Chapter 9

Statistical Determination of Genre in Biblical Hebrew: Evidence for an Historical Reading of Genesis 1:1–2:3

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Abstract. It is axiomatic that a Biblical text cannot be properly interpreted unless its genre is known. This is particularly true for poetry *vis-à-vis* prose. The goal of this study was to determine the genre of Genesis 1:1–2:3 and to explore the hermeneutical implications of this finding. To accomplish this task it was necessary to develop a method to rigorously distinguish Biblical Hebrew poetry from narrative, in general. But the task was formidable, because Biblical authors left us no hermeneutical treatises, labeled their texts inconsistently (and these refer to content rather than form) and did not even have a word for poetry. Moreover, our best manuscripts attest a unique "brick-upon-brick" stichography only for old poetry. Perforce, Hebraists have turned to study the texts themselves to discover an objective and accurate method for distinguishing these genres. Subjective descriptions of each abound, but the nature of these genres is that the characteristics of each blur into the characteristics of the other: major features of one are not absent from the other. An alternative approach therefore was undertaken to address this problem: a statistical analysis of countable linguistic features. Two populations were identified using the descriptive methods well documented in the literature. A stratified random sample from each population was generated and the finite verb distribution for each was determined. Side-by-side scatter plots of the ratio of preterites to total finite verbs for each text in the narrative sample *vis-à-vis* those in the poetry sample revealed that this ratio varies with genre to the extent that it could have the inferential capacity to classify texts. To determine if this was the case, the null hypothesis H_0, that a logistic regression model

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derived from the relative frequency of preterites observed in the joint-sample classifies texts according to genre no better than chance classification, was tested against the alternative hypothesis H_1, that the model classifies texts better. This null hypothesis was rejected with $p < .0001$. In addition, the model was found to reduce the number of classification errors in the sample by more than 96% when compared to random classification. When extended to the population level, it was found that our logistic regression model based on relative frequency of preterites yields a superb protocol (between 85.5 and 95.5% reduction in the number of classification errors) for categorizing texts as narrative or poetry at a 95% confidence level. The logistic regression model calculates the probability that a text is a narrative. For Genesis 1:1–2:3, this probability is between 0.999942 and 0.999987 at a 99.5% confidence level. Thus, we conclude with statistical certainty that this text is narrative, not poetry. It is therefore statistically indefensible to argue that this text is poetry. The hermeneutical implication of this finding is that this text should be read as other historical narratives, whose authors evinced supererogatory concern with the past and staunchly upheld the historicity of their accounts even to the point of challenging their contemporaries to prove or disprove their documented historical references.

1. Introduction

What kind of text is Genesis 1:1–2:3? To answer this question it is necessary to address a longstanding *desideratum* of Biblical Hebrew studies: a method to objectively and accurately determine the genre[†] of texts.[1] In particular, the most pressing and prevalent task is distinguishing poetry from prose. As *Berlin* [2003, p. 2097] has recently said,

> The identification of biblical poetry and the definition of what constitutes poetry in the Bible has been a vexed issue since early post-biblical times.

1.1 The Importance of this Task

Few if any scholars would doubt the significance of establishing the

[†] See the Glossary (p. 725, after the Appendices and Endnotes) for definitions of selected terms.

genre of texts as a prerequisite to correctly interpreting them. *Wendland* [1994, p. 386] remarks:

> … what are the features that mark a text as being 'poetic' as distinct from 'prosaic' in nature? The distinction between prose and poetry is important, for it affects how the process of interpreting a given text is carried out, for example, more or less literally, or with greater or lesser emphasis on formal patterning.[2]

But how severe are the philological and hermeneutical repercussions for genre misidentification?

In a *Hi and Lois* comic strip from a number of years ago, baby Trixie is listening to Hi and Lois having a conversation, which is full of figures of speech: "hot news," "bumped into," "knocking down doors," "ran into," "hit me up for a loan" and "my boss chewed me out." Insensible to such metaphors she imagines her parents involved in a chain of violent encounters [*Browne*, 1989]. Her utterly erroneous interpretation is more than just humorous and illustrative. When applied to Biblical hermeneutics, it poignantly teaches us that genre misidentification of Biblical texts will lead to equally fatuous misunderstanding—but, with far more serious consequences.

Consider the following two texts: Psalm 98:8: "The rivers will clap their hands. In unison the mountains will sing for joy" and 2 Kings 24:10–17:

> At that time the servants of Nebuchadnezzar the king of Babylon came up to Jerusalem and the city was besieged … and Jehoiachin king of Judah came out to the king of Babylon … [Nebuchadnezzar] carried off all the treasures of … And the king of Babylon made Mattaniah, Jehoiachin's uncle, king in his place.

How should these texts be read? Doubtless, the first text is not suggesting that rivers and trees literally clap their hands. Such an absurdity signals the reader that the words of the text comprise the vehicle of a metaphor and, therefore, that the genre of the text is poetry.

On the other hand, the second text is clearly asserting that the Babylonians actually executed a prolonged siege of Jerusalem. Its genre is narrative. Even without the independent corroboration of the

Babylonian Chronicle, the reader knows what the Biblical text is saying, whether he assents to its historicity or not.

What if the first text were read as narrative instead of poetry? What if the historical account of the surrender of Jerusalem in 597 B.C., which is recorded in 2 Kings 24:10–17, were read as if it were non-literal? What if the reader were to look for some non-existent tenor of a vehicle, which plainly reports reality? Obviously, to read a text counter to its genre would lead to aberrant philology and tortured hermeneutics.

As important as it is to distinguish poetry from prose for texts in general, it is even more important for Genesis 1:1–2:3 in particular, because there is nothing less at stake than our understanding of the fundamental text of the Bible.

Is Genesis 1:1–2:3 an historical narrative (with the plain sense of its words corresponding to reality and the sequence of events portrayed correlating with real time) or an extended poetic metaphor?

Answering this question will determine how Genesis 1:1–2:3 *should* be read.

1.2 Overview of this Chapter

Section 2 examines two important interpretive issues: the major approaches, which have been advocated for reading Genesis 1:1–2:3, and the interrelationships among author, readers and text, which must be understood to properly interpret a text. Subsequent to this, Section 3 briefly surveys and evaluates qualitative approaches to distinguishing Biblical poetry from narrative. Then, the bulk of this chapter (Sections 4–5) presents the method and results of a quantitative approach to determining the genre of texts: a statistical model, which accurately classifies texts as poetry or prose. After this general *desideratum* is accomplished, this model is applied—in Section 6—to Genesis 1:1–2:3, in particular, in order to answer the crucial question: is this text narrative or poetry? Section 7 explores the hermeneutical implications of this determination. And Section 8 contains the conclusions of the study. Acknowledgments follow. The back matter comprises four Appendices, Endnotes, Glossary and References.

2. Interpretive Issues

2.1 Three Approaches to Reading Genesis 1:1–2:3

How *should* we read Genesis 1:1–2:3? Note that I said *should*, not *can*. There are three *possible* approaches to reading and interpreting this text:

(1) reading it as an extended poetic metaphor, which communicates truth but the plain sense of its words does not correspond to reality;
(2) reading it as a narrative, which purports to be the truth when in fact it is in error;
(3) reading it as a narrative, which accurately portrays reality.[3]

In approach number 1 this text is read as an extended poetic metaphor, (rather than as an historical narrative), which teaches a truth, but its words do not have their normal meanings and the sequence of events portrayed in it should not be correlated with real time. But is this approach linguistically defensible? First we will briefly consider the morphology, syntax and vocabulary of this text.

Its grammar differs little from other narrative texts. The morphological sequences found in this text are well represented in historical narrative texts but not in poetic texts.[4] Moreover, its vocabulary is neither rare nor obscure. Taken at face value its meaning also appears to be clear. In fact, advocates of this approach often acknowledge the plain sense of the text[5]—God created the world in six 24-hour days—but at the same time insist that this cannot be what the text means.[6]

In addition its plain sense does not appear to be absurd or contradictory to the rest of the Bible—the normal diagnostics for detecting metaphor. For example, it is obvious that the phrase, "YHWH is my rock," is the vehicle of a metaphor, because its plain sense is both absurd—since the LORD is not actually a rock—and contradictory—because He is a spirit.

Why then is a straightforward historical interpretation rejected? Two lines of arguments have been advanced: textual and extra-textual. As far as the first is concerned three objections have been offered against

an historical reading of the text.[7] The first objection offered is that an historical reading stems from a misunderstanding of the nature of narrative; that the correct understanding is that the text tells a story, which is to be separated from the events it portrays and communicates a message, which is also distinct from actual history.

Waltke [2004], drawing on *Sternberg* [1985], presents this objection.

Although, it is true that Sternberg separates the narrative from the events, he *vehemently opposes* the idea that the *Biblical author* separated them:

> Suppose the Creation narrative elicited from the audience the challenge "But the Babylonians tell a different story" .... Would the biblical narrator shrug his shoulders as any self-respecting novelist would do? *One inclined to answer in the affirmative would have to make fictional sense of all the overwhelming evidence to the contrary; and I do not see how even a confirmed anachronist would go about it with any show of reason. This way madness lies—and I mean interpretive, teleological as well as theological madness* [*Sternberg*, 1985, p. 32; emphasis mine].

Moreover, Sternberg's main thesis is that the genius of Old Testament narrative is that the historiographical, literary and theological (what he calls "ideological") aspects of the text are not only in balance but dependent on one another in a non-mutually exclusive nexus [*Sternberg*, 1985, pp. 1–57].[8]

The second objection is that the text exhibits temporal incoherence. Anachrony elsewhere in the Scriptures is adduced as evidence: in the Gospels (between pericopes), Genesis 11:1–9 being a flashback, and the order of the plagues in Psalm 105 differing from the account in Exodus. But all but the last of these occur between narratives, not within them. Psalm 105 (and Psalms 78 and 106) represent a special case, in which narrative clauses are juxtaposed in poetic bicolons.

Or, it is alleged that structure for theological purpose can nuance temporality. The structure of the account of the fourth day of Creation is given as an example. Although it is true that this account is in the form of an elaborate palistrophic structure, which defines the exact role of the sun, moon and stars as "rulers," this does not preclude the account referring to actual events.

Or it is asserted that a literal reading would contradict later texts[9] and scientific paradigms: that too many events happened on day six for it to be an ordinary 24-hour day; that light could not precede the creation of the Sun, etc. However, these are just opinions. In short, other texts (Biblical or otherwise) and non-textual considerations are given priority over the text itself in interpreting it.

Finally, the third objection is that there are anthropomorphisms in Genesis 1:1–2:3. But, the Biblical narratives are replete with anthropomorphisms: in the patriarchal narratives, in Exodus, in Joshua, in Judges, in Samuel, in Kings, in Daniel, in Ezra, in Nehemiah and in Chronicles. We certainly would not question the historicity of these texts because of attested anthropomorphisms.

The second line of argument—and by far the main reason—that an historical reading of Genesis 1:1–2:3 is rejected is actually extra-textual: such a reading advances a theory of origins at variance with the reigning scientific theory (whatever is the current incarnation of evolution).

Approach number 1 often is manifested when the text is read through the lens of science (a naturalistic interpretation of empirical data is made to trump the plain reading of the text) or when the text is read as if it were meant to be a scientific treatise. In an effort to make the Biblical text comply with a certain set of conclusions drawn from empirical evidence, approach number 1 is adopted for this text. It is asserted that a literal hermeneutic would introduce contradictions with the findings of science, which has presented supposedly irrefragable proof that the earth is billions of years old.[10] Consequently, the text is interpreted in such a way so as not to contradict these findings. The reason: to save the integrity of the truth of the text. The result: words are assigned meanings, which are deracinated from their immediate literary context and stripped of their plain sense. It is a noble undertaking to defend the truth of the text. But is it linguistically defensible to read *this* text as a poem?

Neither approach number 2 (Genesis 1:1–2:3 is an erroneous narrative) nor approach 3 (Genesis 1:1–2:3 is an accurate historical narrative) has the findings of science as its hermeneutical starting point. In both of these

approaches *this* text is read as a narrative. But they differ regarding its historicity. In approach number 2 the historicity of the text is rejected. In approach number 3 the historicity of the text is affirmed. Proponents of approach number 2 adopt a literal approach to the text, reading the text as a narrative—most Hebraists recognize a narrative when they see one—but at the same time denying its historicity.[11] They adamantly insist that the author believed in the truth of what he was saying, but just as adamantly do not accept the account as factual, adducing putative contradictions with empirical "evidence" to support this position.

On the other hand, in approach number 3, Genesis 1:1–2:3 is read as an historical narrative, which portrays real events. Why read this text as an historical narrative? First of all it is the plain reading of the text. Second, it is the reading that comes from the *text*, not from external considerations. The *text* is the starting point of interpretation. The *text* is the standard, to which the conclusions drawn from empirical evidence must conform. Third, Genesis 1:1–2:3 is linked thematically and lexically to the rest of Genesis and by extension to the rest of the grand narrative recounted in Exodus 1:1–2 Kings 25:30 (which I understand to be an historical narrative).

When the Biblical Creation account in Genesis 1:1–2:3 is read as an ordinary narrative text, albeit, with extraordinary content, it is clear what the author is asserting: eternal God created space, time, matter, the earth, the atmosphere, the oceans, the continents, plants and trees, the sun, moon and stars, aquatic creatures, flying creatures, land animals and man and woman in one week, in that order. Furthermore, if the Flood account (Genesis 6:5–9:29) is read in the same way, we must conclude that that same author is asserting that the earth originally created was inundated with a catastrophic deluge of such proportions that the earth was returned to the empty featureless water globe (its initial state when God created it). Based on this approach to these texts, the only tenable view for the age of the earth is that it is young.

This series of conclusions drawn by the reader is predicated on the hermeneutical approach that the Biblical Creation account (Genesis 1:1–2:3) and the Flood account (Genesis 6:5–9:29) should be read as other historical narratives are read—that these texts relate a

sequence of events in which narrative time corresponds to real time and in which words have a range of meaning refined by a hierarchy of contexts, starting with the text under examination. Underlying this approach is the assumption that these texts are historical narratives.

Three approaches—which one is correct? How did the author of this text *intend* for his text to be read?[12]

2.2 Understanding Texts: The Relationship of Author and Readers

The last paragraph raises an issue that has been hotly debated in literary circles: is it possible to discover the intent of an author? Or is this a quixotic quest, doomed to failure? Since the middle of the twentieth century hermeneutical theory has questioned and in some cases rejected the concept of auctorial intent. *Wimsatt and Beardsley* [1976, p. 1] stated in their now classic essay "The Intentional Fallacy":

> The design or intention of the author is neither available nor desirable as a standard for judging the success of a work of literary art.[13]

It is argued that we cannot know an author's intent, because it was in the mind of the author, a place inaccessible to us.

Although it is true that we cannot know what was in the mind of an author, this does not imply that we cannot know his intent, because evidence of his intent is found in an accessible place, his text. His mind is reflected in his text. In fact, proponents of a relatively new field of text linguistic studies, pragmatics,[14] maintain that textual meaning is author based.

For example, building on the seminal work of *Halpern* [1988], *Winther-Nielsen* [2002] asserts that an author of a text intended to *communicate* something to his readers.[15] So readers are *not* free—contra reader criticism, deconstructionism and post-modernism—to interpret a text any way they choose. Moreover, *Winther-Nielsen* [2002, p. 67] argues that texts are *coherent,* that authors of texts wrote their texts aware of the contexts of their first readers. As he so memorably states: "words are anchored in worlds by the will of the writer".

In clarifying the concept of coherence *Winther-Nielsen* [2002, p. 68] writes:

> The coherence principle first of all explains how *meaning in a contextual sense* is solidly anchored in situations without being completely relative or polyvalent [Winther-Nielsen's italics].

So, the author guides his readers by means of sometimes subtle, sometimes obvious cues how he wants them to read his text. Citing *Tomlin et al.* [1997], *Winther-Nielsen* [2002, p. 69; emphasis mine] states:

> Instead the speaker (or author) becomes the architect of his text who guides his listener (or reader) in construing a *conceptual representation* of events and ideas. The speaker (author) as the architect and the hearer (reader) as constructor must both construe a coherent text through their integration of knowledge and management of information. The hearer (reader) makes pragmatic implicatures from the contextual situation and builds cognitive inferences from the text and the world knowledge he shares with the speaker (author).

In other words, the author shaped his text commensurate with the particular historical, cultural, linguistic and ideological context he had in common with his original readers.

We might picture the production of a text as in Figure 1. The author looks at an event (1) and then at his original readers (2) in order to produce his text (3).

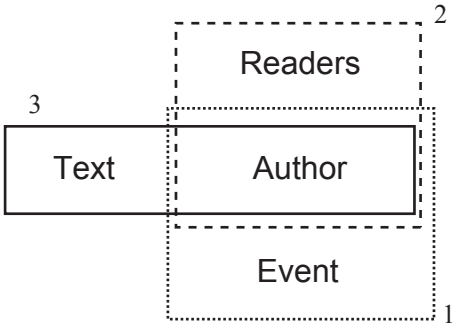

Figure 1. Production of a text by an author.

Our task of interpretation as modern readers is more difficult than that of the original readers: we do not have the advantage of living in

the context(s) in which the text was written. What was intuitive for them, we must deduce. How can we know what was the *conceptual representation* of the author and original readers, since the author has not given us a separate treatise on this subject?[16] *Winter-Nielsen* [2002, p. 69, note 51] quotes *Tomlin et al.* [1997, p. 104; emphasis mine] again in this regard:

> Morpho-syntactic cues reveal the memorial and attentional characteristics of the speakers (author's) *conceptual representation* and direct those of the listener (reader) to conform to the speaker's (author's) conceptual representation.

In other words, a Biblical author has left his stamp on his work in the language itself. The result is that the author—either inadvertently or deliberately—has placed sufficient cues in his text so that it can be interpreted correctly.

Although the author did not provide a separate hermeneutical treatise comprising these cues, modern readers can deduce them by detecting, assembling and cogently analyzing the clues in the text. Readers are not free to apply arbitrary criteria to the interpretive process.[17] As *Winther-Nielsen* [2002, p. 61] says:

> Readers of literary texts are tied to authors by many mutual assumptions that 'constrain how the meaning of texts are defined'.[18]

Halpern [1988, p. 9] states that the reader must "accurately construe the author's intent." So, readers must be guided by the clues offered by the intratextual, intertextual and extratextual contexts of a text.

Thus, texts provide readers clues as to how they should be read. I submit that *whether an author wanted his readers to treat his text as an extended poetic metaphor, which communicates a theological message, or as a historical narrative, which relates both an accurate account of the event and a powerful theological message* [*Sternberg*, 1985],[19] *must have been part of his* ***conceptual representation*** *and fairly obvious to his original readers.* Did he want his readers to believe in the plain meaning of his words or in some derived message disconnected from his words? The text itself will answer the question: should we read this text as an extended metaphorical poem? Or should we read it as an historical narrative?

3. Problems of a Qualitative Approach

3.1 Problems with External Indicators

The task of finding external indicators, which rigorously distinguish poetry from prose, is a daunting one from the outset for at least five reasons. First, there is no word for poetry in Biblical Hebrew. The words "poetry," "poet," and "poem" come from the Greek verb ποιειν *poiein*, "to do" or "to make." There is no corresponding derivation in Biblical Hebrew.

Second, the nature of Hebrew poetry—in contrast to Greek poetry—was not clarified by its contemporaries: there is no extant treatise on Hebrew poetry from the period in which it was written.

Third, Biblical authors did not consistently label their texts—whether it was because they had no category called poetry or because they knew it would be obvious to their readers is a moot point—nor did the Dead Sea Scrolls copyists, nor did the Masoretic scholars responsible for our best Hebrew texts.

Some poems are marked in the text: Exodus 15; Deuteronomy 32; Judges 5; 2 Samuel 1:19–27; 22; Isaiah 5:1–7; Song of Solomon and a dozen or so psalms. Each text says that it is either a שִׁירָה *šîrāʰ* "song" (Exodus 15:1; Deuteronomy 31:30; 2 Samuel 22:1; Song of Solomon) or a קִינָה *qînāʰ* "dirge" (2 Samuel 1:17–27), that someone sang it (Judges 4:24) or both that it was a song and someone sang it (Exodus 15:1; Isaiah 5:1–7).

But not all poems are so marked. Large poetic sections in the Prophets are not marked—for example in Isaiah. Moreover, the marking most likely refers to content rather than form.

Fourth, terms which describe poetic compositions, such as psalms, are used inconsistently and refer to content rather than form. For example, in Psalms, the words מִזְמוֹר *mizmôr* "praise composition" and שִׁיר *šîr* or שִׁירָה *šîrāʰ* "song," occur in superscriptions, but refer to content not form. In addition, not all psalms are so marked. Only 57 have the first term: 35 psalms have the second term only Psalm 18 has the third. Another example is the word מָשָׁל *māšāl* applied to the aphorisms in the

Book of Proverbs. This term refers to the frequent comparisons between abstract principles and concrete observations made in the book.

This leads us to the fifth reason: the extant manuscripts and codices provide no reliable guidance to the reader. This would seem to be surprising at first because, the fact that the four poems Exodus 15, Deuteronomy 32, Judges 5 and 2 Samuel 22 have a distinct stichography in the oldest codices, the Aleppo Codex (A) and the Leningrad Codex (L), could suggest that the copyists had poetic sensibilities.

The Leningrad Codex is the oldest complete extant codex of the Hebrew Bible.[20] In his managing editor's introduction to this codex, *Beck* [1998, p. 11; also note 6] writes concerning the Song of the Sea (Exodus 15):

> This poem, laid out in poetic stichs, is one of our earliest examples of prosody in the Bible. It offers numerous clues as to just what was considered poetry in the early traditions that ultimately informed the Bible.

He is speaking of the codex's "brick upon brick" textual arrangement of Exodus 15 and Judges 5 and the bicolon layout of Deuteronomy 32 and 2 Samuel 22.[21] Is his assessment correct or were the copyists indicating something else?

It is true that these four texts are laid out differently in L, but so are plainly non-poetic lists in Joshua 12:9–24; 1 Samuel 6:17; and Esther 9:7–9. Moreover, other poems in the Torah, both major and minor, are given the default, three-column format: Adam's words to Eve (Genesis 2:23); the cruel poem of Lamech to his wives (Genesis 4:23–24); Jacob's final blessings upon his sons (Genesis 49); the oracles of Balaam (Numbers 23–24); and even the final blessing of Moses (Deuteronomy 33).

The same three-column format is also found in the Prophets, in portions that by all other indications are poetry. In the Former Prophets the Song of Hannah (1 Samuel 2:1–10) and the Song of the Bow (2 Samuel 1:19–27) are clearly poems, but are not marked by the "brick upon brick" stichography. And inexplicably, not a single poetic text in the Latter Prophets and the Writings is so marked!

