matlin, & D.J. Stang, *The Pollyanna Principle: Selectivity in Language, Memory, and Thought*. Cambridge, MA: Schenkman, 1978.
15. Brown, Fitzmyer, & Murphy, "The Jerome Biblical Commentary," p. 519.
16. Wurthwein, "The text of the Old Testament..."
17. G.L. Clore, A. Ortony, & M.A. Foss, M.A., "The Psychological Foundation of the Affective Lexicon." *Journal of Personality and Social Psychology*, 53(1987): 751-766.
18. see p. xi, *Oxford English Dictionary* (2nd ed.). J.A. Simpson & G.S.C. Weiner (Eds.). Oxford University Press, 1989.
19. J. Strong, *Strong's Exhaustive Concordance*. Peabody, MA: Hendrickson Publishers, 1984. [Original version published 1890].
20. Clore, Ortony, & Foss, "The Psychological Foundation..."
21. Young, *Analytical Concordance to the Bible*.
22. For treatments of basic emotion, see P. Ekman, & W.V. Friesen, *Unmasking the Face—A Guide to Recognizing Emotion from Facial Cues*. Englewood Cliffs, NJ: Prentice Hall, 1975; and R. Plutchik, *Emotion: A psychoevolutionary synthesis*. New York: Harper & Row, 1980.
23. Our aim here was to develop a sensible means of discussing Masoretic text-based emotions by group rather than on a word-by-word basis, rather than to create any new classification of emotions.
24. Young, *Analytical Concordance to the Bible*.
25. S.J. Hartdegen (ed.), *Nelson's Complete Concordance of the New American Bible*. Collegeville, MN: Liturgical Press, 1977.
26. *The Bible* (Revised Standard Version. New York: Collins, 1973).
27. Fear words rose significantly over the centuries when compared to all words, although this effect fails to appear when fear is compared to other emotion words. The reason for this difference may be that emotion words rose gradually (albeit

nonsignificantly as a whole over the centuries, $r(46) = .27$, n.s.), and fear may have been rising slightly faster than the other emotion categories; relative to the other emotion words, however, fear gradually declined. And anger declines, relative to emotion words only, in the Septuagint only. The limited nature of this latter finding with anger suggests it may be due to chance alone, although anger also appears to decline relatively (albeit, nonsignificantly, and more gradually) in the Masoretic text.

26. See p. 4 of R.T. Murphy, *Background to the Bible*. Ann Arbor, MI: Servant Books, 1978.
29. To correct for type of book, we first coded each book according to the class in which it fell (Pentateuch, Historical, Wisdom, or Prophet), and employed this information to predict century. Unsurprisingly, given that the Pentateuch was written first, there was a statistically significant prediction from type of book to century ($R(3,36) = .72$, $p < .001$). We next determined whether emotion terms could predict century independent of the book-type from which it was taken. To do this, we next entered the nine emotional-class frequencies into the regression. The multiple R rose significantly, indicating that happiness increased the prediction of century independent of the type of book being written ($R(12,27) = .84$, p of change $< .11$; β for happiness = .40, $p < .03$). Although Step 2 of the regression showed only a trend toward greater prediction owing to the increased degrees of freedom in the analysis, happiness was a clearly significant predictor of century, even above and beyond the type of book. This replicated even more strongly for the Masoretic text-plus-Septuagint (Step 1: $R(3,36) = .70$, $p < .001$; Step 2: $R(12,34) = .85$, $p < .01$; β for happiness = .57, $p < .002$). Interestingly, partialling out books indicated that other effects might be significant (e.g., declining sadness was a better predictor of century than happiness in the Masoretic text) but given the small N such competing results are probably best left uninterpreted at present.
30. Seligman & Sethi, "Optimism and fundamentalism."
31. See p. 147 of P.W. Pruyser, *A Dynamic Psychology of Religion*. New York: Harper & Row, 1968.
32. See W. James, *The Varieties of Religious Experience*. New York: Vintage Books, 1990 [Original work published 1902]; and R.S. Lazarus, & S. Folkman, *Stress, Appraisal, and Coping*. New York: Springer Publishing Company, 1984.
33. C.D. Batson, K.C. Oleson, J.L. Weeks, S.P. Healy, P.J. Reeves, P. Jennings, and T. Brown, "Religious prosocial motivation: Is it altruistic or egoistic?" *Journal of Personality and Social Psychology*, 57(1989): 873-884.
34. R.F. McClure, & M. Loden, "Religious Activity, Denomination Membership and Life Satisfaction." *Psychology: A Quarterly Journal of Human Behavior*, 19(1982): 12-18.
35. see, for example, L. DeMause, "The history of child assault." *The Journal of Psychohistory*, 18(1990): 1-29; and L. DeMause, *Foundations of Psychohistory*. New York: Creative Roots, Inc, 1982.
36. DeMause, "The history of child assault."; D. Soren, A. Ben Abed Ben Khader, & H. Slim, *Carthage: Uncovering the Mysteries and Splendors of Ancient Tunisia*. New York: Simon and Schuster, 1990; L.E. Stager, & S.R. Wolff, "Child Sacrifice at Carthage: Religious rite or Population control?" *Biblical Archaeology Review*, 10(1984): 31-51.
37. H. Maccoby, *The Sacred Executioner: Human Sacrifice and the Legacy of Guilt*. New York: Thames and Hudson, 1982.
38. Stearns & Stearns, "Emotionology: Clarifying the history of emotions and emotional standards."