In addition, in L, the texts of the books distinguished by a separate accentuation system, Job, Proverbs and Psalms, have a two-column

format, but the text is not laid out in poetic bicolons, instead it is continuous from column one to column two—like a newspaper. But again great poetic texts in the Prophets and the Writings do not have this arrangement! In fact, these texts are written in the same three column format as narrative texts!

All of these inconsistencies in the stichography suggest that its purpose was not to indicate genre.[22]

3.2 Problems with Internal Indicators: Parallelism

Since there is no consistent external means of identifying Biblical Hebrew poetry, attempts to clarify the nature of poetry are reduced to an examination of the poetry itself. Here also there is endless debate and no consensus. There are those who say that prose and poetry do not differ in kind but rather in degree. *Wendland* [1994, p. 386] states:

> However, as in much of art, so also in literary discourse, it is not so much a matter of either-or as it is more-or-less.

Although parallelism (phonological, morphological, syntactic, the infrequent lexical, semantic, and merely formal) is the main structural feature of Biblical Hebrew poetry—in particular the poetic line—not all would agree that it rigorously distinguishes poetry from prose. *Kugel* [1981]—who calls parallelism a "seconding sequence"—argues that this feature occurs in both poetry and prose (albeit, I would argue, blatantly and almost always in the former and more subtly and rarely in the latter).[23]

The problem of a qualitative approach is clearly illustrated in *Kugel's* [1981, pp. 59–62] *tour de force* presentation of the case for "seconding sequences" occurring *outside* the traditional poetic texts. He argues that such texts as "and the LORD visited Sarah as He said. And the LORD did for Sarah as He had spoken" (Genesis 21:1), "God has made me laugh. All who hear will laugh at me" (Genesis 21:6) and "do not stretch out your hand against the boy. Do not do anything to him" (Genesis 22:12) exhibit parallelism. Who could argue? Particularly in the first and third examples the second sentence does little to advance the story line, but rather reiterates and restates what was said in the first. His

other examples, however, are not as convincing: narrative passages are artificially laid out in a bicolon structure, which he imposes on the text. After imposing this structure on the text of Exodus 2:1–7, he compares it with Psalm 106:29–34. He maintains that the structure is the same for both. But this psalm and Psalms 78 and 105 are rather unique in the Psalms: they are historical psalms with parallel narrative clauses.

Alonzo-Schökel [1966, pp. 56–57] concludes on the issue of the distinction between the two genres:

> It is no more possible to draw a clear division between the characteristics of poetic style and prose than between "poetic" vocabulary and "prosaic" vocabulary. … stylistic devices … by their frequency and their force, are a sign of poetic language. Meeting them in prose, we feel an unexpected poetic resonance.[24]

Although *Berlin* [2003, p. 2097] concurs that both are elevated discourse she also so aptly states, "… at a certain point quantitative difference becomes qualitative difference."

I will give *Kugel* [1981, p. 83] the last word. He quips about Alonzo-Schökel's remark:

> Yet one is moved to wonder precisely how much 'unexpected poetic resonance' is required before prose drifts into poetry.

Observations of qualitative differences of the texts themselves are helpful but not decisive. Merely because parallelism is attested in both genres—but all would admit—in disparate frequencies—does not imply that the frequency of occurrence of parallelism is not a statistically significant variable with respect to the two populations of poetic texts and prose texts. Nor does it obviate a careful statistical analysis of this feature if its frequency could be quantified. Such an undertaking, however, is steeped with difficulty, primarily the difficulty of distinguishing deliberate parallelism from accidental parallelism.

Since parallelism can be lexical, semantic, morphological, syntactical, phonological or even just formal, at issue is whether the author intended for his readers to notice it or not. Accidental morphological and phonological parallelism can occur because of the inflectional constraints of the Hebrew language. So, how can we know if an alleged parallelism of one of these two types is accidental or intentional? It

is too subjective. And what of lexical and semantic parallelism? With a limited repertoire of verbs of motion, speaking, cognition, and perception, should the repetition of these be construed as parallelism?

Another issue connected with parallelism is that in some cases the apparent parallelism may not be an author imposed structure at all, but rather may result from the structure of the events.[25] A case in point is the literary framework of Genesis 1:1–2:3, the bilateral structure of which stems from the events it portrays.[26] On the other hand, lexical parallelism does punctuate this account at strategic places.[27]

3.3 Problems with Internal Indicators: Other Features

Since parallelism eludes easy definition, identification and, most significantly, enumeration, we must look elsewhere for quantifiable features of the two genres, to find the essential quantum that distinguishes poetry from prose in the Hebrew Bible, or even if they are distinguishable.

Let us briefly survey, therefore, other qualitative but unquantifiable differences between the two genres, which have been adduced in the literature.

Milton [1644], in his famous dictum, in which he contrasts classic poetry to classic rhetoric, described the former, "as being less subtle and fine, but more simple, sensuous and passionate."

Muilenburg [1975, col. 671] states "the most characteristic features of Biblical poetry are action, imagery, simplicity, vigor, and concreteness."

Lichtenstein [1984] astutely discusses the linearity of prose *vis-à-vis* the non-linearity of poetry as he contrasts the prose version of the crossing of the Red Sea and the subsequent destruction of the Egyptian chariotry (Exodus 14) with the poetic version of the same (Exodus 15). His remarks serve to clarify the difference between the two genres: it is not the poet's intention to relate a complete story from beginning to end or to put events in the correct order. In fact, the Song of the Sea starts with the last event mentioned in the prose version, "Horse and rider he cast into the sea." The historical sequence of events is irrelevant.

Even the inclusion of cogent details of the story is not important. What is important, what is the key is "the creation of an indelible image" and reflection and retrospection on the same. *Lichtenstein* [1984, p. 113] talks about the "subjective reactions of the poet himself … evocative word choice [and] … well calculated juxtapositions."[28] Furthermore, he argues that these are not characteristic of prose. As cogent as his observations are, how can these differences be quantified?

Cotter [1992, pp. 6, 10–17, 34–41] discusses four rubrics in regard to how poetry differs from prose: its function is different; it uses language in a different way; it is atypically "highly organized, patterned and unified"; and it must be read differently. As to the characteristics of poetry, he adds to "enhanced unity of meaning and form" the following, which others have overlooked or at least not specifically mentioned: "violence committed on ordinary speech," "vastidity of deception" (expanded ambiguity), and "strangeness in the foreground" (multiplied atypicalities)."

Weiss [1984, p. 241] brilliantly expostulates on the unique function of poetry:

> The nature of poetry is that it does not so much *represent* the real world as *reflect* it, in the mirror of the internal and external senses; its language alone is what touches the mind and emotions. The poetic word appeals directly to the senses by a) its sound and rhythm, its conformity to its context—in short, its musicality; or b) its evocative power—its capacity to summon memories and associations which create harmony or disharmony between sound and sense [Weiss's italics].

Finally, *Wendland* [1994] offers the following list of the stylistic features of poetry: balanced lineation, condensation, figuration, intensification, transposition, phonoesthetic appeal, dramatization, lexical distinction, accentual uniqueness, and strophic structuration.[29]

My own list of the poetics (how the poetry does what it does) of Biblical Hebrew poetry comprises opacity (the sound of the words and arrangement of the words contributes to the meaning), atypical philology (phonologically, morphologically, syntactically, and lexically), extraordinary isometry, balanced lineation (parallelism), vivid metaphors, interlocutory shifts,[30] and pronounced brevity. In short,

they are highly structured semantic sculptures.[31]

But as helpful as these descriptions are, they are not easily, if at all, quantifiable.

I will conclude this all too brief survey with the oft quoted, recondite remarks of *Jacobson* [1960, p. 358] on poetry: the poetic function "projects the principle of equivalence from the axis of selection into the axis of combination." *Cotter's* [1992] abstruse explanation is: "poetry creates equivalences between items that are normally only contiguous."[32] Jacobson is referring to the placement of a second (or even third) set of equivalences (synonyms) next to the first part of a poetic line, as in the bicolon, Psalm 15:1: יְהוָה מִי־יָגוּר בְּאָהֳלֶךָ מִי־יִשְׁכֹּן בְּהַר קָדְשֶׁךָ׃ . The first colon reads, *YHWH, mî yāgûr bᵊʾohᵒleḵā* "LORD, who may sojourn in your tent?" In the second colon the poet uses the semantic equivalents, שכן *škn* "dwell (in a tent)" in place of גור *gûr* "sojourn" and הַר *har* "mountain" for אֹהֶל *ōhel* "tent." And קֹדֶשׁ *qōḏeš* "holiness" compensates for the ellipsis of *YHWH* from the second colon. The effect is that the paradigmatic is mapped onto the syntagmatic. As astute as this observation is, it is hardly quantifiable!

3.4 Observations on How Prose Differs from Poetry

Narrative differs from poetry in that it tells a story, with a plot and characters. *Scholes and Klaus* [1971, pp. 17–19], in their analysis of words and their relationship to literary forms, describe the difference:

> A story uses words to develop a view of character and situation through the report of the story-teller to the reader. Its essential quality is narration.

On the other hand, they say of poetry:

> The poem in its purest form uses words to express feelings addressed by a speaker talking or thinking to him/her -self rather than to the reader. Its essential quality is … meditation.

In their analysis they make "plots and characters" the *y*-axis and "poetic" the *x*-axis and place them in opposing quadrants: story (narration) in the II quadrant and poem (meditation) in the IV quadrant.

Narratives in general are characterized by an attention to setting, plot, characterization and point of view.[33] Biblical Hebrew narratives (contra

Biblical Hebrew poetry) exhibit four elements: a narrator (point of view), characters, plot and setting; thus, supporting the above distinctions made by *Scholes and Klaus* [1971]. The narrator, his characters, the plot and time and space are interrelated. *Fokkelman* [1999] discusses all four.[34]

Narratives have a narrator, who usually writes in the third person (the first person sections of Jeremiah, Daniel, and Nehemiah are exceptions). The narrator is omniscient, able to tell us of details about the moment of the creation of the universe (Genesis 1:1); to tell us the thoughts of his characters; and even to tell us if his characters are speaking the truth. He is selective and presents his story with great skill. For the most part he is quite laconic in his presentation: he rarely includes unnecessary details.

Also according to *Fokkelman* [1999], every Biblical narrative has a "hero." He defines a "hero" as the subject of a quest, which he undertakes "in order to solve or cancel the problem or deficit presented at the outset" of the story. But there are different kinds of "heroes." Some heroes are more heroic than others—like Joshua, Caleb, and David (before his sin with Bathsheba). Some are more goat than hero—can we really call Samson a hero? And some, so-called heroes, are scoundrels—or at least—not very admirable. Abraham was decidedly un-heroic when he passed off his wife as his sister in order to save himself. In pursuit of the patriarchal blessing, Jacob stooped to deceiving his own father, Isaac. Even though Rebecca, Isaac's wife and Jacob's mother suggested, assisted and enabled the prevarication, we cannot exonerate Jacob, who followed through with the charade. And what of Joseph? At what point in his story is he clearly unambiguously admirable? These caveats notwithstanding, we can identify the main character in a Biblical narrative.

The third element is plot. Plot is arguably the most important: inclusions of details are driven by the plot.[35] The reader is drawn to the action. The characters encounter a situation that involves some kind of suspense building to a climax and then to a final resolution.[36] And the action unfolds in an evolving setting, the fourth element. The "hero" and his supporting cast march through time and space. The sequence

of events is important. Sometimes the characters march in place. Time speeds up, slows, stops or even goes backwards—but only for a short time. Shortly, the inexorable sequence resumes. Time is linear in narrative. Not so in poetry.

4. Statistical Study: Exploratory Phase

The discussion above shows that characteristic features of poetry are also found in narrative. The converse is also true: characteristic features of narrative are also present in poetry. We conclude that qualitative descriptions of poetry and prose—although helpful in identifying their genre—do not rigorously distinguish them. We turn instead therefore to examine countable features of texts, which admit a statistical analysis.

As argued above, parallelism is not easily quantifiable, and, therefore, this most prevalent linguistic feature of Biblical Hebrew poetry cannot be used to distinguish prose from poetry. But Biblical Hebrew has other linguistic features, which are easily counted, measurable characteristics, such as morphological distribution, word order, and clause length.[37]

4.1 The Distribution of Finite Verbs in Biblical Hebrew

Although it would be ideal to look at all of these features, morphological distribution was the easiest to determine and, what is more, preliminary tests indicated that prose and poetry evince strikingly different distributions with respect to this countable feature. The specific morphological distribution chosen was the distribution of finite verbs, verbs inflected for person (1st—I, we; 2nd—you; 3rd—he, she, they) as well as gender (masculine and feminine) and number (singular and plural).[38]

The distribution of finite verbs should be ideal for ascertaining if a text is a narrative. Since narratives are characterized by an attention to setting, plot, characterization, and point of view (narrator)—with plot as arguably the most important—we need to find a countable linguistic feature, which reflects the action of characters unfolding in time.

Finite verbs carry the main action. The other verb forms in Biblical

Hebrew do not. Infinitive constructs provide the setting, often marking a circumstantial clause. Volitives (jussives, imperatives, and cohortatives) indicate what one individual wants the action of himself (singular cohortative) or others (jussive, imperative, and plural cohortative) to be, but it is not that action. Infinitive absolutes modify finite verbs. Participles are used attributively, substantively, or predicatively (as verbs). When they are used this last way they do not indicate the main action.

There are four finite verb forms in Biblical Hebrew (see Glossary, p. 725): the preterite *(wayyiqtol)*, the imperfect *(yiqtol)*, the perfect *(qatal)* and the waw-perfect *(wᵊqatal)*. Rarely, the preterite occurs without the initial waw patach (or qamets) before the prefix (such as in the last two verbs of Psalm 8:6) and, therefore, could be misconstrued as an imperfect, but for the most part it is a sequential past tense.[39] Of all finite verbs the distribution of preterites within the finite verbs should most clearly mark whether a passage is tracking events through time.

The imperfect can be a present/future, general present or modal when the action is ongoing or anticipated or it can express habitual action when the action is in the past.

Preterites with prefixed waw-consecutives must come first in a sentence. If another syntactic element is fronted (it comes first in the sentence instead of the verb to indicate a contrast), the verb cannot be a preterite, but will usually be a perfect. The perfect is normally a non-sequential past tense, although word order constraints demand that it be used in a sequential sense if an explicit subject precedes what would otherwise be a preterite.

The waw-perfect is perforce clause initial and is used to express habitual action in the past and sequential action in the future. It continues the force of the verbs that precede it. It is often found in procedural literature, such as the instructions for assembling the tabernacle (Exodus 25–31).

4.2 Statistical Study: Two Questions

The statistical portion of this study asks two pertinent questions.

The *first* question is: is the finite verb distribution identical across genres (poetry versus narrative)? And the *second* is: if it is not, can the distribution in a given text be used to determine its genre?

To test the feasibility of the study, fourteen texts of each type—narrative and poetry—were analyzed. No statistically valid conclusions could be drawn from this part of the study, because the texts were selected rather than from a random sample.

4.2.1 Texts Selected

Texts acknowledged to be either narratives or poems were chosen. The narrative texts included in the analysis were: the Joseph Story (Genesis 37–50), Joshua's conquest of the Promised Land (Joshua 5–8), the Samson pericopes (Judges 13–16), the Ark narrative (1 Samuel 5:1–7:1), the Books of Ruth, Esther, and Nehemiah, the Court History of David (2 Samuel 11–20), the Ministry of Elijah (1 Kings 17–19), Hezekiah and Sennacherib, Jehoiakim burning the scroll of Jeremiah (Jeremiah 36), the Fall of Jerusalem (2 Kings 25), and the entire books of Kings and Chronicles.

For the poetic texts both old Hebrew poetry [Jacob blessing his sons (Genesis 49), the Song of the Sea (Exodus 15), the Oracles of Balaam (Numbers 23—24), the Song of Moses (Deuteronomy 32), the Jael Poem (Judges 5), the Prayer of Hannah (1 Samuel 2:1–10), and the dialogues and monologues of Job], and later Hebrew poetry [David's Song (2 Samuel 22), the prayer of Jonah (Jonah 2:2–10), Isaiah 1—35, Minor Prophets, Psalms, Proverbs, and Lamentations] were included in the sample tested.

4.2.2 Methodology

The Westminster Theological Morphological database in *BibleWorks 5.0* was used to determine the finite verb counts (FV) for each text[40] and then the following were computed: preterites/FV, imperfects/FV, perfects/FV, imperfects/(preterites+imperfects), and preterites/(preterites+imperfects).

4.2.3 Meritorious Results

Reported in this section are the results of the exploratory phase, which proved the merit of pursuing the confirmatory analysis upon a random sample of texts but were not reproduced in that portion of the study,

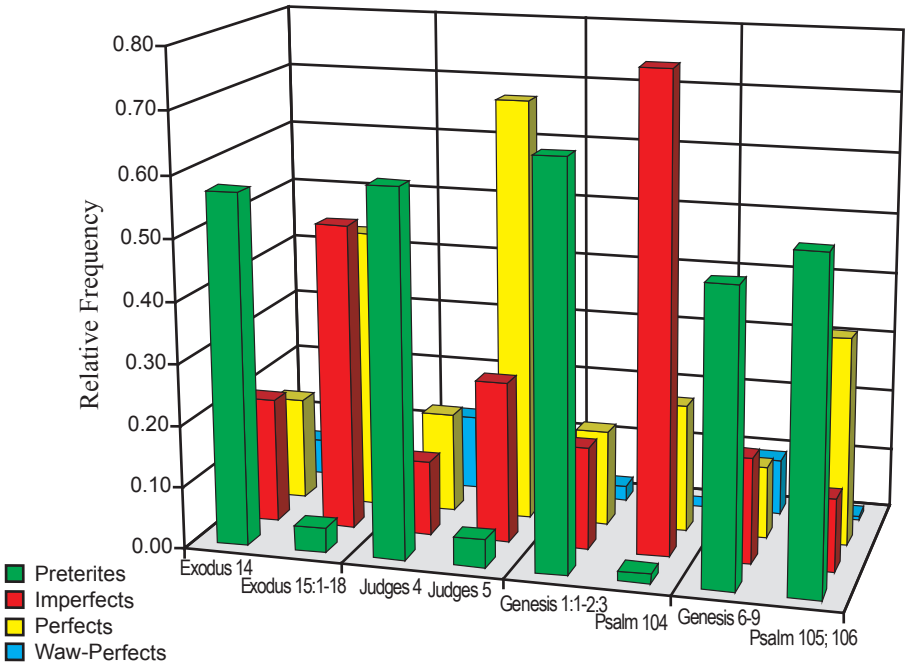

Figure 2. 3-D plot of paired-texts data, showing contrasting finite verb distribution for narrative and poetic versions of the same event.

and in addition, were significant in their own right: paired-texts data plotted in 3-D bar graphs (Figure 2) and cluster analysis (Figure 3). The rest of the results of the exploratory phase can be found in Appendix A: the relative frequency of finite verbs for each genre (displayed in contrasting 3-D bar graphs), scatter plots of relative frequencies of finite verb types, and two kinds of inferential modeling.

The 3-D bar graph of the paired-texts data plot (Figure 2) contrasts the distributions of finite verbs for narrative and poetic versions of the same event. The following texts were contrasted: Exodus 14 (the narrative account of the crossing of the Red Sea) with Exodus 15:1–19 (the poetic version of the same event, "The Song of the Sea"); Judges 4 (the narrative account of Barak and Deborah defeating Jabin the king of the Canaanites and his general Sisera by divine intervention at the Kishon and Jael's subsequent killing of the

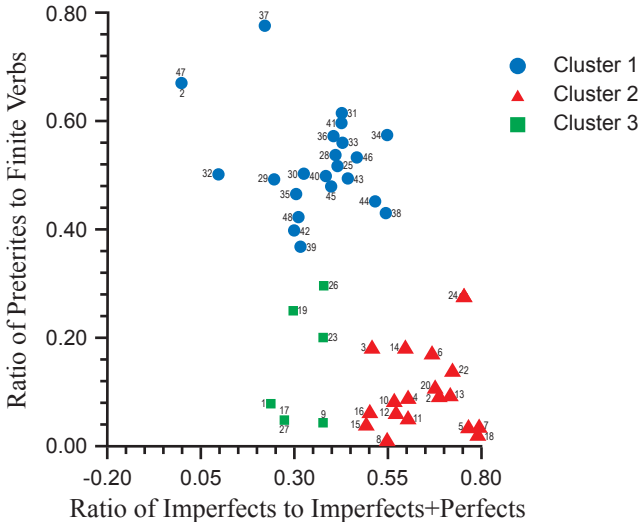

Figure 3. Cluster analysis plot.

cowardly Sisera) with Judges 5 (called "the Song of Deborah," which is the poetic version of the account, which focuses on what Jael did and the frustrated expectations of Sisera's mother). For the sake of comparison the distributions of Genesis 1:1–2:3, Psalm 104 (a poetic account of Creation), Genesis 6–9 (the Flood account), and two historical psalms, Psalms 105 and 106, were plotted on the same graph. Again green dominates in historical narrative; red and yellow in poetry. For these texts therefore narrative has a larger relative number of preterites than poetry.

Because each text in a pair portrays the same event, only a few differences can account for the disparate finite verb distributions: different authors, different times of composition, and different genres. The confirmatory phase of the present study will show that genre was the decisive factor.

To ascertain if there were groupings in the data a cluster analysis was performed on the selected texts.[41] The variables used in clustering were the ratio of preterites to finite verbs, and the ratio of imperfects to imperfects plus perfects. Significantly, the software grouped the data in clusters corresponding to the genre even though the actual classification

(narrative or poetry) was not used in this analysis.

As the plot in Figure 3 shows, three groups were found. Cluster 1, which is in the upper half of the plot (the solid blue circles), corresponds with the narrative sections. The intriguing part is that the part of the graph corresponding to the poetry sections is broken into two clusters, clusters 2 and 3, one with lower values of imperfects/(imperfects+perfects) and one with higher values. Only one narrative section was not put in cluster 1. However, the Genesis 1:1–2:3 section was placed with cluster 1.

4.2.4 Exploratory Phase: Preliminary Conclusions and Caveats

The results, which are described in Section 4.2.3 and Appendix A, showed that finite verb distribution varies so much with genre that it could likely serve to distinguish genre. In particular, the ratio of preterites to finite verbs would best classify texts as narrative or poetry.

But to be statistically valid our study must examine either the entire population or a random sample of that population. Moreover, we do not know how *rigorously* this ratio distinguishes genre. We turn, therefore, to discuss the confirmatory phase of the study.

5. Statistical Study: Confirmatory Phase

This was the heart of the statistical part of the study. And for this reason the following procedures and results (some in brief; others in great detail) are covered in this section: the identification of the two populations, statement of the null hypothesis tested and the alternative hypothesis, acquisition of the random sample, visualization of the data, the theory of logistic regression, description of inferential models, classification of texts by the chosen model, statistical analysis of the classification accuracy of our model, and the logistic curve results.

5.1 Identifying Each Population

It was necessary to identify the complete population of each genre, but not to analyze all these texts. A random sample from each population

ensured the statistical validity of the study.[42] Also to guarantee statistical validity a necessary condition for the inclusion of a text was that the finite verb count not be too low. Thirty was the lower limit for the study. Consequently, short contiguous narratives were grouped together and psalms were grouped by author (if indicated in the superscription), type, collections, and so forth. Another thing avoided was widely divergent text sizes. Long texts, therefore, were subdivided into smaller units.

How can Biblical Hebrew narratives be identified? In addition to what was said in Section 3.4 above, Biblical Hebrew narratives—just as narratives in any other literature—tell a story, with a setting, the time and place in which the events of the story unfold; character(s), the person or persons who do and say things in the story or have things done or said to them; and the plot. Plot involves two movements. The first is a movement from a situation in which the characters are in equilibrium with one another to one where the characters are no longer in equilibrium. They encounter a situation that places them in danger or introduces an unrealized expectation. This last situation is unstable and demands resolution. This resolution is the second movement: the characters move to a new equilibrium. Linguistically, narratives are characterized by lexical transparency, normal syntax, and literal language.

Biblical Hebrew poetry also is not difficult to identify. First of all (as discussed in Section 3.1 above), in the oldest complete manuscript of the Hebrew Bible, the Leningrad Codex B19a, a few texts are laid out as verse: the Song of the Sea, the Balaam Oracles, the Song and Blessing of Moses, the Song of Deborah, the Song of David (2 Samuel 22), the Final Words of David (2 Samuel 23) and Psalms 119 and 136. Second, poetry has a different poetics from narrative [see Sections 3.2 and 3.3 above]. Third, poetry differs from narrative in its intended effects. The Biblical poet wants his readers to see, hear, smell, feel, and taste what he is experiencing. He is seeking to evoke his readers' emotions and experiences. He does this by creating vivid unforgettable images, which resonate with his readers.

By applying the criteria discussed above the two populations were identified—295 narrative texts and 227 poetic texts.

5.2 The Null Hypothesis

To determine the inferential potential of the ratio of preterites to finite verbs the null hypothesis H_0 and the alternative H_1 were put forth as follows:

> ***H_0**: All logistic regression classification models, in which the relative frequency of preterites is the only independent variable, classify texts according to genre no better than random classification.*

This is tested against the alternative hypothesis:

> ***H_1**: There is a classification model that classifies texts by genre better than random classification.*

5.3 The Random Sample

In order to ensure that texts from all periods and from all three parts of the Hebrew Bible (Torah, Prophets, and Writings) were included in the analysis, a stratified random sample was generated. Also, this sample included extra texts to replace any primary texts rejected for violating any of the conditions stated above.

The breakdown of the narrative text in the sample is: Torah (15 out of 87, 2 extra); Former Prophets (21 out of 138, 3 extra); Latter Prophets (2 out of 11, 2 extra); and Writings (10 out of 59, 2 extra). The breakdown of the poetic texts in the sample is: Torah (3 out of 13, 2 extra); Former Prophets (3 out of 12, 2 extra); Latter Prophets (23 out of 104, 3 extra); and Writings (22 out of 98, 3 extra).

5.4 Visualizing the Data

Again *BibleWorks 5.0* was used to count the verbs for each text. The data is tabulated in Appendix B in Tables B1–B8.

3-D bar graphs and scatter plots visually present the data. 3-D bar graphs display the relative frequency of finite verbs. For the 3-D bar graphs (Figures 4–5) the colors for the relative frequencies of preterites, imperfects, perfects and waw-perfects are green, red, yellow, and blue, respectively (going back into the page on the *y*-axes). The passages

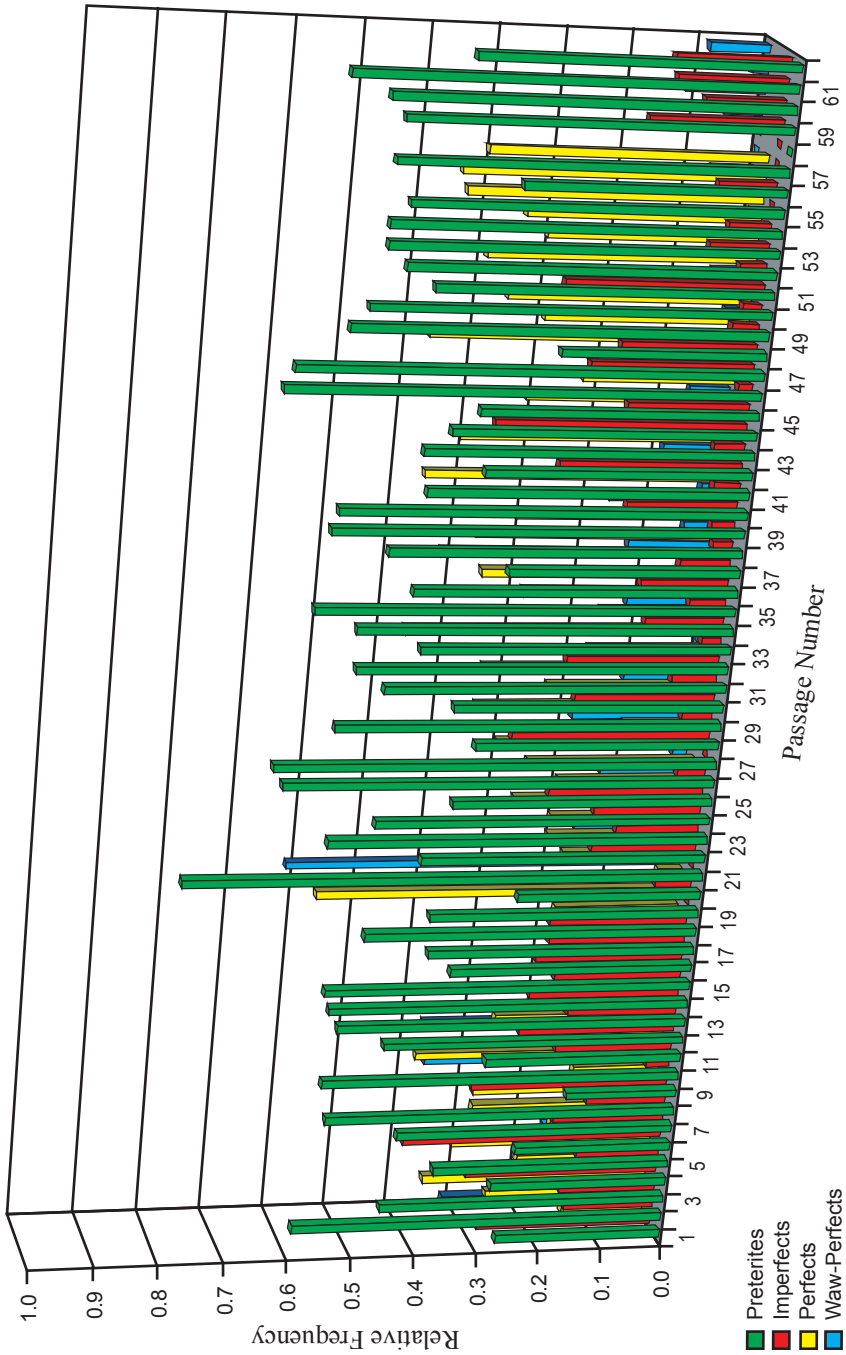
Relative Frequency
1.0
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0.0
Passage Number
1 3 5 7 9 11 13 15 17 19 21 23 25 27 29 31 33 35 37 39 41 43 45 47 49 51 53 55 57 59 61
Preterites
Imperfects
Perfects
Waw-Perfects

Figure 4 (left). 3-D bar graph of finite verb distribution in narrative. The Biblical passages that are represented by the numbers on the *x*-axis are found in Tables B1–B4 in Appendix B.

tested are numbered along the *x*-axes and the relative frequencies of each finite verb are plotted on the *z*-axes. As can be seen in Figure 4, the dominant color for narrative texts is green, which corresponds to a dominance of preterites; whereas the prominent colors for poetic texts (Figure 5) are red and yellow, which corresponds to a dominance of imperfects and perfects.

These graphs show that the finite verb distribution of narrative texts drastically differs from that of poetic texts. But this difference must be quantified. Scatter plots helped do this. Not only do they provide an additional way of visualizing the data, but they validated the track we followed in our analysis.

In both scatter plots (Figures 6 and 7) the relative frequency of preterites for each passage is plotted on the *x*-axis, but the variables plotted on the *y*-axes differ. In Figure 6 the *y*-coordinate is the relative frequency of imperfects for each passage; whereas in Figure 7 the *y*-coordinate is the relative frequency of perfects. For both plots, poetic passages are indicated by red squares and narratives by green diamonds. Also the paired-texts data, which is presented as a 3-D bar graph in Figure 2, is plotted in Figures 6 and 7.

These plots show that finite verb distribution clusters texts by genre. In addition, the paired-texts data are correctly grouped.

Each scatter plot (Figures 6 and 7) also shows that the separation of the sample clusters is greatest along the *x*-axis, which is the ratio of preterites to finite verbs for each Biblical passage. This confirmed the impression garnered during the exploratory phase, that this ratio was the most significant for our study, and prompted the question: is the median of the distribution of relative frequency of preterites for narrative the same as that for poetry?

In an effort to answer this question and to provide a graphic display of the results, the narrative texts and poetic texts from the samples were plotted side by side (Figure 8) with the passages on the *x*-axis and the relative frequency of preterites for each passage on the *y*-axis.

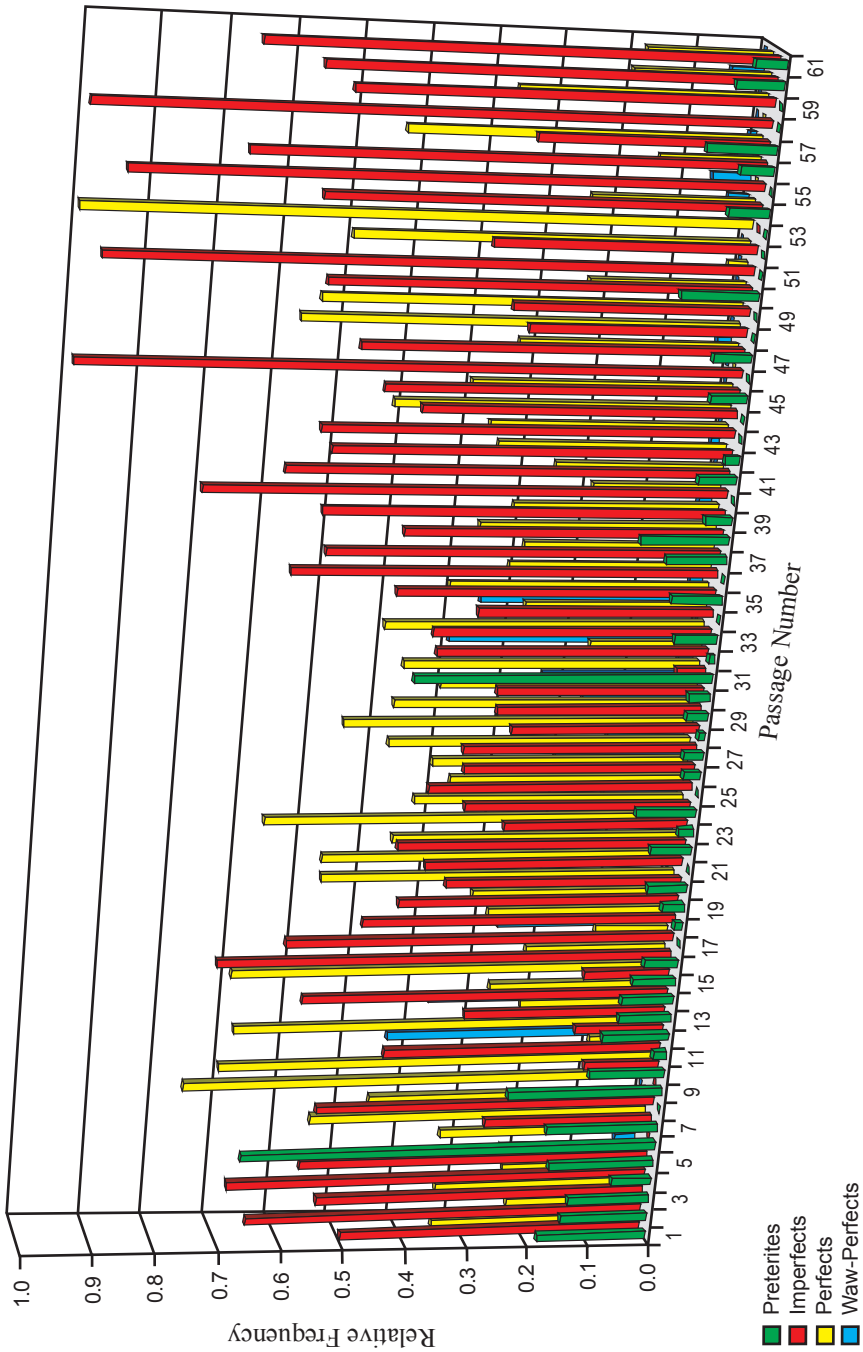
Relative Frequency
1.0
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0.0
1 3 5 7 9 11 13 15 17 19 21 23 25 27 29 31 33 35 37 39 41 43 45 47 49 51 53 55 57 59 61
Passage Number
Preterites
Imperfects
Perfects
Waw-Perfects

Figure 5 (left). 3-D bar graph of finite verb distribution in poetry. The Biblical passages that are represented by the numbers on the *x*-axis are found in Tables B5–B8 in Appendix B.

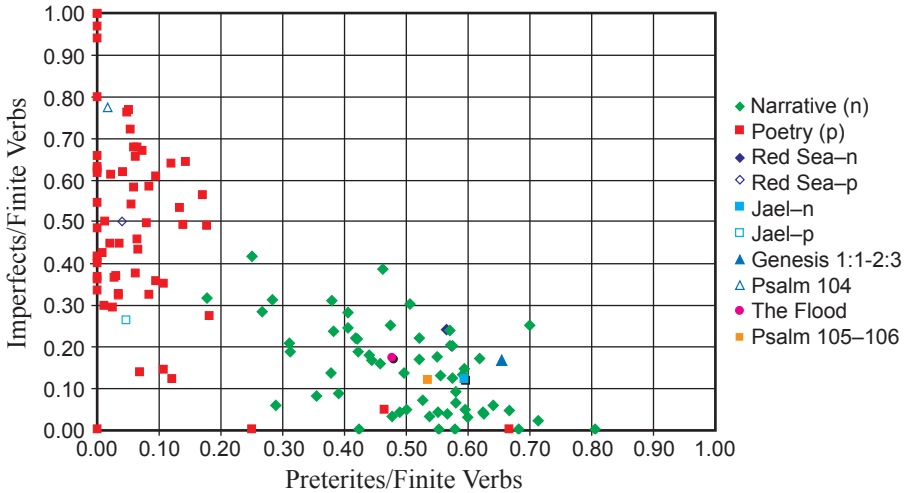

Figure 6. Scatter plot showing the ratio of preterites to finite verbs on the *x*-axis and the ratio of imperfects to finite verbs on the *y*-axis.

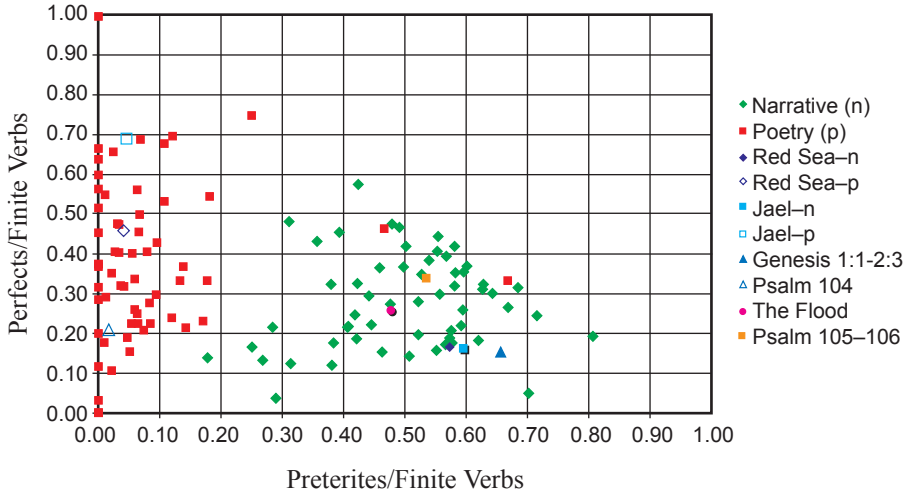

Figure 7. Scatter plot showing the ratio of preterites to finite verbs on the *x*-axis and the ratio of perfects to finite verbs on the *y*-axis.

As in Figures 6 and 7, green diamonds represent the narrative passages; red squares—poetry, and—for the sake of comparison—the solid blue triangle represents Genesis 1:1–2:3. In addition, the blue horizontal line through each sample is the median for that sample.

Looking at Figure 8, the above question, "is the median of the distribution of relative frequency of preterites for narrative the same as that for poetry?" is easily answered. It is quite obvious that the medians differ dramatically.

The data presented in the bar graphs (Figures 4 and 5), finite verbs scatter plots (Figures 6 and 7), side-by-side preterite distribution plot (Figure 8), and histograms (not shown) indicated that narrative and poetry have distinctly different finite verb distributions—in particular, the relative frequency of preterites. In fact, this difference was so stark, that it appeared that the proper inferential model could exploit it, in order to classify texts of unknown genre.

Moreover, the exploratory phase of the study showed us that logistic regression would be the best way to model the data to use it to categorize texts[43]—Genesis 1:1–2:3 in particular.

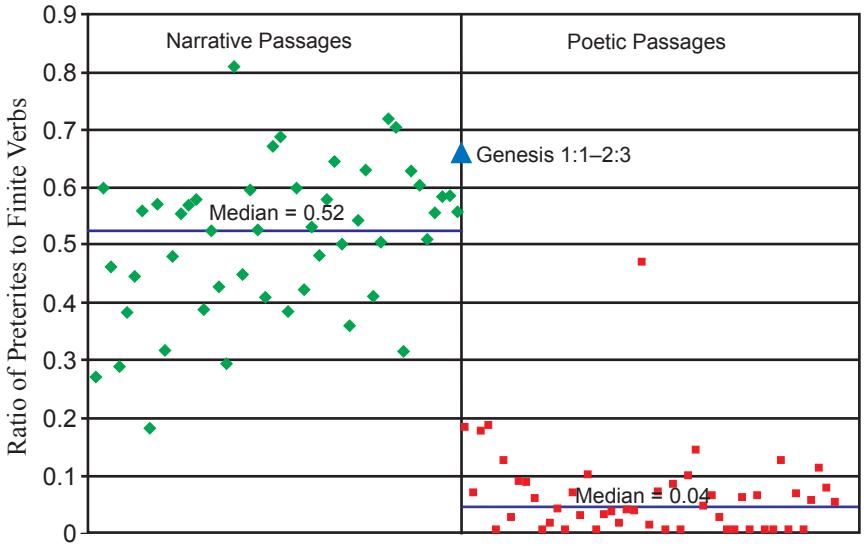

Figure 8. Side-by-side plot of the distribution of the relative frequency of preterites in narrative *vis-à-vis* poetry.

5.5 Inferential Study: Logistic Regression Modeling

5.5.1 Theory

In general, logistic regression is used when there are only two possibilities for the dependent variable, but the independent variable(s) is (are) multivalued.[44] Moreover, it is common to assign two possible values to this dummy dependent variable: either 0 or 1.

Although logistic regression does not have as many stringent conditions as ordinary least squares regression, it has a few: linearity of the log of the odds, non-additivity, non-multicollinearity, and sampling adequacy.[45] (See Section 5.5.2 for the relevance of these to our study.)

There are three types of logistic models. We were interested in the classification type of model, which can be used to categorize data into two populations according to the values of the independent variable(s) for the data.[46]

In logistic regression a linear model of the logarithm of the odds ($P/(1\text{-}P)$) is produced in terms of certain independent variables so that

$$\log (P/(1\text{-}P)) = A + \sum B_i X_i \tag{1}$$

where P is the probability of the dummy being 1, the X_is are independent variables, and the intercept A and the coefficients B_i are derived by the maximum log-likelihood estimation (MLE) method from the actual dichotomous data.[47]

We then use the right hand side of equation (1) to predict values of P outside the sample.

Logistic regression has a way of measuring the goodness of fit of a model, the substantive significance of a model, the classification accuracy of a model, and the statistical significance of this accuracy level as follows.

• **Goodness of fit.** The "model chi-square" statistic is a measure of how well a model fits the data. The "model chi-square" statistic, G_M, which is defined as $-2[\mathrm{LL}(A) - \mathrm{LL}(A, B_1, B_2, \ldots B_k)]$, where k is the number of independent variables represented by a model, is computed to test the null hypothesis that a model does not fit the data any better than the

model with all B_is = 0 and LL(…) is the log likelihood function. This statistic follows a chi-square distribution with k degrees of freedom. A good model will be significant at the .05 level or better.[48]

• **Substantive significance of the model.** The pseudo-R^2 statistic is a measure of the substantive significance of a logistic regression model. That is, how much does the model reduce the variation from that in the zero coefficients model? A preferred pseudo-R^2 statistic is R_L^2, which is defined as G_M/D_0, where D_0 is the zero coefficients model, LL(A), R_L^2 ranges from 0 for a poor model to 1 for a perfect model.[49]

• **Classification accuracy.** The issue at stake for a classification model—and therefore the most important for us—is how well does the model classify texts from observed categories into those categories? The classification accuracy is usually presented in the form of a 2 × 2 table, which shows the actual number of texts in each category versus the number classified by the model.

Building on *Menard* [2002, pp. 28–40], if we define a statistic τ_P as *the proportional change in the number of errors for a classification model like ours*, then

$$\tau_P = (E_0 - E_m)/E_0 \tag{2}$$

where E_0 is the expected number of errors without the model, and E_m is the number of errors with the model.

Menard [2002, pp. 28–40] argues that τ_P is the best option for analyzing classification accuracy. Since τ_P measures how much the model reduces error, it is a measure of substantive significance.[50] If τ_P is positive, the model classifies texts better than a "chance" classification. On the other hand, if the ratio is negative, the model is a poorer classifier.

• **Statistical significance of classification accuracy.** To determine the statistical significance of a model as a classifier (the statistical significance of τ_P), we can employ the binomial statistic

$$d = \left(P_0 - P_m\right) / \sqrt{P_0\left(1 - P_0\right)N} \tag{3}$$

where N is the total sampling and P_0 and P_m are the proportion misclassified ($P_0 = E_0/N$, $P_m = E_m/N$), to test the null hypothesis that the proportion incorrectly classified by a model is no lower than the proportion that would be incorrectly classified by chance classification [*Menard,* 2002, p. 34].

5.5.2 Descriptions of Models

We used logistic regression to categorize texts as narrative or poetry based on the finite verb distribution in each text. A model's goodness of fit to the data (borrowing the term of *Menard* [2002]) and exactness in classifying texts of known genre will determine how accurately it can identify the genre of texts of unknown genre. The results will be in the form of a probability (P) that a given text is a narrative.

Brief mention is made below of the model's goodness of fit, but a model's exactness in classifying texts is the focus of our study and therefore two complete sections below (Sections 5.5.3 and 5.5.4) are devoted to it. First, however, we will look at the models tested.

In our study the dependent, dummy variable was *NARRATIVE*, which can have only two possible values: 1 if it is a narrative; 0 if it is not. In other words, there were only two possibilities in the texts analyzed, narratives and non-narratives (poetry). The independent variables, the X_is represented the ratios among the finite verbs for each text. The model might consider only one ratio, for example, preterites to finite verbs, or preterites to preterites plus imperfects, or imperfects to imperfects plus perfects, and so forth. Or the model might consider a combination of ratios.

For the sake of completeness, three different models were considered, each represented by a different ratio:

- X_1 = preterites/total finite verbs
- X_2 = preterites/(preterites + imperfects)
- X_3 = perfects/(imperfects + perfects)

These ratios were considered alone and together in a logistic regression that estimates the probability that a passage is a narrative given the values of X_1, X_2, and X_3 for the 97 narrative and poetry passages with known genres.

Of all the models considered, X_2 had the highest statistical significance

for a one variable model, but misclassified three passages. On the other hand, the model using X_1—although it had a slightly lower statistical significance than the X_2 model—only misclassified two passages.

Because our purpose was to determine the classification accuracy of the model, we chose the model that had the lowest number of misclassifications: the model using X_1, the relative frequency of preterites. The fact that this model had the fewest misclassifications confirmed our analysis up to this point: the ratio of preterites to finite verbs—as Figures 4–8 indicate—varied the most with genre. It also had the advantage of being a simpler model than a two or three independent variable model; reducing, thereby, the chances of overfitting (explaining noise instead of signal) and eliminating any possibility of additivity or multicollinearity in the independent variables. Finally, it made the most sense in light of Hebrew grammar.

The detailed output of the statistics program NCSS can be found in Tables C1 and C2 in Appendix C. A summary is presented here.

For Model 1—the model with one independent variable X_1 (hereafter model 1 will be referred to as "our model" and X_1 will be referred as X)—the statistics generated take into consideration the number of finite verbs in each passage. This weighting effectively gave less influence to the smaller passages in estimating the logistic regression curves.

Because our model has only one independent variable, X, the log likelihood equation has only the intercept, A, and one coefficient, B.

The description of our model is as follows: the intercept, $A = -5.6562$; $B = 24.7276$. Thus our model for predicting P is

$$\log (P/(1-P)) = -5.6562 + 24.7276\, X \tag{4}$$

where X is the relative frequency of preterites. Note that because our model has only one independent variable the right hand side of this equation is a simple straight line, $y = mx + b$.

Our primary concern in this study was: how good a classifier is our model? Consequently, goodness of fit was an ancillary issue, but the interested reader can find the calculations in Appendix C, Section C2.

5.5.3 Classification of Texts

The "Percent Correct Predictions" which is a widely accepted measure of the overall performance of the model. Classification of the texts using the model was done by the usual procedure: if the predicted probability (P) is greater than or equal to 0.5, then *NARRATIVE* equals 1; if P is less than 0.5, *NARRATIVE* equals zero.

The probability that a text with a given ratio of preterites to finite verbs is a narrative is its logistic score. Solving for P in equation (4), we obtain the following:

$$P = 1/(1+e^{(5.6562 - 24.7276X)}) \tag{5}$$

where X is the ratio of preterites to finite verbs for each text and e is 2.7183, the base of the natural logarithm.

The plot of all of these Ps is the logistic regression curve (in blue) seen in Figure 9. The poetry texts are depicted by solid red squares (as in the scatter plots in Figures 6–8) and the narrative texts are solid green diamonds (same as scatter plots in Figures 6–8). And for the sake of comparison, the score of Genesis 1:1–2:3 is plotted as well.

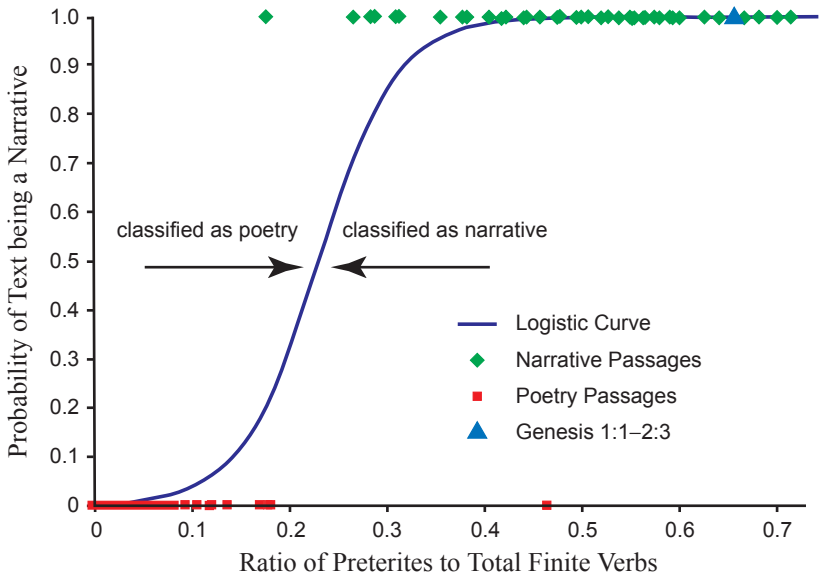

Figure 9. Logistic regression curve showing the probability a passage is a narrative based on the ratio of preterites to finite verbs.

Classification was done in the following way. For our model, $P=0.5$ corresponds to $X=0.2287$. Thus, if $X<0.2287$, then the text is classified as poetry; if $X>0.2287$, then it is classified as narrative. The labeled arrows in Figure 9 depict this classification convention. The results of this classification procedure are in Table 1.

Table 1. Classification table (by passage).

Actual Genre	Classified by Model		Total
	Poetry	Narrative	
Poetry	48	1	49
Narrative	1	47	48
Total	49	48	97

Table 1 depicts in color how accurately our model identified the genre of texts of known genre. Wherever the color at the top of a column matches the row color, the model correctly classified the text. Wherever the color does not match, the model incorrectly classified the texts. The percent correctly classified, therefore, was 97.94.

Of the 97 sample narrative and poetry passages, only two were misclassified: Ezekiel 19 was classified as narrative and Exodus 33 was classified as poetry. These misclassifications inform us about the quality of our model and about the nature of Biblical Hebrew narrative. Our model caught an incorrect analysis of Ezekiel 19 but was tripped up by Exodus 33, a narrative that largely recounts habitual action.

On the one hand, our model misclassified Ezekiel 19, because it was incorrectly included in the poetry population from which the random sample was drawn. Ezekiel 19 was assigned to the poetry population, because it has an elaborate, extended metaphor: two of the last four kings of Judah are portrayed as lions. Jehoahaz (third son of Josiah) and Jehoiachin (grandson of Josiah), whom Neco II of Egypt and Nebuchadnezzar II of Babylon deposed, deported to Egypt and Babylon respectively, and replaced with puppet kings, are pictured as lion cubs, reared by a lioness (Judah). They became young lions. They learned to hunt and became man-eaters. The nations heard about them, trapped

them in pits, and brought them to Egypt and Babylon by hooks.

This is highly symbolic language. Most of the specifics of the text did not happen: kings are not lions, no lioness reared them, and they were not caught in a pit. But, they were taken off by hooks into captivity to Egypt and Babylon.

The identification of kings and kingdoms with animals (or trees) reminds us of portions of Daniel, Zechariah, other passages in Ezekiel and even the vine imagery in Isaiah 5:1–7. Ezekiel 19 therefore belongs to neither genre tested: it is neither historical narrative nor poetry but rather, apocalyptic.

On the other hand, our model misclassified Exodus 33, because of the finite verb distribution in this text: there are more waw-perfects (29) than preterites (14). Statistical analysis suggests a high negative correlation between the number of waw-perfects and preterites in narrative texts. The statistical analysis of this correlation is determined by the Pierson r correlation test, which yields a value of –0.71 with $p < 0.0001$. This is to be expected, since the former is found mostly in future sequential usage and the latter in past sequential usage. (See Appendix C, Section C3 for details of the correlation analysis.)

But the reason for the dominance of waw-perfect in this text is that the waw-perfect also can indicate habitual action in the past—and both of these uses are manifested in this text. The text opens with three future uses of the form: "I will send," "I will drive out" and, the threat, "If for a moment I would go up (construed by a modalistic imperfect) in your midst, I would consume you." This is followed by fourteen habitual usages (verses 7–11), telling the reader how Moses would customarily talk with YHWH at the tent of meeting and what the people customarily did. The passage concludes with twelve sequential future uses of the form, in which YHWH communicated to Moses His intentions and what Moses should do.

5.5.4 Statistical Analysis of Classification Accuracy

In order to determine how accurately our model classifies texts we need to compare it with a random model that classifies texts by genre, which is subject to the constraint that the number of texts classified as narrative is the same as the number of narrative texts and similarly with

poetry.

With this constraint in mind, let us define $p_{narrative}$ as the "chance" probability of classifying a passage as narrative, p_{poetry} as the "chance" probability of classifying a passage as poetry, $n_{narrative}$ as the number of narrative texts in the sample, n_{poetry} as the number of poetic texts in the sample, and n_{total} is the total number of texts in the sample. Then

$$p_{narrative} = n_{narrative}/(n_{narrative} + n_{poetry}) \tag{6a}$$

and

$$p_{poetry} = n_{poetry}/(n_{narrative} + n_{poetry}) \tag{6b}$$

The expected number of errors without the model (E_0) is the expected errors for a "chance" classification model, which is the number of poetry texts misclassified as narrative plus the number of narrative texts misclassified as poetry.[51] Thus

$$E_0 = n_{poetry} p_{narrative} + n_{narrative} p_{poetry} \tag{7}$$

This easily simplifies to

$$E_0 = 2n_{narrative} n_{poetry}/(n_{narrative} + n_{poetry}) \tag{8}$$

Computing this for our sample we get

$$E_0 = 48.4948 \tag{9}$$

This value will be the same for all samples with 48 narrative texts and 49 poetic texts.

We will use the "binomial statistic" d [equation (3)] to test the null hypothesis H_0.

Let S be the set of all random samples with 48 narrative and 49 poetry texts, which can be taken from the two populations of 295 narrative and 227 poetic texts. Now apply our model to each of these samples and

compute d for each of these.

We can write equation (3) in terms of expected errors as follows:

$$d = \left(E_0 - E_m\right) / E_0 \sqrt{\left(N - E_0\right) / NE_0} \tag{10}$$

Since the expected errors depends only on the number of narrative texts and poetic texts in the sample, which is the same for all samples, d for each sample will vary only with the number of classification errors made by our model when it is applied to a sample.

The set of all these ds will approximate a normal distribution with mean 0 and standard deviation 1.

Based on equation (10), if H_0 is true, the number of classification errors of our model must equal or exceed the number of classification errors of the random model. Or in other words, the average of all the ds must be ≤ 0.

But using equation (10) to compute d for our sample, we get

$$d = 9.4421 \tag{11}$$

This is more than nine standard deviations above the expected mean if H_0 is true. The probability of randomly selecting a sample from our joint population of narrative and poetry texts with a standard deviation this far from the expected mean is <0.0001. We reject therefore the null hypothesis H_0 and at the same time accept the alternative hypothesis H_1. Our model therefore classifies texts better than a "chance" model ($p < 0.0001$). But we want to know how much better.

Recall that τ_P (the proportional change in the number of errors for a classification model like ours) is

$$\tau_P = (E_0 - E_m)/E_0 \tag{12}$$

where E_m is the number of errors using our model.

In our case $\tau_P = (48.4948 - 2)/48.4948 = 0.9588$. This means that for the texts in our sample, our model reduces classification error by almost 96%. We must now estimate our model's classification accuracy for the

entire population of 522 texts.

To extend the results for one random sample (comprised of 48 narrative texts taken from the population of all narrative texts and 49 poetic texts taken from the population of all poetic texts) to the entire joint population, we will determine a 95% confidence interval for the average τ_P for all the samples in population S. Let T denote the set of all these possible τ_Ps.

As with the ds, the expected number of errors depends only on the number of narrative texts and poetic texts in the sample, which is the same for all samples. Consequently—as with the ds—τ_P for each sample will vary only with the number of classification errors made by our model when it is applied to a sample.

Since τ_P is a measure of the proportional change in the number of errors obtained by using our model, μ_T (the mean of all the possible τ_Ps) will be a measure of how accurately on the average our model classifies texts. For our sample we computed τ_P as 0.9588.

When we solve for τ_P in terms of d we get

$$\tau_P = d\sqrt{(N - E_0)/NE_0} \tag{13}$$

Since N and E_0 are the same for all samples, $\sqrt{(N - E_0)/(NE_0)}$ is a constant = 0.1015; and thus, T has a binomial distribution like the ds.

To compute a confidence interval for τ_P the statistics program *SAS* was used to calculate the following exact 95% confidence interval for P_m, the proportion misclassified by our model:

$$0.0025 \leq P_m \leq 0.0725 \tag{14}$$

Of course for our random sample, $P_m = 0.0206$.

We can now easily compute a confidence interval for τ_P. Multiplying by the number of texts in the sample we get a confidence interval for E_m:

$$0.2425 \leq E_m \leq 7.0325 \tag{15}$$

Now if we substitute in equation (12) these values and the value of E_0 we arrive at the desired confidence interval:

$$0.8550 \leq \mu_T \leq 0.9950 \tag{16}$$

That is, we are 95% certain that the average τ_P is between 0.8550 and 0.9950. In other words our model is an excellent classifier of texts.

5.5.5 The Logistic Curve: Determining Genre from the Ratio of Preterites to Finite Verbs

The logistic curve in Figure 9 was derived from one sample. Again we need to extend these results to the level of the total population. We need to see the band of logistic curves, which could be produced by all the possible samples from the total population of texts. Such a plot is found in Figure 10.

In Figure 10 the light blue lines mark the outer edges of this band. All possible logistic curves derived from the ratio of preterites to finite verbs for the joint-population of 522 texts lie inside the band edges. Moreover, the vertical distance between the band edges for a given value of X is a confidence interval for the probability that a text with that X will be a narrative.

Since the sample texts used to develop the logistic regression model were either poetry or narrative, their actual probabilities were 0 and 1, respectively. Thus, the poetic texts (the red squares) are plotted at $P=0$ (the x-axis); whereas, the narrative texts (the green diamonds) are plotted at $P=1$. The x-coordinate for each square or diamond corresponds to the observed ratio of preterites to finite verbs for that text (its X value).

We can use the logistic regression curve band to classify texts with undetermined genre as follows: if a text lies on the curve to the left of the left edge of the band, we classify it as poetry; if it lies on the curve to the right of the right edge of the band, we classify it as narrative.

Texts with undetermined genre, which lie close to the horizontal line $P=0.5$ are in "no man's land." The slope of the curve is steepest at this point, the confidence interval is the greatest and candidly genre identification is uncertain. But far away from these lines, where the

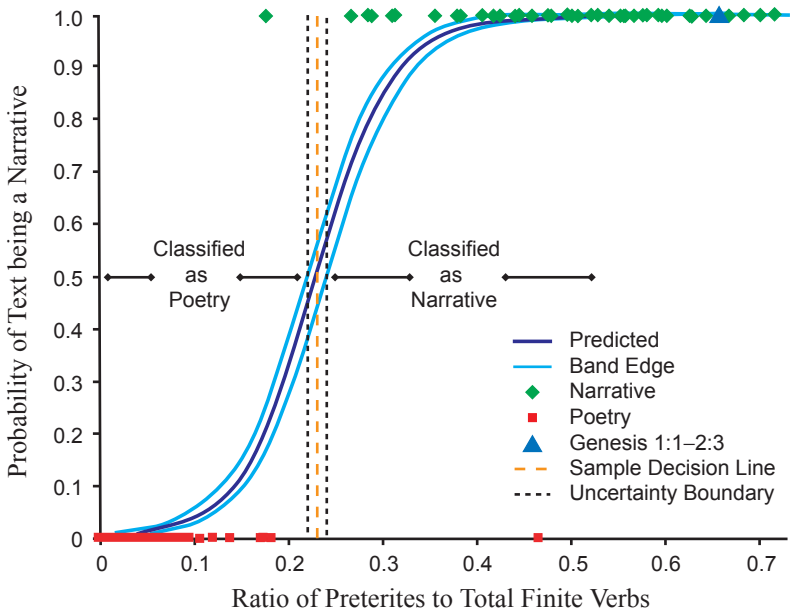

Figure 10. Plot showing the band of possible logistic curves derived from random samples from the total population of texts. The vertical distance between the light blue lines at a given ratio of preterites to finite verbs is a 99.5% confidence interval for the probability that a text with that ratio is a narrative.

curve is flattening out and approaching its asymptotes, $P=0$ and $P=1$, genre identification is almost certain, because the confidence interval becomes miniscule and virtually indistinguishable from our model curve.

The only area of uncertain classification is the box around the orange dashed decision line for the sample bounded by the black dotted vertical lines going through the points where the edges of the band intersect $P=0.5$, at $X=0.22$ and 0.24. This box is surprisingly narrow. In fact, this logistic regression band for the joint population of texts categorizes the sample texts identically to the logistic curve for the sample texts (Figure 9 and dark blue line in Figure 10), because none of the sample texts fall within the box.

6. Statistical Study: Conclusions

We undertook this study to determine the genre of Genesis 1:1–2:3—to put the conclusions drawn on the firm footing of statistical analysis (a quantitative approach) instead of the more tentative basis of subjective description (a qualitative approach)—and to explore the hermeneutical implications of our findings.

Rejection of the null hypothesis H_0 (that our model does not classify texts according to genre any better than random classification) at an extremely statistically significant level ($p<0.0001$) and average τ_p between 0.855 and 0.955 ($\alpha=0.05$), means that our model representing the ratios of preterites to finite verbs is an excellent classifier of texts according to genre.

In addition with R_L^2 more than 88% ($p<0.0001$) our model fits the data like a glove (see Appendix C, Section C2).

Our model therefore proves itself to be highly substantively significant in model fit and classification accuracy.

Because Genesis 1:1–2:3 was not part of the random sample, which we modeled using logistic regression, it has not been identified as poetry or narrative. As a result, the solid yellow triangle (same as scatter plots) in Figure 10, which represents this text, is neither at $P=0$ or $P=1$. Instead, it is within the band of logistic regression curves.

Figure 10 shows that Genesis 1:1–2:3 is far to the right of the area of uncertain classification—in fact, very close to the asymptote $P=1$. There is no doubt therefore that our model classifies Genesis 1:1–2:3 as narrative. But what is the probability?

With X equal to 0.654762, the vertical interval for this text (the range of probabilities for the text being a narrative) is

$$0.999942 \leq P \leq 0.999987 \tag{17}$$

at a 99.5% confidence level.

The nature of statistics is that all results are stated in terms of probabilities. So strictly speaking, we can say that with two choices for the genre of Genesis 1:1–2:3 (poetry or narrative), this text is narrative,

not poetry, with a very high degree of probability. Or to put the results in scientific terms: the text is a narrative with statistical certainty. In other words, it is statistically indefensible to argue that this text is poetry.

A distinctive of our model is that a text actually classifies itself. By its ratio of preterites to finite verbs, it identifies itself as narrative or poetry. We argued at the beginning of this study (Section 2.2) that the text itself would do this: tell us how we should read it. We have come—by way of a lengthy statistical analysis—to a conclusion, which would have been obvious to the original readers: Genesis 1:1–2:3 is a narrative.

Another thing that would have been obvious to them is how this narrative should be read. We turn now therefore to explore the hermeneutical implications of our findings thus far to complete our study.

7. Interpretive Implications

The primary implication of the virtual certainty that Genesis 1:1–2:3 is a narrative is that it should be read as other Hebrew narratives are intended to be read. This prompts us to ask the question: how did Biblical authors intend their narratives to be read? To answer this question we must investigate the Biblical authors' perspective toward the events they related and how they presented their material. We pose therefore a second question: did Biblical authors believe that they were referring to real events?[52]

Answering the last question, *Halpern* [1988, p. 3] states:

> The ancient Israelite historians . . . had authentic antiquarian intentions. *They meant to furnish fair and accurate representations of Israelite antiquity* . . . [they meant to] communicate information about specific phenomena outside the text, in the text . . . [the reader of this history is also involved in a communicative process by] determining what data its author meant the reader to extract .

Brueggemann [1997] also addresses this issue in his **Theology of the Old Testament**, which he builds on Israel's speech about YHWH: "Israel's speech about YHWH is characteristically situated historically."[53] But it is *Sternberg* [1985, p. 31], who drives the point

home:

> So does the Bible belong to the historical or fictional genre? … Of course *the narrative is historiographic*, inevitably so considering its teleology and incredibly so considering its time and environment. *Everything points in that direction*. … it addresses a people *defined in terms of their past* and *commanded to keep its memory alive*—which ordinance, judging by the *numerous retrospects performed by biblical characters* within the drama itself, they religiously observed. … The Bible is even the first to anticipate the appeal to the surviving record of the past that characterizes modern history-telling. Such relics abound on the narrative surface itself, appearing as facts to be interpreted and brought into pattern.

The following discussion comprises fifteen proofs that the authors of Biblical narratives believed that they were portraying real historical events. The first four pertain to perspectives and the next eleven to presentation and rhetoric.[54] In brief, these are: (1) God's people are defined in terms of their past; (2) God's people are commanded to keep the memory of their past alive; (3) God's people engage in retrospection on their past; (4) the remembrance of the past devolves on the present and determines the future; (5) customs are elucidated; (6) ancient names and current sayings are traced back to their origins; (7) monuments and pronouncements are assigned a concrete reason as well as a slot in history; (8) historical footnotes are sprinkled throughout the text; (9) written records used as sources are cited; (10) precise chronological reference points are supplied; (11) genealogies are given; (12) observations of cultic days and seasons are called acts of commemoration; (13) prophetic utterances are recalled and related to events in the narrative; (14) "time" words challenge ancient readers to validate historical claims made in the text; and (15) historical "trajectories" link different portions of the text and widely separate historical periods.

These fifteen are discussed in the numbered sections below. The illustrative examples in the discussions are supplemented by many more examples (with table notes) in Tables D1–D8 in Appendix D.

(1) God's people are defined in terms of their past. No matter where we dip into the narratives of the Old Testament, we encounter the past of the authors' characters as an integral part of the narrative.

Abraham is noted for having left his past and launching out into an uncertain future. YHWH made promises to Israel based on the promises He had made to the patriarchs. This is particularly evident in Exodus 6:2–8.[55] Seven "I wills," *bring out*, *deliver*, *redeem*, *take*, *be*, *take in*, and *give*, prospects for Israel's future, are inexorably linked to four verbs referring to YHWH's promises made in Israel's past: *I appeared* (ראה) to Abraham, to Isaac, and to Jacob as El Shaddai, but by name YWWH I was *not known* (ידע) to them, *I established* my covenant with them to give to them the land of their sojourning in which they were sojourning, to the land which *I lifted up* my hand to give to Abraham, to Isaac, and to Jacob. In addition, there are two verbs that immediately affect Israel's present: *I have heard* (שמע) their cry and *I have remembered* (זכר) my covenant.[56]

We cannot help but notice that Israel's past is an expanding past as we move *ad seriatim* through the Hebrew Bible. In other words, by the time of the events recorded in Joshua, Israel had been miraculously delivered from the "house of bondage," crossed the Yam Suph, the Egyptian chariotry had been crushed under the returning waters, the covenant stipulations articulated, agreed upon and the covenant ratified, the same covenant violated by worshiping the golden calf, the wilderness wanderings completed, Balaam's plot thwarted and himself executed, and the entire adult generation (with the exception of Caleb and Joshua), who witnessed all of this past, had died. Even Aaron and Moses had died.

Or even farther along in the Bible—for example, by the time of 2 Kings 17—the period of judges had occurred, Samuel had anointed Israel's first two kings, David had reigned and was the exemplar for the kings of Judah, Solomon had built the temple, the kingdom had divided, Elijah had successfully challenged Baalism, Jehu had trampled Jezebel, and Shalmaneser V had conquered Samaria. And so it goes. The narrative constantly refers to this ever accreting past.

(2) God's people are commanded to keep the memory of the past alive. There are three types of examples, evincing this perspective: questions from sons, commands to inculcate the past to the next generation, and commands to remember. Examples of type one begin,

"When your son/s says/asks you/their fathers what is the significance of …" (Exodus 12:26; Deuteronomy 6:20; Joshua 4:6, 21). The hypothetical question is followed by the answer (rather extensive in some cases) to be given to the questioner. And the anticipation is that not only the present generation—when they are old enough—but future generations will ask this question and their fathers must respond appropriately.

The second type involves commands to teach principles to the next generation. The parade example of such a command is Deuteronomy 6:7, "Repeat them to your children … ." A second, very illustrative example occurs in Deuteronomy 26:1–10. Within this text, the specifics of the first fruit presentation, is a review of Israel's past, which the presenter was required to recite. The perspective of the author of the text is that these recitals would occur in the future ("when you enter into the land, which YHWH your God is about to give to you as an inheritance and you possess it … "), which would look back on what YHWH had already accomplished in the author's time and what He had yet to accomplish by the author's time but would have accomplished by the time of these recitals. According to the text, after the Israelite put the first fruits in a basket and traveled to the location of the central sanctuary, he was to give two recitals: the first to the officiating priest before the offering is made, "I am telling YHWH your God today that I have come into the land which YHWH swore to our fathers to give to them," and the second "before YHWH your God" was a sweeping first person narrative of the past, which included the Patriarchal period, the Egyptian sojourn, the oppression in Egypt, the Exodus and allusions to the plagues, allusion to the conquest, and a description of the land, "a land flowing with milk and honey." A final example, although in poetry instead of narrative, is found in Judges 5:10–11, "Those who ride on tawny she-asses, who sit on carpets, who walk on the road, muse. To the sound of musicians, among the water drawers, there let them recount the righteous deeds of YHWH." In this case the people of God were enjoined to relate the story of Jael's, Deborah's and Baraq's victory over Sisera and Jabin.

The third type is introduced by זכר (zkr) "remember." Particularly notable are isolated infinitive absolutes of this root. At the Exodus:

"Remember this day that you came out of Egypt out of the house of slaves, because by a strong hand YHWH has brought you out from here, so that which is leavened must not be eaten" (Exodus 13:3). In a warning about leprosy: "Remember what YHWH your God did to Miriam …" (Deuteronomy 24:9). Concerning Amalek's unconscionable attack on the rear of Israel's column: "Remember what Amalek did to you on the way when you came out of Egypt … how he 'tailed' you, the weak ones in your rear, while you were faint and weary, he did not fear God. When YHWH your God has given you rest from all your surrounding enemies in the land, which the YHWH your God is going to give to you as an inheritance to possess, you must blot out the memory of Amalek from under heaven. Do not forget" (Deuteronomy 25:17–19). Also we find regular imperatives, such as in Micah 6:5: "Please, remember, my people, what Balak king of Moab purposed and what Balaam the son of Beor answered him from Shittim to Gilgal in order to know the righteous deeds of YHWH." As a final example consider this reminder to the people before the conquest: "Remember the word that Moses the servant of YHWH commanded you: YHWH your God is about to give you rest and to give you this land" (Joshua 1:13).

(3) The Bible contains numerous retrospections on the past. The Bible is replete with historical reviews of the past, which are theological reflections, often for the purpose of ameliorating behavior. These are found in the Torah, the Prophets and the Writings. For examples see Appendix D, Table D1.

(4) The remembrance of the past devolves on the present and determines the future. Often accompanying a review of the past is an exhortation to learn from the past, the strongest being warnings not to follow the trail of perfidy blazed by their fathers. Although discussed above under different rubrics, four additional texts invite comment: Deuteronomy 4, Joshua 24:1–13, Hosea 12:4–7, and Psalm 78. The first of these texts is the last part of the historical prologue preceding the restating of the Decalogue. Moses reminded the people assembled to hear his final addresses of the crucial historical reference points of the Baal Peor incident and the Sinai Theophany, what they should have learned from them and the consequences of not acting upon this

knowledge.

The covenant renewal ceremony (Joshua 24:1–13) included an extensive historical review, going all the way back to the patriarchs' former worship of idols in their country of origin. This speech contains twenty 1cs [first person common singular] verbs, which detail YWHW's past actions for the people (who are mostly referred to in the 2mp [second person masculine plural]).

Although brief, the historical reference in Hosea 12:4–7 to Jacob is telling. Hosea, an eighth century B.C. prophet, appealed to the example of the transformation of Jacob, which had been effected when he had wrestled with the angel of YHWH to enjoin the people of the Northern Kingdom of Israel to undergo a similar transformation: to return to their God and to wait for God continually.

Finally, there is the extraordinary text of Psalm 78:1–8:

> … Testimony arose in Jacob and instruction He placed in Israel, which He commanded our fathers to make known to their children, in order that a later generation, sons who would be born, would arise and relate (them) to their sons, in order that they might place their confidence in God and not forget the deeds of God and His commandments they would guard, so that they would not be like their fathers, a refractory and rebellious generation, which did not establish its heart and whose spirit was not firm in God.

The rest of this psalm is a review of the rebellions of Israel. The psalmist drew on his past in his time in order to mold the future.

(5) Customs are elucidated. Authors would have had little reason to elucidate customs if they were not convinced of their historicity. The first to be discussed pertains to a dietary exclusion, which was originated to memorialize when Jacob wrestled with God and the latter dislocated his hip with a touch. For this reason, the text says, the children of Israel do not eat the portion of animals, which is in the same location as Jacob's injury, until this day (Genesis 32:26, 32–33). This obviously challenged the ancient reader to test what the author had said.

A second custom elucidated involved the removal of a sandal, which meant that a kinsman redeemer had refused to engage in levirate marriage, that is, a brother's duty to raise up a seed for his heirless,

deceased brother, by marrying his widow (Deuteronomy 25:5–10). The custom is elucidated in Ruth 4:7 as a clarification to the reader, whom the author thought was unfamiliar with the custom (this is the only report of levirate practice in the Old Testament). The custom is introduced with the phrase, "This was (the way) previously in Israel concerning redemption and exchange, to confirm any word: a man would draw off his sandal." The word "previously" suggests that the custom was not practiced in the author's day—a fact that the author deems important for his readers to know (Ruth 4:8).

The third custom is discussed in 1 Samuel 30. David, upon returning to Ziklag, discovered that a band of Amalekites had raided and kidnapped his family. He and his 600 men immediately set off after the miscreants. Arriving at the Wadi Besor, 200 of his men were too exhausted to continue on. Four hundred continued with David. After slaughtering all but 400 of the Amalekites (who had escaped on camels) and rescuing his family, David returned to the 200 who had remained behind and shared the booty with them against the protests of some of the 400. After this, David's pronouncement became statute and custom in Israel, which was still in effect in the author's time.

(6) Ancient names and current sayings are traced back to their origins. A Biblical author frequently explained how a place had received its name by appealing to the historical context in which the naming had occurred. Often this name persisted in the author's day. It is clear that the author expected that his readers would be interested in the explanation of the origin of names current in their day, almost as if he was tacitly asking his readers the question, "Would you like to know how so and so received its name?" And then, anticipating a "Yes, we would" answer, he supplied the information. The following texts explained the origins of names.[57] Also historical tracings of the origins of sayings are attested. Examples are in Appendix D, Table D2.

(7) Monuments and pronouncements are assigned a concrete reason as well as a slot in history. Biblical authors frequently explained the purposes for the placement of monuments, which often involved the naming of these monuments. Four of these stand out: the dual naming of Gilead—Laban gave it an Aramaic name—Jacob, its Hebrew name

(Genesis 31:44–54); the monuments created to mark the crossing of the Jordan (Joshua 4:1–9); the cairn erected over the corpses of Achan and his family (Joshua 7:25–26); and how Caleb obtained his inheritance (Joshua 14:6–14).

In the second and third of these the author virtually challenged his ancient readers to prove him wrong. This is significant in at least two ways. First of all, he would not have issued the challenge if he knew that it was not true. Second, because the pile must have existed in the author's day and rocks used for building can be dislodged through earth tremors—the account of the events cannot extensively post-date the events themselves.

In the fourth account there is an unstated allusion to the promise YHWH had made to Caleb, which is recorded in Numbers 14:24.

Biblical authors also explained why things were the way they were in their day. Three examples of this will suffice. The first concerns Israel; the other two do not, and, in fact, take place outside of the land of Israel. All three accounts move us to ask the question how did the author know this? The first, although it involves Israel is about a non-Israelite, Rahab. The author anticipated and supplied the answer to the question: how did a non-Israelite former prostitute end up living in their midst (Joshua 6:25)?

The second pertains to the lands and crops of the Egyptian people. According to Genesis 47:13–22, the people had exhausted their resources, money and animals, yet the famine persisted and they needed food. Out of desperation they offered themselves and their lands in exchange for food. Joseph, Pharaoh's vizier, agreed. All their land became Pharaoh's and they became his slaves—but this did not apply to the Egyptian priests and their land; they received an "allowance" of grain directly from the royal granaries and, therefore, did not have to sell their land, nor did they have to give the crown one-fifth of their crop like the rest of the people. The information about these exemptions is supplied by the author as an historical note. And the author tells us that that was the way it was in his day.

The third story is in 1 Samuel 5. After the Philistines defeated Israel at the Battle of Aphek, captured the Ark of the Covenant and brought it

to Ashdod, they—being staunch adherents to the Ancient Near Eastern syllogism that my army cannot defeat your army until my god defeats your god—positioned the Ark next to the statue of Dagon, to proclaim his victory over YHWH. But when they entered the temple of Dagon the next day, Dagon had fallen over in such a way that he appeared to be prostrating himself to YHWH. The Ashdodites dutifully replaced him back on his pedestal on the dais, unaware that their actions mocked the putative deity of Dagon, who had supposedly defeated YHWH, but was incapable of even righting himself! The next day Dagon had fallen in the same posture again and in addition his decapitated head and his two severed hands had fallen onto his dais. This time the Ashdodites did not attempt to right Dagon. Dagon was desecrated, his dais cursed and, perhaps, he was even considered dead.[58] Even his priests dared not tread on his dais. A situation that the author tells us obtained also in his day. The narrative continues: YHWH ravaged Philistia with plagues and compelled its rulers and people to acknowledge His sovereignty, which—the author has told us—Dagon had already done.

(8) Historical footnotes are sprinkled throughout the text. In most cases, narrative details are not superfluous.[59] On occasion, however, the reason the author included a piece of information escapes us—meaning that we cannot ascertain how it impinges on the development of the narrative. Information supplied does not qualify as either gaps or blanks.[60] It is not a matter of a lack of knowledge but a surplus. This is historical information supplied for the benefit of the interested reader. Examples of these are found in Appendix D, Table D3.

(9) Written records used as sources are cited. Not surprisingly, there are references made to the Book of the Law of Moses (Joshua 8:31; 23:6; 2 Kings 14:6; Nehemiah 8:1), the Book of Moses (2 Chronicles 35:12; Ezra 6:18), the Book of the Law of God (Joshua 24:26), the Book of the Law (Joshua 8:34), the Book of the Law of YHWH (2 Chronicles 17:9) and the Book of the Covenant (2 Kings 23:21).[61] Additional sources are in Appendix D, Table D4.

(10) Precise chronological reference points are supplied. The Bible begins with an account locked into time. A prominent feature of the Creation Account in Genesis 1:1–2:3 is the steady sequence of

six days (explicitly marked off by the phrase "evening was; morning was: X day," after God's creative acts on the first six days). Table D5 in Appendix D lists events dated to specific chronological reference points.

(11) Genealogies are given. This preoccupation with the progenitors of the past is not gratuitous. It serves at least three historiographical purposes. Alone or often intertwined with narrative—with narrative imbedded in genealogies or genealogies imbedded in narrative—genealogies *structure* history, *survey* history and *support* history. In addition to structuring the Book of Genesis and the first nine chapters of 1 Chronicles, genealogies can *structure* history (meaning event sequence). Examples of all three uses of genealogies are found in Appendix D, Table D6.

(12) The observation of cultic days and seasons are called acts of commemoration. The appointed times for Israel were Sabbaths (to remind them that YHWH is Creator [Exodus 20:8–11] and Deliverer [Deuteronomy 5:15]), new moons and the three annual feasts. See Table D7 in Appendix D for specifics.

(13) Past prophetic utterances are recalled. With this rubric and the two that follow the polarity of the Biblical time line is established and aligned with a largely continuous narrative from Genesis 1:1 through Nehemiah 13:31. We begin by looking at the time line in two directions. The first direction is an orientation toward the prophet's future. When reporting declarations about the future, the Biblical authors often explicitly linked prophetic statements to particular contexts. When an author from a later time and farther along in the canon mentioned a fulfillment of a prophetic pronouncement, he makes us focus on the second direction, an orientation toward the past (both his and that of his characters), in particular the context, which provoked the initial utterance. Four noteworthy examples are Joshua's curse on the rebuilding of Jericho (pronouncement [Joshua 6:26]; fulfillment announced [1 Kings 16:34]); the removal of Eli's line from the priesthood (pronouncement [1 Samuel 2:31]; fulfillment announced [1 Kings 2:27]); the proclamation of an anonymous man of God that a king named Josiah would desecrate Jeroboam's altar at Bethel and

the account of the former's death and burial (pronouncement [1 Kings 13]; fulfillment announced and discovery of the man of God's tomb [2 Kings 23]); and the captivity would last 70 years (pronouncement [Jeremiah 25: 11–12]; promises claimed on the basis of this pronouncement [Daniel 9:2]).

(14) "Time words" explicitly indicate testable temporal continuity or discontinuity. With this rubric we continue our examination of the polarity of the Biblical time line, moving to a consideration of a very interesting characteristic of the text. Biblical authors could have told their stories without making any connections to their present. And thus their texts would only have been unverifiable tales—riveting, to be sure—but of little historical interest. But the fact of the matter is that the Biblical authors did just the opposite: they deliberately anchored their stories to testable and therefore falsifiable claims.[62] In fact, their express statements linking the past to their present or severing the present from the past was a risky business if they did not know their facts! They were challenging their contemporary readers to disprove their claims.

Two classes of temporal markers are attested, which link at least two separate times, the author's present and his past: the group of time words, which indicate temporal continuity with the past, and those which mark discontinuity with the past. Table D8 in Appendix D comprises a selection of the first class.

The second class of temporal markers indicates discontinuity.[63] By using these markers a Biblical author was stating that the present names, customs, sayings and situations, which were familiar to his readers, were different in the past. Although not verifiable, the very mention of these differences enforces the historical nature of the account. As I mentioned above, why would the author go to the trouble of concocting an elaborate past, which would only tangentially engage his readers? If there were only a few of these it would be one thing. But in fact, there are many—all covered in the discussions above.

(15) Historical trajectories occur. Certain people, statements, and ideas are projected with such great force in the Pentateuch that their trace is found through large expanses of text and time. Outside of the promises made to the Patriarchs, which are discussed above, we will look at the

following fascinating trajectories: the journey of Joseph's bones, the enigma of Balaam, YHWH's dogged pursuit of the Amalekites, and the checkered history of Moab and Ammon. We begin at the deathbed of Joseph.

Recognizing that he was to die soon, Joseph asserted to his family that God would intervene on their behalf and bring them up from Egypt and into the land, which He swore to Abraham, to Isaac and to Jacob (Genesis 50:24). Moreover, repeating his assertion and even strengthening it "God will surely intervene," in an act of faith reminiscent of his father's, Joseph charged his family to not leave his bones in Egypt (Genesis 50:25). Nevertheless, the Book of Genesis ends with Joseph embalmed in a sarcophagus in Egypt.

We do not hear the slightest rattle of his bones during the hundreds of years of Egyptian sojourn and oppression, nor do we hear anything during the years of the plagues in Egypt. But suddenly they are clanking quite loudly at the Exodus:

> Moses took the bones of Joseph with him, because he had clearly made the children of Israel take an oath, 'God will surely intervene for you, then you will bring out my bones from this place with you' (Exodus 13:19).

Again there was silence: the skeleton was back in the "closet." And there it quietly hung until the children of Israel buried it back in the land:

> And the bones of Joseph, which the children of Israel had brought up form the land of Egypt, they buried in the portion of the field, which Jacob had purchased from Hamor, the father of Shechem for one hundred qeshita (Joshua 24:32).

The burial of Joseph's bones marks a closure in the narrative. Joseph was the first son of Jacob to leave the land and with his burial he was the final son to return.

We now turn to a much less noble character, Balaam. Outside of the contiguous narrative in Numbers 22–24, Balaam is presented as a despicable character. But the Biblical authors persistently mention his name, what he did, what YHWH did in response, and what happened to him. It seems that Balaam made an impact. He is mentioned as late as Nehemiah 13:2 and even in the last book of the New Testament![64]

Balaam tried to curse Israel in order to receive a handsome remuneration from King Balak of Moab. YHWH would not let him curse Israel but turned his attempted cursing into blessing. But Balaam did not give up his fee that easily. He figured out another way to frustrate Israel: lure them into idolatry. This he was able to do at a place synonymous with idolatry, Baal Peor (Numbers 25). YHWH ordered 12,000 Israelites into battle against the Midianites because of the Baal Peor incident. The final enemy casualty mentioned in the battle report was Balaam: "And they also killed Balaam, the son of Beor, with a sword" (Numbers 31:1–8). Moses mentioned Balaam again: his effort to curse Israel and YHWH's interdiction of these efforts (Deuteronomy 23:4–5). Joshua mentioned Balaam's execution (Joshua 13:22) and YHWH transforming the seer's curses (Joshua 24:9–10). Even the prophet Micah pointed out YHWH's righteous deed in delivering the people from Balaam's first efforts (Micah 6:5).

Amalek, flawed in his pedigree (the grandson of Esau and Adah, a Hittite, and born of a concubine [Genesis 36:2, 12]), fathered the Amalekites, a people deemed even more despicable than Balaam. They were desert marauders from the outset. These bandits cowardly descended on the rear of Israel's column coming out of Egypt, and sealed their own doom. YHWH pronounced national extermination upon them, a sentence which He never rescinded for the group as a whole and individual Amalekites fared no better.

The trajectory of the Amalekites is clear. After assaulting Israel during the Exodus (Exodus 17), they and the Canaanites routed the presumptuous Israelites, who tried to enter the land after YHWH pronounced judgment upon them (Numbers 14:45). Moses mentioned them immediately before Israel entered the Land, reminding the people to exterminate them as soon as they were settled in the Land (Deuteronomy 25:17–19). During the period of the judges, the Amalekites joined with the Ammonites and the Moabites under the leadership of Eglon, the king of Moab to oppress Israel (Judges 3:13). Also, Gideon faced and defeated a coalition of Midianites and Amalekites, who had been ravaging the land (Judges 6:3, 33; 7:12). Near the end of this period YHWH reminded the people that He had given them victory over a number of

oppressors—including the Amalekites (Judges 10:11–12). Saul, Israel's first king, fought against the Amalekites (1 Samuel 14:47–48). But Saul did not eliminate the Amalekite threat even though he was charged to do so. In his infamous encounter with the Amalekites, he spared their king and their best animals (1 Samuel 15:1–33; 28:18). David, his successor, regularly raided among the Amalekites from Ziklag (1 Samuel 27:8) and had a serious encounter with the Amalekites at about the same time that Saul was fighting the Philistines. On this occasion, he slaughtered most of the Amalekite bandits who had kidnapped his family, but 400 escaped into the desert on camels (1 Samuel 30:1–18). Moreover, David ordered the execution of an Amalekite who claimed to have killed a mortally wounded Saul at the latter's request (2 Samuel 1:1–16). Those Amalekites who escaped from David on camels apparently made their way to Mount Seir, because they were later supplanted by the Simeonites (1 Chronicles 4:43). This was the end of the Amalekites. Their trajectory parallels the history of Israel, from the patriarchal period, through the Exodus, wilderness years, period of the judges, and the reigns of Saul and David.

Finally, we will trace back to the Patriarchal Period the checkered history of Moab and Ammon, in which later texts refer to incidents reported in earlier texts, forming the links of a chain, which goes back to the origin of these peoples. The author of Chronicles has the latest mention of Moab and the Sons of Ammon. He looks back to the time in which Jehoshaphat—pleading for YHWH to deliver Judah from an invading horde, which included Moabites and Ammonites—made the following biting observation:

> So now as far as the Sons of Ammon, Moab and Mount Seir are comcerned, among whom you would not allow Israel to enter, when they came from Egypt, with the result that they turned aside from them and did not destroy them, they would recompense us by coming and driving us from your possession, which you caused us to possess (2 Chronicles 20:10–11).

The original records of these divine prohibitions are found in Deuteronomy 2:9, 19. Concerning Moab, YHWH said:

> Do not harm Moab and do not stir up strife for battle against them, because I have not given you any of his land a possession; because to the sons of Lot

I have given Ar as a possession (Deuteronomy 2:9).

YHWH's almost identical prohibition regarding Ammon is in Deuteronomy 2:1. These texts look back to the time just before the Children of Israel arrived at the Plains of Moab. Having defeated the Canaanites and Amalekites, Israel was eager to fight the Moabites and Ammonites, but YHWH forbad it, explaining that they were sons of Lot. This is of course takes us back to the story told in Genesis 19: the story of Lot and his daughters. His daughters made their father drunk on two successive nights. In his inebriated state he impregnated each of his daughters. Their sons by their father were the progenitors of the Moabites and the Ammonites.

The chain is complete. It extends back from the days of the author of Chronicles to the time of Jehoshaphat; from his time to the days before the Conquest; from the days before the Conquest to the Patriarchal Period.

8. Conclusions

Although lacking the mathematical rigor of the statistical study, which rejected the null hypothesis H_0 (a classification model derived from the distribution of the relative frequency of preterites classifies texts no better than random results) and accepted the alternative hypothesis H_1 (a classification model derived from this distribution classifies texts better than random results), which computed that the proportion of error reduction using the model is between 85.5 and 95.5 percent with a 95% confidence interval, and which determined that the probability that Genesis 1:1–2:3 is narrative is between 0.999942 and 0.999987 at a 99.5% confidence level, the weight of evidence (summarized in Section 7 and Appendix D) is so overwhelming that we must acknowledge that Biblical authors believed that they were recounting real events. We must therefore call their work history.[65]

The combination of the statistical and Biblical arguments is the "evidence" to which the subtitle of this chapter, "evidence for an historical reading of Genesis 1:1–2:3," refers.

Since Genesis 1:1–2:3 has the same genre as historical narrative texts

and is linked lexically and thematically to these texts it *should* be read as these texts are read: as a realistic portrayal of the events.

Sailhamer [1992, p. 13] explains what "realistic portrayal of the events" means:

> A biblical narrative text takes the raw material of language and shapes it into a version of the world of empirical *reality*. Its essential linguistic structures are adapted to conform to events in *real* life. The constraints that shape *real* life (for example, the limitations of time and space and perspective) are the constraints to which historical narrative texts must strive to conform in their imitation of *real* life … Events and characters are put before the reader as happening just as they happen in *real* life. The reader looks at the events in the narrative in much the same way as he or she would look at events in *real* life. They happen in the text before one's eyes (emphasis mine).

How then *should* we read Genesis 1:1–2:3 in light of the fact that it is an historical narrative? Answer: as a realistic portrayal of the Creation of the universe. So again we have come—this time by means of a lengthy accumulation of evidence—to a conclusion, which would have been obvious to the original readers of this text.

Now as modern readers we are faced with a choice: to believe or not believe that it happened the way the author described. *Should* we as readers believe what the authors wrote? If we are faithful to their presentation we should. These historians do not allow us to be dispassionate observers of the past as we read their texts. They *compel us* to believe the past they portray. But *will* we believe *this* text?

Sternberg [1985, pp. 32–34] forcefully argues:

> Were the narrative written or read as fiction, then God would turn from the lord of history into a creature of the imagination, with the most disastrous results. The shape of time, the rationale of monotheism, the foundations of conduct, the national sense of identity, the very right to the land of Israel and the hope of deliverance to come: all hang in the generic balance. Hence, the Bible's determination to sanctify and compel literal belief in the past. It claims not just the status of history but … of *the* [author's italics] history, the one and only truth that, like God himself, brooks no rival …. *if as seekers for the truth, professional or amateur, we can take or leave the*

> *truth claim of inspiration, then as readers we must simply take it*—just like any other biblical premise or convention, from the existence of God to the sense borne by specific words—***or else invent our own text*** [last emphasis mine].
>
> Will we believe this text? The answer: we must.

9. Acknowledgments

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But I direct my most profound gratitude toward my Creator and Savior. To Him be the glory. Isaiah 40:25–26.

Appendix A: Additional Results of the Exploratory Phase

A.1 Texts Selected

I picked texts acknowledged to be either narratives or poems. The narrative texts included in the analysis and plotted according to the following numbers in Figure A1 were: (1) the Joseph Story (Genesis 37–50), (2) Joshua's conquest of the Promised Land (Joshua 5–8),

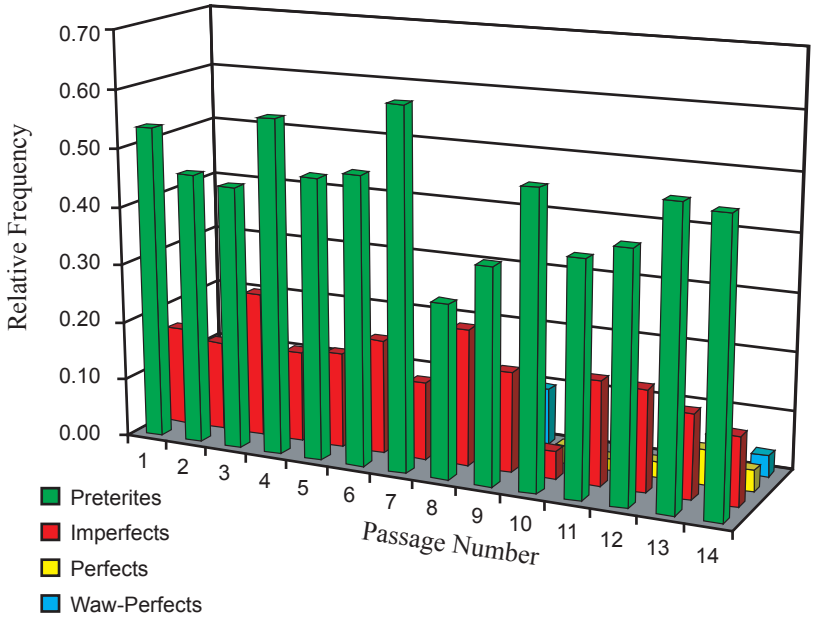

Figure A1. 3-D bar graph of the finite verb distribution in selected narrative texts. The numbers on the *x*-axis represent the following narrative passages: (1) the Joseph Story (Genesis 37–50), (2) Joshua's conquest of the Promised Land (Joshua 5–8), (3) the Samson pericopes (Judges 13–16), (4) the Ark narrative (1 Samuel 5:1–7:1), (5) Ruth, (6) Esther, (7) Nehemiah, (8) the Court History of David (2 Samuel 11–20), (9) the Ministry of Elijah (2 Kings 17–19), (10) Hezekiah and Sennacherib; (11) Jehoiakim burning the scroll of Jeremiah (Jeremiah 36), (12) the Fall of Jerusalem (2 Kings 25), (13) Kings, and (14) Chronicles.

(3) the Samson pericopes (Judges 13–16), (4) the Ark narrative (1 Samuel 5:1–7:1), (5) Ruth, (6) Esther, (7) Nehemiah, (8) the Court History of David (2 Samuel 11–20), (9) the Ministry of Elijah (1 Kings 17–19), (10) Hezekiah and Sennacherib; (11) Jehoiakim burning the scroll of Jeremiah (Jeremiah 36), (12) the Fall of Jerusalem (2 Kings 25), (13) Kings, and (14) Chronicles.

The poetic texts I chose are plotted in Figure A2 as follows: (1) Jacob blessing his sons (Genesis 49), (2) The Song of the Sea (Exodus 15),

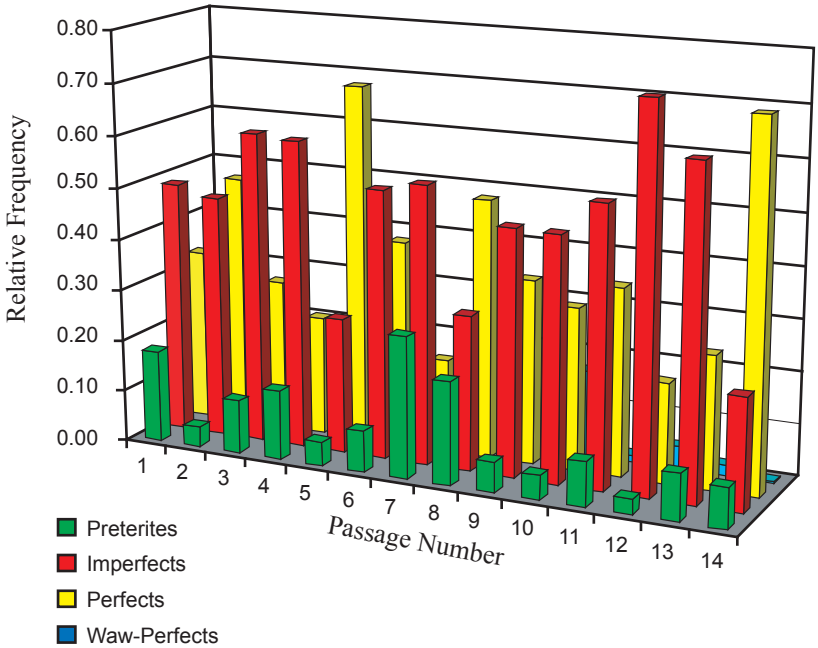

Figure A2. 3-D bar graph of the finite verb distribution in selected poetic texts. The numbers on the *x*-axis represent the following poetic passages: (1) Jacob blessing his sons (Genesis 49), (2) The Song of the Sea (Exodus 15), (3) The Oracles of Balaam (Numbers 23–24), (4) The Song of Moses (Deuteronomy 32), (5) The Jael Poem (Judges 5), (6) The Prayer of Hannah (1 Samuel 2:1–10), (7) David's Song (2 Samuel 22), (8) the prayer of Jonah (Jonah 2:2–10), (9) Isaiah 1–35, (10) Minor Prophets, (11) Psalms, (12) Proverbs, (13) the dialogues and monologues of Job, and (14) Lamentations.

(3) The Oracles of Balaam (Numbers 23–24), (4) The Song of Moses (Deuteronomy 32), (5) The Jael Poem (Judges 5), (6) The Prayer of Hannah (1 Samuel 2:1–10), (7) David's Song (2 Samuel 22), (8) the prayer of Jonah (Jonah 2:2–10), (9) Isaiah 1–35, (10) Minor Prophets, (11) Psalms, (12) Proverbs, (13) the dialogues and monologues of Job, and (14) Lamentations.

A.2 3-D Bar Graphs of Relative Frequency

The relative frequencies plotted in Figures A1 and A2 (green for preterites, red for imperfects, yellow for perfects and blue for waw-perfects) show green dominates in narrative, red and yellow in poetry, indicating that the relative number of preterites is not just significant but decisive.

A.3 Scatter Plots

Simple *x*-*y* scatter plots confirm the visual impression of the 3-D bar graphs. In the first *x*-*y* plot (Figure A3) the ratio of preterites to finite verbs is plotted on the *x*-axis and the ratio of imperfects to finite verbs is plotted on the *y*-axis, with the ratios for both genres appearing on the same graph. The points for each genre were colorized and given distinct shapes to manifest any clustering, with green diamonds for narrative and red squares for poetry. In addition, the eight texts that are compared and contrasted in Figure 2 were included: Red Sea texts are marked by large blue diamonds (solid for narrative, outline for poetry); Baraq-Deborah-Jael texts by large blue squares (solid for narrative, outline for poetry): Creation texts by blue triangles (solid for Genesis 1:1–2:3, outline for Psalm 104); the Flood text by a solid magenta circle and Psalms 105–106 are indicated by a solid orange square. The second *x*-*y* plot (Figure A4) was done in exactly the same way but with the ratio of perfects to finite verbs on the *y*-axis. In both *x*-*y* plots clustering is clearly evident, although the clusters are more defined for the "imperfect" data. Moreover, the paired texts from Figure 2 are clearly clustered by genre.

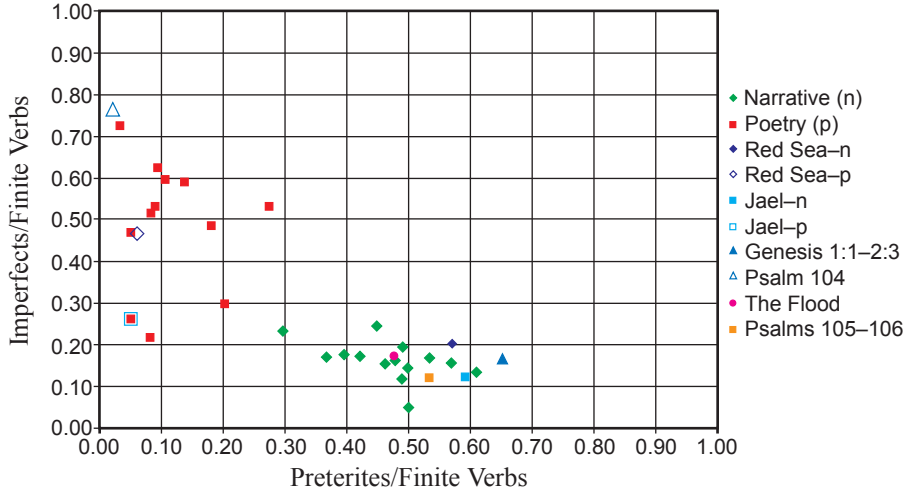

Figure A3. Scatter plot for selected texts, with preterites/(finite verbs) on the *x*-axis and imperfects/(finite verbs) on the *y*-axis. Clustering by genre is evident in both selected texts and paired texts.

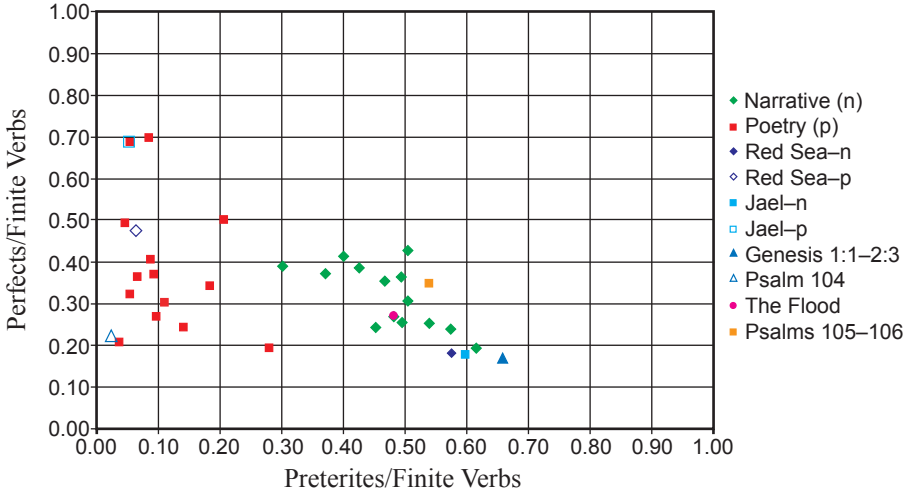

Figure A4. Scatter plot for selected texts, with preterites/(finite verbs) on the *x*-axis and perfects/(finite verbs) on the *y*-axis. Clustering by genre is evident in both selected texts and paired texts.

A.4 Inferential Modeling

Given the distinctly different distribution of finite verbs in narrative and poetry two inferential analyses were tested to determine if one or both could identify the genre of a text with unknown genre by its finite verb distribution. The two tested were discriminant analysis and logistic regression.[66]

A.4.1 Discriminant Analysis

The first method tested was discriminant analysis. The necessary condition for this inferential approach is that independent variables have a joint multivariate normal distribution. In other words, each independent variable must have Gaussian distributions for both narrative and poetry.

Since the discriminant analysis only included one independent variable, the percent of preterites among finite verbs, we only needed to check the normality of that distribution. Histograms of the distribution of the percent of preterites among finite verbs for the narrative passages show that this distribution is normal. Moreover, several other tests for normality were conducted and all failed to reject the null hypothesis that the distribution is normal.

On the other hand, for the poetic passages the distribution of the percent of preterites among finite verbs for poetic texts is not normal. Several other tests for normality were conducted and most rejected the null hypothesis that the distribution is normal.

Even though this model discriminated well between the two groups of texts, because the *joint* multivariate distribution is not normal, we chose to model the data by the second method, logistic regression.

A.4.2 Logistic Regression

The second method tested was logistic regression. Logistic regression is discussed in detail in Section 5.5 above. In brief, it was ideal for our study because with only two possibilities for the dependent variable, narrative or poetry, the data is patently non-linear, and, therefore, does not yield easily—if at all—to an ordinary least squares analysis.

Also, logistic regression does not require our data to form a normal distribution—it does not, nor does it assume homoscedasticity (variance is independent of the mean).[67]

The model produces a flattened S-shaped curve, which is relatively flat at the origin, climbs (steeply or gradually, depending on the general distribution of the data), and eventually flattens out at $y = 1$ (see Figure 9).

Appendix B: Data for Confirmatory Phase

The data for narrative is in Tables B1–B4; the data for poetry is in Tables B5–B8.

Table B1. Finite verb counts for narrative: Torah

	Text	Verb Counts					[ ]/Total Finite Verbs					
		Total Verbs	Preterites	Imperfects	Perfects	Waw-Perfects	Total Finite Verbs	Total Non-Finite Verbs	Preterites	Imperfects	Perfects	Waw-Perfects
1	Genesis 17	70	16	17	8	19	60	10	0.27	0.28	0.13	0.32
2	Genesis 21	113	57	14	25	0	96	17	0.59	0.15	0.26	0.00
3	Genesis 31	193	70	24	56	3	153	40	0.46	0.16	0.37	0.02
4	Exodus 3	99	21	23	16	14	74	25	0.28	0.31	0.22	0.19
5	Exodus 7:14–25	52	14	5	12	6	37	15	0.38	0.14	0.32	0.16
6	Exodus 11	32	6	10	4	4	24	8	0.25	0.42	0.17	0.17
7	Exodus 15:22–16:36	166	52	21	35	10	118	48	0.44	0.18	0.30	0.08
8	Exodus 32	156	65	15	35	2	117	39	0.56	0.13	0.30	0.02
9	Exodus 33	103	14	25	11	29	79	24	0.18	0.32	0.14	0.37
10	Exodus 39	79	30	2	21	0	53	26	0.57	0.04	0.40	0.00
11	Numbers 10:11–34	42	10	6	4	12	32	10	0.31	0.19	0.13	0.38
12	Numbers 12	52	19	10	11	0	40	12	0.48	0.25	0.28	0.00
13	Numbers 20:1–21:9	147	66	21	19	14	120	27	0.55	0.18	0.16	0.12
14	Numbers 21:10–14, 15, 21–27, 31–35	56	26	11	8	1	46	10	0.57	0.24	0.17	0.02
15	Numbers 22	185	77	27	28	2	134	51	0.57	0.20	0.21	0.01
16	Exodus 7:1–13	43	13	8	6	7	34	9	0.38	0.24	0.18	0.21
17	Exodus 18	89	29	15	13	12	69	20	0.42	0.22	0.19	0.17

Table B2. Finite verb counts for narrative: Former Prophets

	Text	Verb Counts					[ ]/Total Finite Verbs					
		Total Verbs	Preterites	Imperfects	Perfects	Waw-Perfects	Total Finite Verbs	Total Non-Finite Verbs	Preterites	Imperfects	Perfects	Waw-Perfects
18	Joshua 7	122	50	21	19	6	96	26	0.52	0.22	0.20	0.06
19	Joshua 13:8–33	28	11	0	15	0	26	2	0.42	0.00	0.58	0.00
20	Joshua 15	60	15	3	2	32	52	8	0.29	0.06	0.04	0.62
21	Judges 3:8–31	90	58	0	14	0	72	18	0.81	0.00	0.19	0.00
22	Judges 4	76	24	9	12	9	54	22	0.44	0.17	0.22	0.17
23	Judges 11–12	222	104	23	39	10	176	46	0.59	0.13	0.22	0.06
24	1 Samuel 3	98	37	12	20	2	71	27	0.52	0.17	0.28	0.03
25	1 Samuel 27	47	15	9	8	5	37	10	0.41	0.24	0.22	0.14
26	2 Samuel 4	58	30	2	12	1	45	13	0.67	0.04	0.27	0.02
27	2 Samuel 8:1–18	56	28	0	13	0	41	15	0.68	0.00	0.32	0.00
28	2 Samuel 15:13–37	104	22	18	7	11	58	46	0.38	0.31	0.12	0.19
29	2 Samuel 23:8–39	52	25	2	15	0	42	10	0.60	0.05	0.36	0.00
30	1 Kings 1:1–2:12	256	84	44	50	23	201	55	0.42	0.22	0.25	0.11
31	1 Kings 6	79	30	4	20	3	57	22	0.53	0.07	0.35	0.05
32	1 Kings 10:14–29	35	12	5	4	0	21	14	0.57	0.24	0.19	0.00
33	1 Kings 15:25–16:20	93	32	2	32	1	67	26	0.48	0.03	0.48	0.01
34	1 Kings 17	97	42	9	13	9	73	24	0.58	0.12	0.18	0.12
35	2 Kings 16	66	34	3	16	0	53	13	0.64	0.06	0.30	0.00
36	2 Kings 17	165	66	18	49	0	133	32	0.50	0.14	0.37	0.00
37	1 Kings 21	94	27	6	33	10	76	18	0.36	0.08	0.43	0.13
38	2 Kings 25	78	35	2	25	3	65	13	0.54	0.03	0.38	0.05
39	2 Kings 13	99	52	3	27	1	83	16	0.63	0.04	0.33	0.01
40	2 Samuel 24	108	47	13	14	2	76	32	0.62	0.17	0.18	0.03
41	1 Kings 22:29–50	69	24	2	23	0	49	20	0.49	0.04	0.47	0.00

Table B3. Finite verb counts for narrative: Latter Prophets

	Text	Verb Counts					[ ]/Total Finite Verbs					
		Total Verbs	Preterites	Imperfects	Perfects	Waw-Perfects	Total Finite Verbs	Total Non-Finite Verbs	Preterites	Imperfects	Perfects	Waw-Perfects
42	Jeremiah 32:1–15	55	13	9	7	3	32	23	0.41	0.28	0.22	0.09
43	Jeremiah 52 (same event reported in 2 Kings 25)	75	32	3	27	2	64	11	0.50	0.05	0.42	0.03
44	Amos 10–15	23	6	5	2	0	13	10	0.46	0.38	0.15	0.00
45	Jeremiah 26	104	27	12	21	4	64	40	0.42	0.19	0.33	0.06

Table B4. Finite verb counts for narrative: Writings

	Text	Verb Counts					[ ]/Total Finite Verbs					
		Total Verbs	Preterites	Imperfects	Perfects	Waw-Perfects	Total Finite Verbs	Total Non-Finite Verbs	Preterites	Imperfects	Perfects	Waw-Perfects
46	1 Chronicles 10	62	35	1	12	1	49	13	0.71	0.02	0.24	0.02
47	1 Chronicles 11:1–9	29	14	5	1	0	20	9	0.70	0.25	0.05	0.00
48	1 Chronicles 12	66	9	6	14	0	29	37	0.31	0.21	0.48	0.00
49	2 Chronicles 13	66	30	2	15	1	48	18	0.63	0.04	0.31	0.02
50	2 Chronicles 16	53	21	1	13	0	35	18	0.60	0.03	0.37	0.00
51	2 Chronicles 18:1–27	122	42	25	12	4	83	39	0.51	0.30	0.14	0.05
52	2 Chronicles 21	61	27	2	20	0	49	12	0.55	0.04	0.41	0.00
53	2 Chronicles 23:16–24:27	127	58	9	32	1	100	27	0.58	0.09	0.32	0.01
54	2 Chronicles 31	60	18	2	11	0	31	29	0.58	0.06	0.35	0.00
55	2 Chronicles 36:1–21	67	26	0	21	0	47	20	0.55	0.00	0.45	0.00
56	2 Chronicles 12	61	18	4	21	3	46	15	0.39	0.09	0.46	0.07
57	2 Chronicles 26–27	106	40	0	29	0	69	37	0.58	0.00	0.42	0.00
58	Exodus 14	116	48	17	14	5	84	32	0.57	0.20	0.17	0.06
59	Judges 4	96	44	9	12	9	74	22	0.59	0.12	0.16	0.12
60	Genesis 1:1–2:3	111	55	14	13	2	84	27	0.65	0.17	0.15	0.02
61	The Flood	250	94	34	51	18	197	53	0.48	0.17	0.26	0.09

Table B5. Finite verb counts for poetry: Torah

	Text	Verb Counts					[ ]/Total Finite Verbs					
		Total Verbs	Preterites	Imperfects	Perfects	Waw-Perfects	Total Finite Verbs	Total Non-Finite Verbs	Preterites	Imperfects	Perfects	Waw-Perfects
1	Genesis 49:2–27	64	8	22	15	0	45	19	0.18	0.49	0.33	0.00
2	Numbers 23:7–10	18	2	9	3	0	14	4	0.14	0.64	0.21	0.00
3	Numbers 24:3–9	23	2	8	5	0	15	8	0.13	0.53	0.33	0.00
4	Genesis 2:23, etc.	41	2	21	7	1	31	10	0.06	0.68	0.23	0.03
5	Deuteronomy 32	155	20	66	27	4	117	38	0.17	0.56	0.23	0.03

Each table is structured as follows: column 1 is the text number; column 2 lists the texts; columns 3–9 are the verb counts for each text (column 3—total verbs, column 4—preterites, column 5—imperfects, column 6—perfects, column 7—waw-perfects, column 8—total finite

Table B6. Finite verb counts for poetry: Former Prophets

	Text	Verb Counts					[ ]/Total Finite Verbs					
		Total Verbs	Preterites	Imperfects	Perfects	Waw-Perfects	Total Finite Verbs	Total Non-Finite Verbs	Preterites	Imperfects	Perfects	Waw-Perfects
6	1 Samuel 15:22–23	7	2	0	1	0	3	4	0.67	0.00	0.33	0.00
7	2 Samuel 1:19–27; 3:33b–34	30	4	6	12	0	22	8	0.18	0.27	0.55	0.00
8	2 Samuel 23:1b–7	17	0	6	5	0	11	6	0.00	0.55	0.45	0.00
9	Judges 14:14b	6	1	0	3	0	4	2	0.25	0.00	0.75	0.00
10	2 Kings 19:20b–28	42	4	4	23	2	33	9	0.12	0.12	0.70	0.06

Table B7. Finite verb counts for poetry: Latter Prophets

	Text	Verb Counts					[ ]/Total Finite Verbs					
		Total Verbs	Preterites	Imperfects	Perfects	Waw-Perfects	Total Finite Verbs	Total Non-Finite Verbs	Preterites	Imperfects	Perfects	Waw-Perfects
11	Isaiah 11:1–9, 12–12:6	66	1	21	5	20	47	19	0.02	0.45	0.11	0.43
12	Isaiah 21:1–15	65	3	4	19	2	28	37	0.11	0.14	0.68	0.07
13	Isaiah 29:1–24	111	6	23	16	26	71	40	0.08	0.32	0.23	0.37
14	Isaiah 30:1–18	70	3	21	10	2	36	34	0.08	0.58	0.28	0.06
15	Isaiah 37:22b–29	37	2	4	20	3	29	8	0.07	0.14	0.69	0.10
16	Isaiah 41:1–29	120	5	67	21	0	93	27	0.05	0.72	0.23	0.00
17	Isaiah 60:1–22	80	0	37	7	16	60	20	0.00	0.62	0.12	0.27
18	Isaiah 65:1–25	109	1	41	24	16	82	27	0.01	0.50	0.29	0.20
19	Isaiah 66:1–16, 22–23	83	2	25	18	11	56	27	0.04	0.45	0.32	0.20
20	Jeremiah 4:5–8, 13–18	42	1	6	9	0	16	26	0.06	0.38	0.56	0.00
21	Jeremiah 4:19–31	53	0	16	22	1	39	14	0.00	0.41	0.56	0.03
22	Jeremiah 10:2b–25	69	3	21	21	1	46	23	0.07	0.46	0.46	0.02
23	Jeremiah 12:1–13	55	1	12	27	1	41	14	0.02	0.29	0.66	0.02
24	Jeremiah 20:7–18	60	4	15	18	5	42	18	0.10	0.36	0.43	0.12
25	Jeremiah 21:12b–14; 22:6b–7, 10; 13–17, 18b–23, 28–30	88	0	20	18	10	48	40	0.00	0.42	0.38	0.21
26	Jeremiah 31:2–22, 23b, 29b, 35–37	116	2	27	30	15	74	42	0.03	0.36	0.41	0.20
27	Jeremiah 46:3–28	105	2	24	31	8	65	40	0.03	0.37	0.48	0.12
28	Jeremiah 47:2–7; 48:1b–20, 28–33, 40–47	145	1	27	50	13	91	54	0.01	0.30	0.55	0.14
29	Jeremiah 50:2, 11–16, 21–27, 31–32, 35–38, 41–43	93	2	19	28	10	59	34	0.03	0.32	0.47	0.17
30	Jeremiah 51:25–58	131	3	29	36	21	89	42	0.03	0.33	0.40	0.24
31	Ezekiel 19:2b–14	50	20	2	20	1	43	7	0.47	0.05	0.47	0.02
32	Micah 3:1–5:15	152	1	48	20	44	113	39	0.01	0.42	0.18	0.39
33	Nahum 1:2–15	47	2	13	15	0	30	17	0.07	0.43	0.50	0.00
34	Isaiah 18:1–19:15	74	0	18	14	17	49	25	0.00	0.37	0.29	0.35
35	Isaiah 50:1–51:23	162	8	50	41	2	101	61	0.08	0.50	0.41	0.02
36	Isaiah 44:1–8, 21–28	68	0	27	13	1	41	27	0.00	0.66	0.32	0.02

Table B8. Finite verb counts for poetry: Writings

	Text	Verb Counts					[ ]/Total Finite Verbs					
		Total Verbs	Preterites	Imperfects	Perfects	Waw-Perfects	Total Finite Verbs	Total Non-Finite Verbs	Preterites	Imperfects	Perfects	Waw-Perfects
37	Job:16–17	81	7	45	22	0	74	7	0.09	0.61	0.30	0.00
38	Job 19	73	9	32	24	0	65	8	0.14	0.49	0.37	0.00
39	Job 23–24	107	4	60	31	2	97	10	0.04	0.62	0.32	0.02
40	Job 25	8	0	4	1	0	5	3	0.00	0.80	0.20	0.00
41	Job 38:2–40:2	158	8	91	35	0	134	24	0.06	0.68	0.26	0.00
42	Psalms [David: Mizmor: Praise]	446	7	196	113	4	320	126	0.02	0.61	0.35	0.01
43	Psalms [David: Tephillah]	40	0	12	7	0	19	21	0.00	0.63	0.37	0.00
44	Psalms [David: Shir, Mizmor: Lament]	99	0	29	31	0	60	39	0.00	0.48	0.52	0.00
45	Psalms [David: Maskil: Lament]	106	4	39	29	0	72	34	0.06	0.54	0.40	0.00
46	Psalms [David: Tehillah]	37	0	23	0	0	23	14	0.00	1.00	0.00	0.00
47	Psalms [David: NDIS: Lament]	318	11	109	63	4	187	131	0.06	0.58	0.34	0.02
48	Psalms [Sons of Korah: Mizmor, Song, Maskil]	45	0	11	22	0	33	12	0.00	0.33	0.67	0.00
49	Psalms [Asaph: Maskil: Lament]	55	0	13	23	0	36	19	0.00	0.36	0.64	0.00
50	Psalms [Asaph: NDIS: Wisdom]	38	3	16	6	0	25	13	0.12	0.64	0.24	0.00
51	Psalms [Solomon: Praise]	42	0	32	1	0	33	9	0.00	0.97	0.03	0.00
52	Psalms [Anonymous: Mizmor]	21	0	4	6	0	10	11	0.00	0.40	0.60	0.00
53	Psalms [Anonymous: Mizmor, Todah]	8	0	0	1	0	1	7	0.00	0.00	1.00	0.00
54	Proverbs 1:20–33	39	2	21	8	1	32	7	0.06	0.66	0.25	0.03
55	Proverbs 2:1–11	20	0	16	0	1	17	3	0.00	0.94	0.00	0.06
56	Proverbs 4:1–27	72	2	30	6	1	39	33	0.05	0.77	0.15	0.03
57	Lamentations 3	120	11	36	55	1	103	17	0.11	0.35	0.53	0.01
58	2 Chronicles 6:41–42	5	0	3	0	0	3	2	0.00	1.00	0.00	0.00
59	Solomon [Wisdom]	16	0	5	3	0	8	8	0.00	0.63	0.38	0.00
60	Job 4–5	112	6	55	17	4	82	30	0.07	0.67	0.21	0.05
62	Exodus 15:1–18	64	2	25	23	0	50	14	0.04	0.50	0.46	0.00
63	Judges 5	103	3	17	45	0	65	38	0.05	0.26	0.69	0.00
64	Psalm 104	84	1	48	13	0	62	22	0.02	0.77	0.21	0.00
65	Psalm 105; 106	207	77	17	49	1	144	63	0.53	0.12	0.34	0.01

verbs [sum of columns 4–7], column 9—total non-finite verbs); and columns 10–13 are the relative frequencies of each finite verb type with respect to the total number of finite verbs (column 10—of preterites [bright green highlight for narrative; dark orange for poetry], column

11—of imperfects, column 12—of perfects, and column 13—of waw-perfects). The texts marked in pale yellow are the extra texts analyzed to account for any non-compliance with the conditions of the statistical tests (sample size, etc.) in the primary texts.

Appendix C: Details of Statistical Analysis

C.1 Logistic Regression Model Summary Statistics—Weighted

Table C1. Parameter estimation section

Variable	Regression Coefficient	Standard Error	Chi-Square β=0	Probability Level	Last R^2
Intercept	-5.685615	0.1806291	990.79	0.000000	0.131845
X_1	24.72761	0.8122928	926.70	0.000000	0.124378

Table C2. Model summary section

R^2	Degrees of Freedom	Chi-Square	Probability
0.550457	1	7988.52	0.000000

C.2 Goodness of Fit Calculations

To determine the goodness of fit of our model, the null hypothesis that our model did not fit the data any better than the model with all the coefficients equal to 0 was tested by calculating the model chi-square statistic, G_M, as follows:

$$G_M = -2[\mathrm{LL}(A) - \mathrm{LL}(A, B_1)] \tag{C1}$$

where LL(A) is the log likelihood for the zero coefficients model and LL(A, B_1) is the log likelihood for our model. For our model this statistic follows a chi-square distribution with 1 degree of freedom.

The model chi-square of our model is 7988.52, with 1 degree of freedom. We rejected therefore this null hypothesis at the extremely significant level of $p < 0.0001$.

The rejection of this null hypothesis at such an extremely significant statistical level means that our model fits the data better than a zero

coefficients model at a very high level of probability. But it is possible that even an extremely statistically significant model may not be substantively significant, because large sample size could inflate the model chi-square statistic. It is necessary, therefore, to calculate our model's *substantive* significance.

According to *Menard* [2002, pp. 24–27] the question is: how much does our model reduce the proportional reduction in the absolute value of the log likelihood measure in comparison with the zero coefficients model? This is R_L^2, which is defined as G_M/D_o, where both G_M and D_o depend on the model.

For our model, $D_o = 9042.753$. Thus, $R_L^2 = 0.8834$. This corresponds to an 88.34% variation reduction.

C.3 Correlation Analysis of Preterites with Waw-Perfects

A graphic picture of the negative correlation is seen in Figure C1, in which the coordinates of each green oval are the relative frequencies of preterites and waw-perfects for each narrative text as follows: the *x*-coordinate is the relative frequency of preterites, and the *y*-coordinate is the relative frequency of waw-perfects. The oval the farthest to the left represents Exodus 33.

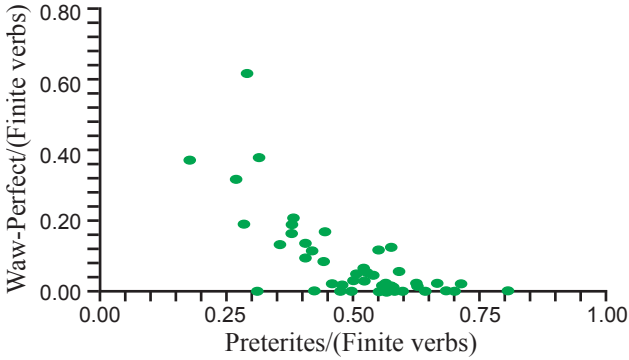

Figure C1. Scatter plot with preterites/(finite verbs) on the *x*-axis and waw-perfects/(finite verbs) on the *y*-axis, which shows the negative correlation of these verb frequencies in narrative. The oval farthest to the left represents Exodus 33.

Appendix D: Historiographical Tables

Table D1. Retrospections on the past

Portion of Canon	Texts
Torah	Deuteronomy 1:6—3:29
Former Prophets	Judges 1:1–3:6; 1 Samuel 12:7–11; 2 Samuel 11:19–21[a]; 2 Kings 17:7–18
Latter Prophets	Jeremiah 2:2–13; 7[b]; Ezekiel 16; 20; 23
Writings	Psalms 105[c] and 106; Daniel 9; and Nehemiah 9:6–35

[a] This retrospection is in a narrative clearly not driven by aetiological concerns. Joab anticipated that David might question his judgment in sending his troops so close to the wall of Rabbah, and might remind him that Abimelek had died at the hands of a woman because he had stood too close to a wall (an incident, which is recorded in Judges 9:52–54).

[b] This is Jeremiah's Temple Speech, in which he excoriated rather than extolled the people, disabusing them of the false notion that the presence of the temple ensured the inviolability of Jerusalem by reminding them what had happened to the holy sanctuary at Shiloh because of their ancestors' sins.

[c] Psalms 105:5–10 the nation was commanded more than a millennium after the patriarchs lived, "Remember His miraculous works, which He did, and His wonders and the judgments of His mouth, seed of Abraham, His servant, sons of Jacob, His chosen ones. He is YHWH our God. His judgments are in all the earth. He remembered His covenant in perpetuity, commanded a word for a thousand generations, which He cut with Abraham, His oath to Isaac, caused it to stand as a statute for Jacob, for Israel a perpetual covenant: 'To you I will give the land of as the territory of your inheritance.'" Following this is an historical review from the Patriarchal Period until the Exodus. This review is largely positive in nature. Not so the retrospect in Psalm 106, which stresses the unfaithfulness of Israel in stark contrast to the continued faithfulness of YHWH, starting with the Exodus and ending with the exile.

Table D2. Origins of names and sayings

Categories	Texts
Origins of names (general)	Genesis 4:17; 11:9; 19:22; 25:30; 26:26–33; 28:17–19[a]; 33:17; Deuteronomy 3:14; Judges 10:4; Joshua 5:9; 7:26; Judges 1:26; 6:24; 15:19; 18:12; 2 Samuel 6:8; 1 Chronicles 13:11; 2 Samuel 18:18; 1 Kings 9:13; 2 Kings 14:7
Naming in Numbers[b]	Taberah "burning" (11:1–3), Qibrot Hattaavah "graves of craving" (11:4–34), Meribah "place of the contention" (20:1–13) and Hormah[c] "destruction" (21:1–3)
Renaming foretold	Isaiah 62:14 (2×); Jeremiah 7:32
Origins of sayings[d]	Genesis 10:9; 22:14; Numbers 21:13–15[e]; 1 Samuel 9:9; Jeremiah 16:14

[a] This story does not have the usual עַל כֵּן, "therefore" which identifies this category.
[b] The first is in Numbers 11:1–3, a brief account of the first time after Sinai that the people complained to YHWH, which gives us the sequence for all such episodes recorded in the book: the people came to a place, which had the name to be explained; they grumbled, murmured or even rebelled against Moses because of some perceived deprivation (usually food or water); YHWH heard their complaining and swiftly sent judgment; they cried out; Moses interceded to YHWH on their behalf; the judgment desisted; and the place was named so as to remind people what had happened there.
[c] Hormah is mentioned before the account of its naming, as the site of an Israelite defeat following the rebellion at Kadesh Barnea (Numbers 14:4–45). Its actual naming happened near the end of the wilderness years—nearly forty years later.
[d] These were identified by the phrase "it is said" (יֹאמַר or יֹאמֵר).
[e] In this case the author traced back a phrase from the Book of the Wars of YHWH—an apparently extant source in the author's day, otherwise why would he even have mentioned it—to the locations in which Israel had camped.

Table D3. Historical footnotes.

Categories	Texts
Information about persons, apparently irrelevant to the plot of the story: information about the former inhabitants of regions and even more remote, what peoples outside of Israel called other people.	1 Chronicles 4:40–43; Deuteronomy 2:9–23; 2 Samuel 4:3
Former place names. The author gives us former names of places or former status.[a] The author supplied his readers with this information, which he did not expect them to know. This implies that these locations did not have these names or statuses in the author's day. Usually, the author employed, in his narrative, the current name known to his readers, but felt compelled for some reason to give the old name as well. On other occasions, an author used the older name in his narrative and put the more recent name in—as it were—a footnote.	Hazor was formerly the capital city of the kingdoms, which Joshua defeated in his northern campaign (Joshua 11:10). Hebron was formerly called Qiryat Arba (Joshua 14:15; Judges 1:10). The old name of Debir was Qiryat Sepher (Joshua 15:15; Judges 1:11). The previous name of Bethel was Luz (Genesis 28:19; Judges 1:23). Laish was the former name of the city of Dan (Judges 18:29). Finally, "Sarah died in Qiryat Arba (it is Hebron) in the Land of Canaan" (Genesis 23:2)
Miscellaneous. Sometimes the *raison d'être* for the note is evident, but other times the connection is not so clear.	We are told of the words of a song sung in the wilderness when water was discovered (Numbers 21:17–18).[b] We are informed of the lyrics of Heshbon's previous victory chant over the Moabites (Numbers 21:26–30). Arcane information is supplied in 1 Chronicles 4:21–23

[a] The key to finding these is the term לְפָנִים "formerly."
[b] Why is this information given to us? It does not move the narrative forward nor is it necessary information to understand the narrative. It is just an historical footnote attesting to the eyewitness account of the events.

Table D4. Sources cited.

Sources	Texts
Unknown[a]	Exodus 17:14
The Book of the Torah	Deuteronomy 28:61
The Book of the Wars of YHWH	Numbers 21:14
The Book of Yasher[b]	Joshua 10:13; 2 Samuel 1:18
The Book of the Words of Solomon	1 Kings 11:41
The Book of the Chronicles of the Kings of Israel[c]	1 Kings 14:19; 15:31; 16:5, 14, 20, 27; 22:39; 2 Kings 1:18; 10:34; 13:8, 12; 14:15, 28; 15:11, 15, 21, 26, 31: 2 Chronicles 33:18
The Book of the Chronicles of the Kings of Judah[d]	1 Kings 14:29; 15:7, 15:23; 22:45; 2 Kings 8:23; 12:19; 14:18; 15:6, 36; 16:19; 20:20; 21:17, 25; 23:28; 24:5
The Book of the Kings of Judah and Israel[e]	2 Chronicles 16:11; 25:26; 28:26; 32:32
The Chronicles of David the King	1 Chronicles 27:24
The Chronicles of Samuel the Seer	1 Chronicles 29:29
The Chronicles of Nathan the Prophet	1 Chronicles 29:29
The Chronicles of Gad the Seer	1 Chronicles 29:29
The History of Nathan the Prophet	2 Chronicles 9:29
The Prophecy of Ahijah the Shilonite	2 Chronicles 9:29
The Visions of Iddo the Seer	2 Chronicles 9:29
The Chronicles of Shemaiah the Prophet and Iddo the Seer	2 Chronicles 12:15
The Chronicles of Jehu, the son of Hanani	(2 Chronicles 20:34)[f]

[a] Amalek's atrocity against Israel was to be recorded in a book (unnamed) (Exodus 17:14).

[b] In this context "Yasher" יָשָׁר "upright" or "straight," refers to either the heroes of the nation or a strict chronological account, respectively. Or it might refer to both.

[c] The Book of the Chronicles of the Kings of Israel cannot be the canonical Book of Chronicles (C) for four reasons: (1) Because it was a source for The Book of Kings, it must antedate that book, which is known to antedate the Book of Chronicles. C can be dated both linguistically and in terms of its content. The Hebrew of C is known as Late Biblical Hebrew (LBH). Its grammar, vocabulary and orthography is markedly different from earlier Hebrew. (2) Its content demands a late date. Statements referring to the exile as being in the past appear in C (1 Chronicles 9:1) and the decree of Cyrus to repatriate the nation appears in C; thus, making it late. (3) C cites the Book of the Chronicles of the Kings of Israel as a source in 2 Chronicles 33:18. So they cannot be the same book. (4) The author of C (Ezra, according to Baba Bathra 14b, but his identity does not affect the following argument) had a particular perspective of the monarchy *vis-à-vis* that of Samuel and Kings: temple instead of throne and priest instead of prophet. Consequently, because of its aberrant worship of the Northern Kingdom, he almost entirely excluded its history from his account. As a result it could not have served as the source of Kings.

[d] The Book of the Chronicles of the Kings of Judah cannot be the canonical Book of Chronicles (C) for some of the same reasons that The Book of the Chronicles of the Kings of Israel cannot be C. See reasons (1) and (2) in note c above.

[e] This is the canonical Book of Kings, which the Book of Chronicles uses as a source. Thrice "Judah" and "Israel" are reversed (2 Chronicles 27:7; 35:27; 36:8). Two times it is cited as the Book of the Kings of Israel (1 Chronicles 9:1; 20:34). And once as the Book of Kings (2 Chronicles 24:27).

[f] This text records the interesting detail that this chronicle has been incorporated into the Book of Kings.

Table D5. Chronological reference points.

Reference Point	Correlation	Texts
Age of antediluvians	Birth of sons	Genesis 4; 5; 11
Year of Noah's life	Beginning and end of the Flood	Genesis 7:6, 11; 8:13–14
Narrator mentions age of Abraham; Isaac; Joseph; Moses, Aaron; Joshua, Caleb; Eli; Ishbosheth; Mephibosheth; David; Barzillai and Hezron	Various significant events	Genesis 12:4, 16:16, 17:1, 24; 21:5, 25:20, 26; 37:2; 41:46; Exodus 7:7; Joshua 24:29; Judges 2:8; 1 Samuel 4:15; 2 Samuel 2:10; 4:4; 5:4; 19:33; 1 Chronicles 2:21
Own age mentioned: Abraham (he also mentions Sarah's)	Impossibility of Sarah and him having a child	Genesis 17:17
Jacob	As reply to Pharaoh's query	Genesis 47:8–10
Moses	Transfer of leadership to Joshua	Deuteronomy 31:2
Caleb	Ages when he spied out the land and conquered his territory	Joshua 14:7, 10
Barzillai	His speech to David	2 Samuel 19:36
The date of the Exodus[a]	The death of Aaron; Temple building begun	Numbers 33:38; 1 Kings 6:1
The death of Uzziah	Isaiah's vision of YHWH	Isaiah 6:1
The days of Ahaz	Rezin and Pekah's attack on Jerusalem	Isaiah 7:1
The death of Ahaz	An oracle concerning Philistia	Isaiah 14:28
Sennacherib's attack on Ashdod	YHWH's instructions to Isaiah	Isaiah 20:1
Fourteenth year of Hezekiah's reign	Sennacherib's invasion of Judah	Isaiah 36:1
Jehoiachin's exile to Babylon	Ezekiel's vision of God's glory	Ezekiel 1:1–3
	call be a watchman	Ezekiel 3:16
	corruption at the Temple vision	Ezekiel 8:1
	discourse with elders	Ezekiel 20:1
	second siege of Jerusalem	Ezekiel 24:1
	judgment pronounced on Tyre	Ezekiel 26:1
	Fall of Jerusalem	Ezekiel 33:21
	the new temple vision	Ezekiel 40:1
	six prophecies concerning Egypt	Ezekiel 29:1, 17; 30:20; 31:1; 32:1, 17; 33:21
The second year of Darius I of Persia (521–486 BC)	Haggai's first message (1st day of the sixth month)[b]	Haggai 1:1
	Haggai's second message (24th day of the sixth month)	Haggai 1:15
	Haggai's third message (21st day of the seventh month)	Haggai 2:1
	Haggai's fourth message (24th day of the ninth month)	Haggai 2:10, 20
Age at death	The antediluvians; Terah; Sarah; Abraham Ishmael; Isaac; Joseph; Aaron; Moses and Jehoiadah	Genesis 5; 11:32; 23:1; 25:8; 25:17; 35:28; 50:26; Numbers 33:39; Deuteronomy 34:7; 2 Chronicles 24:15

Table D5. (continued)

Reference Point	Correlation	Texts
Reigns of kings during the divided monarchy	With his counterpart in the other kingdom[c] Prophets ministry: Isaiah to Uzziah, Jotham, Ahaz and Hezekiah; Hosea to Israel in this same time period; Micah to Judah; Jeremiah from the thirteenth year of Josiah's reign until the end of the eleventh year of Zedekiah, which was in the fifth month; Zephaniah to Josiah; Amos to Uzziah and Jeroboam II	Isaiah 1:1, 7:1; Hosea 1:1; Micah 1:1; Jeremiah 1:2–3; Zephaniah 1:1; Amos 1:1
The end of the Flood	Lifespan of Noah; nations dispersed; birth of sons;	Genesis 9:28; 10:1, 32; 11:10
Earthquake	The commencement of Amos' ministry	Amos 1:1

[a] "At the end of 430 years, on that very day, all the armies of YHWH came out of the land of Egypt (Exodus 12:41)."

[b] Haggai preached his messages in a fifteen week period, during the second year of Darius I of Persia (521–486 BC). Each message is precisely dated to the day, month and year of Darius's reign.

[c] Synchronisms between the kings of Judah and Israel are given for every king of the divided kingdom. Kings of Judah began their reign in a certain year of the continuing reign of the King of Israel and vice-versa. For example, Asa of Judah began to reign over Judah during the twentieth year of Jeroboam's reign over Israel (1 Kings 15:8). Similarly, Baasha of Israel began his reign over Israel in the twenty-third year of Asa's reign over Judah. Also the age at succession is given.

Table D6. Function of genealogies.

Relationship to History	Examples	Texts
Structure	Antediluvians[a]	Genesis 4–5; 11
	The Flood; patriarchal narratives[b]	Genesis 6–9; 12–50; Ruth 4:18[c]
Survey	Narrative has commentary roled	1 Chronicles 1–9[d]
Support[e]	Esau[f]	
	Aaron	
	Perez[g]	Genesis 49:10; Ruth 4:18
	Ezra[h]	Ezra 7:1–10

[a] Mini-narratives are imbedded in these genealogies, with the result that each genealogical report is a comment on history. The reports on Adam, Enoch, Lamech, and Noah stand out because they depart from the formulaic elements found in the other reports. For instance, Noah's report includes the entire Flood account and its aftermath before it closes with the formulaic account of his death (9:29). The first nine verses in chapter 11 are a flash back, explaining how the different languages emerged. This is followed by the genealogy of Shem, in which the longevity of the men in the list is considerably reduced from those of chapter 5 and the ominous words, "and he died" are missing.

[b] Although the toledot provide the structure, the narratives are the main thing. In chapters twelve through to thirty-five a sequence of chapter-length narratives encapsulates the life of each of the Patriarchs. Chapters thirty-seven through to fifty are altogether different, which tell one story: the unfolding of YHWH's sovereign plan to remove the family of Jacob from the corrupting influence of the Canaanites and ensconce them in Egypt and to cause Joseph and Judah to emerge as leaders of the family transitioning to nationhood.

[c] Not only does the presence of genealogies structure history but so also their absence and atavistic re-emergence. A case in point is the recrudescence of the phrase וְאֵלֶּה תוֹלְדוֹת "these are the generations" in Ruth 4:18 as a continuation of the genealogy of the Patriarchs. Curiously, the link is made back to the Patriarchs with no mention of the Egyptian hiatus. The latter is treated as an historical parenthesis; not part of the Patriarchal promises trajectory. But with the people back in the Land, the path to fulfillment of the promises YHWH made to the Patriarchs is again made clear.

[d] The Book of Chronicles begins with the barest of lists, only names, matching those in Genesis 5 but stripped of even the schematized formula of that chapter. Segmented genealogies of Japheth, Ham, and Shem follow. Then the bald list resumes, concluding with Abraham and his first two sons, but in reverse order: Isaac then Ishmael. Introduced by אֵלֶּה תֹלְדוֹתָם "these are their generations" (similar to Genesis 25:19), a segmented genealogy of Ishmael is given. The progeny of Abraham's third wife—called here his concubine—is given without the introductory אֵלֶּה תוֹלְדוֹת. These thirty-three verses sweep through thousands of years of history. In contrast, the chronicler devoted twenty chapters (1 Chronicles 10–29) to the forty and one-half years of the reign of David!

[e] Infrequently, a genealogy precedes the unfolding of an account. The brief genealogy in Genesis 22:20–23 serves to enigmatically introduce the one whom Isaac will marry. But most often genealogies follow rather than adumbrate words or deeds.

[f] The genealogy of Esau, whose descendants were kings before Jacob's (36:31), showed that YHWH was already fulfilling his promise to Abraham that kings would come from him and Sarah (17:6, 16), because although Esau was rejected, he was still a descendant of Abraham. Another example of how genealogies comment on history is how the reporting of the chosen line (Isaac and Jacob) differs from the rejected lines (Ishmael and Esau): the former is presented in a linear genealogy (only one descendant indicated per generation); the latter—in a truncated segmented genealogy (siblings are listed). Also, the genealogy of the one rejected always precedes that of the one chosen.

[g] This genealogy, found at the end of the Ruth, establishes the legitimacy of the reign of David, at least as far as his lineage was concerned. Just before his death, Jacob pronounced the following somewhat enigmatic but nevertheless quite significant words concerning Judah's destiny, "the scepter shall not depart from Judah nor a lawgiver from between his feet until Shiloh comes (Genesis 49:10)." It meant that the monarchy would eventually immovably lodge in the tribe of Judah. In other words, kings of Israel eventually would only come from Judah. The passage in Ruth 4:18 linked David to Judah through Perez.

[h] The reality of the exile and the first return, in which the temple was rebuilt, made it imperative that the religious pedigrees of the leaders of subsequent repatriations be clearly stated. Ezra did so, tracing his line back to Aaron. Thereby, Ezra proved to his people that he could lead them in worship and, in no uncertain terms, asserted his God-given authority to demand their obedience to his dictates.

Table D7. Commemorative days and feasts.

Memorial Aspects	Passover/Unleavened Bread	Weeks	Booths/Ingathering
At its inauguration[a]	Exodus 12:14		
Practiced in perpetuity[b]	Exodus 12:17, 24–25, 42		Leviticus 23:41
Catechetical purpose	Exodus 12:26–27[c]		Leviticus 23:43[d]
Enshrined in the Law[e]	Exodus 23:14–17; 34:18; Leviticus 23:4–8; Numbers 28:16–29:40; Deuteronomy 16:1–17	Exodus 23:16; 34:22; Leviticus 23:15–21; Deuteronomy 16:10	Exodus 34:22; Leviticus 23:34–42; Deuteronomy16:12–15
Penalty for disobedience	Numbers 9:13		
Provisions for impurity	Numbers 9:6–12[f]; 2 Chronicles 30:17–20[g]		
Historical attestations	Numbers 9:5; Joshua 5:10–11; 2 Chronicles 30:1–27; 2 Kings 23:21–23; Ezra 6:19–22		Ezra 3:4

[a] The feasts of Passover/Unleavened Bread and Booths were called זִכָּרוֹן "memorial" at their inception. In fact the Passover service was instituted before YHWH's historical act of striking the Egyptian firstborn.
[b] So that the people would never forget.
[c] For both them and their progeny (both "sons" and "generations" occur). Also they were commanded to explain the significance of the Passover service when their sons would ask.
[d] "… in order that your generations may know …"
[e] Three times a year all men were required to come the feasts (Exodus 23:14, 17; 34:23–34; Deuteronomy 16:16; 1 Kings. 9:25; 2 Chronicles 8:13).
[f] The celebration of these was deemed so essential that provision was made for celebrating them one month later if compromise in ritual purity precluded their timely celebration.
[g] Hezekiah's Passover was a second-month Passover. There were some who were still ritually impure at this time. But a special dispensation was made for them to celebrate anyway without any negative repercussions.

Table D8. Temporal continuity.

Claim	Texts
Unprecedented phenomenon of the fiery hail to come[a]	Exodus 9:18
The severity of the locust plague to come	Exodus 10:6
Ai was still in ruins	Joshua 8:28
The corpse of its king was still buried under the same pile of rocks, which Joshua had heaped on him	Joshua 8:29
The Hivites were still a servant class of "hewers of wood" and "drawers of water" in Israel	Joshua 9:27
The Geshurites were still living among the Israelites as an unconquered, unassimilated people	Joshua 13:13
The Jebusites were still living among the Israelites[b]	Joshua 15:63
The Canaanites were living in Gezer among the Ephraimites as forced laborers	Joshua 16:10
The deposition of the Ark of the Covenant	1 Samuel 6:18
Ziklag still belonged to the kings of Judah[c]	1 Samuel 27:6
The Ark was placed in the temple, with its long axis in line with that of the temple's long axis[d]	1 Kings 8:8
Solomon had incorporated all foreign enclaves into a greater Israel	1 Kings 9:20–21
Israel had seceded from Judah, forming the Northern Kingdom of Israel	1 Kings 12:19
Water miraculously purified by Elisha was still potable	2 Kings 2:22
Moab had broken away from Judah	2 Kings 8:22
Rezin, the king of Aram had forcibly removed the Judahites from Eilat and subsequently, the city had been occupied by the Edomites[e]	2 Kings 16:6

NOTE: A number of these have pointed out above under other rubrics. The most common phrase is עַד הַיּוֹם הַזֶּה "until this day." A special case of this class are those accounts which also include the phrase לְמִיּוֹם "since the day" or its equivalent, because it suggests an uninterrupted continuity; whereas, the more common "until this day," allows for a break in continuity as long as it was re-established by the author's time. As a result, the special case would be "easier" for a reader, who was a contemporary of the author, to falsify.

[a] In this and the next statement Moses claimed knowledge of Egyptian history.

[b] The Jebusite presence in what would become Jerusalem is also mentioned in Judges 1:21.

[c] The complicating factor in the Books of Samuel is the death of Samuel, reported in (1 Samuel 25:1). Following the chronology of the author of 1 Samuel, Samuel's death occurred before David sought refuge with the Philistines and was given Ziklag. Consequently, Samuel, could only have been the author of 1 Samuel up to chapter twenty-four. Tradition has suggested—and it is likely—that one of the royal prophets, Gad or Nathan, finished the book and authored 2 Samuel. Yet it is doubtful that either of these prophets would have penned the words that Ziklag belonged to the kings of Judah. This sounds like a statement made later, reflecting on the history of the Davidic dynasty.

[d] I deduce this because the text says that the Ark's poles were visible from the holy place not from the courtyard. Of course only priests could verify that the poles were visible when they were serving in the holy place. We are told that they were not visible from outside the holy place. Because the Inner Sanctum was a square, if the poles extended beyond the confines of the Inner Sanctum they had to protrude either to the sides—and thus would have been visible—but the text says they were not—or to the front and back—and thus been visible only to the priests—which they were. Assuming that the poles were parallel to the long axis of the Ark, implies then that the Ark was oriented in an east-west direction.

[e] The only difference in the readings is *daleth* versus *resh*. Since, in the history of the Hebrew language *daleth* has resembled *resh* in all periods, paleographical considerations cannot resolve the textual problem. Nevertheless, Edomites—rather than Arameans—is the preferred reading based upon the context, since the author described Tiglath Pileser III's destruction of Aram in the next paragraph in the text.

Endnotes

1. Of course this is a general *desideratum* for literature, as *Hirsch* [1976, p. 36] cogently argues: The probability that I am right in the way I educe implications depends upon my familiarity with the type of meaning I consider. That is the reason, of course, that the genre concept is so important in textual study. By classifying the text as belonging to a particular genre, the interpreter, automatically posits a general horizon for its meaning. The genre provides a sense of the whole, a notion of typical meaning components.
2. *Wendland*'s [1994] article, "Genre criticism and the Psalms," is a précis of his monograph, *Comparative Discourse Analysis and the Translation of Psalm 22 in Chichewa a Bantu Language of South-Central Africa* [1993].
3. In discussing the characteristics of historical narratives, *Sailhamer* [1992, pp. 12–14] emphasizes the reality of their portrayal of events. No less than eighteen times he refers to the word "real" and its cognates in his discussion of Biblical historical narrative. He uses the phrases "realistic manner," real world" [7×], "realistic picture," "mimic the real world," "reproduce the real world," "depictions of reality," "empirical reality," and "real life" [6×] to describe Biblical narratives.
4. I ran searches of the most basic morphological sequences according to the main categories in *BibleWorks 5.0*, involving verbs, nouns, pronouns, prepositions, articles, accusative markers, and other particles. Giving a different point of view, Dr. Andrew Bowling (in a private communication) maintains that some preterites in Genesis 1:1–2:3 have a summary function, which is somewhat rare for preterites.
5. Note the following quotes from *Archer* [1974, p. 181]:
   From a superficial reading of Genesis 1, the impression received is that the entire creative process took place in six twenty-four-hour days;
   and *Ross* [1999, p. 113]:
   The steady march of days, day one, day two, day three, etc.—strongly suggests a sequential, chronological account. The sanctification of the

seventh day, and its enshrinement in the Decalogue as rooted in the seven-day creation, only strengthens this impression.

6. *Bradley and Olsen* [1984, p. 287; emphasis mine] state:

   In the sections that follow, we shall assume Genesis 1 deals with real time-space events and seek to interpret the Genesis 1 account of origins in the most general way possible. The goal is to first define *the latitude of permissible interpretation* of the biblical account of origins.

   In a response to them, which supports their old earth understanding of Genesis 1:1–2:3, *Archer* [1984, p. 332] says:

   The realization that the six stages of Genesis 1 do not represent calendar days leaves the Christian geologist free to draw tentative conclusions from his data.

   Snoke [1998, pp. 5–8]states:

   [People] will say, 'But you have come up with this just because you want the Bible to agree with science.' I freely confess to this charge .... The question which lies before us is therefore, 'Is it ever legitimate to prefer a "possible" interpretation over a simpler, "obvious" interpretation, based on our experience?'.

   Ross [1999, pp. 113–114]says:

   Nevertheless, first impressions, and even considered second impressions, are not always accurate; reasons can arise which lead one to reject a seemingly obvious and well-supported view in favor of an alternative, perhaps a more subtle alternative.

7. *Archer* [1974, 1984], *Chisholm* [2003], and *Waltke* [2004] have all offered some or all of the three objections.

8. *Merrill* [2003, p. 78] comments about the historical dimension of the Old Testament:

   Its character as sacred history—a notion that must never be ignored—does not in anyway diminish its value as a source of 'ordinary' historical information.

9. This is *Archer*'s [1984, p. 329] concern. He maintains that reading Genesis 1:1–2:3 as if all the events occurred in one week would contradict Genesis 2:4ff.:

   Entirely apart from any findings of modern science or challenges of contemporary scientism, the twenty-four hour theory was never correct

and should never have been believed—except by those who are bent on proving the presence of genuine contradictions in Scripture.

10. The previous chapters in this book strongly militate against this bold assertion and the putative proofs of deep time. *Austin* [2005], *Chaffin* [2005], and *Snelling* [2005a, b, c] have successfully challenged the underlying assumptions of radiometric dating to the point of invalidating the procedure. And in addition, the findings by *Humphreys* [2005] on He retention in zircons, and the discovery by *Baumgardner* [2005] of ^{14}C in coals and diamonds, offer new alternative geochronometers, which yield dates of thousands rather than millions or billions of years.
11. *Speiser*'s [1964, p. 8] comments on Genesis 1 are typical of this group:

    What we have here is not primarily a description of events or a reflection of unique experience. Rather, we are given the barest sequence of facts resulting from the fiat of the supreme and absolute master of the universe.

    Sarna [1966, pp. 9–10], after discussing the Babylonian creation account, Enuma Elish, contrasts Genesis 1:1–2:3 to it and other extra-Biblical versions of Creation:

    Genesis is but a prologue of the historical drama that unfolds in the ensuing pages of the Bible.

    Furthermore:

    The outstanding peculiarity of the biblical account is the complete absence of mythology in the classic pagan sense of the term.

    Finally:

    Nowhere is the non-mythological outlook better illustrated than in the Genesis narrative. The Hebrew account is matchless in its solemn and majestic simplicity.
12. How to interpret texts is a major debate in literary circles. For a history of the discussion see *Weiss* [1984, pp. 1–73].
13. Originally published in *Sewanee Review 54* (summer 1946). *Wimsatt* [1976, p. 136] in his essay "Genesis: a fallacy revisited" emended this quote to:

    The design or intention of the author is neither available nor desirable

as a standard for judging *either the meaning or* the success of a work of literary art (emphasis mine).

The original essay, Wimsatt's second essay, *Hirsch*'s [1976] rejoinders, and clarifications on both sides of the debate are in *Newton-De Molina* [1976]; *Vanhoozer* [1998] shows how the post-Hirschian hermeneutics of Fish and Derrida have taken away the author, the text and the reader.

14. Pragmatics is a hermeneutical approach in which texts are treated as linguistic utterances, which were given in a particular context. *Winther-Nielsen* [2002] cites *Mey*'s [1993], *Schiffrin*'s [1994], *Green*'s [1996], and *Blum-Kulka*'s [1997] definitions of this discipline. He also explains how it evolved from the work of *Austin* [1975] and *Grice* [1957]. The former investigated how "*To do things with words"* and the latter studied how listeners interpret meaning in context. *Searle* [1969] built his speech act theory on these studies: words not only convey information (locutionary function), but also intend to motivate the listener to do something (the illocutionary function). *Mey* [1993] advanced two principles. Three emphases come out of this theoretical base: the determination of meaning in relation to the total context, an extention of grammar to the discourse level, and a consideration of the "collaboration in interaction" of speaker (author) and listener (reader). See the discussion in *Winther-Nielsen* [2002, pp. 53–58].
15. *Winther-Nielsen* [2002] discusses the two principles of pragmatics, which are advanced by *Mey* [1993]: the communication principle and the coherence principle, on pages 55–56. See the references he cites there. *Groom* [2003] lists and interacts with the "seven standards of textuality" proposed by *Beaugrande and Dressler* [1992]: cohesion (regular sentence level grammar, texts have to make sense), coherence (meaning is extracted from a text by an interaction of text with its context), intentionality (authors want to communicate to their readers and do it to the best of their ability), acceptability (the reader expects a text to be cohesive, coherent, is meant to tell him something and meant to motivate him to do something), informativity (a reader expects a text to contain a reasonable amount of new information),

situationality (a text is conveyed depending on the reading situation of its readers), and intertexuality (earlier texts, which are quoted or alluded to, inform the present text). For her discussion see *Groom* [2003, pp. 131–138].

16. Unlike Greek literature, in particular, Greek poetry, the Hebrews did not leave us a treatise on how to interpret their poetry.
17. *Winther-Nielsen* [2002, p. 61; note 33] critiques *Mey*'s [1993, p. 281] contention that "the ways textual and dialogical constraints are manipulated depend entirely on the contemporary conditions."
18. *Winther-Nielsen* [2002] is quoting *Gibbs* [1994].
19. *Sternberg*, in his magnum opus, *The Poetics of Biblical Narrative: Ideological Literature and the Drama of Reading* [1985], discusses three issues that are germane to this study: (1) that in the Bible there is a non-contradictory balance between its three characteristics: it is a literary masterpiece, it purports to be reporting historical events, and it is giving a clear ideological message; (2) that it is easy to under-read the Bible but almost impossible to counter-read the Bible. In other words, many times readers do not pick up all the subtleties of the text, but the theological message is clear; (3) the Biblical authors believed that they were writing real history. See Section 7 of the present study for an extended discussion of the historiographical aspects of the Old Testament.
20. See *Dotan*'s excellent foreword to *Biblica Hebraica Leningradensia* [2001, pp. vii–x], in which he discusses the relative merits of the two extant Ben Asher texts: The Aleppo Codex and the Leningrad Codex.
21. "Brick upon brick" refers to an arrangement of the lines of text, in which one line is divided into three textual blocks, the next line is divided into two blocks, the third line is divided into three again, and so forth down the page. The resulting page resembles a brick wall, with the blocks of text as the bricks and the spaces between the blocks as the mortar.
22. Perhaps it was meant to honor the authors of these texts, Moses, Samuel, and David. But in the final analysis the reason escapes us. We can conclude, however, that the copyists do not clearly evidence

poetic sensibilities.

23. *Kugel* [1981, p. 52] argues that parallelism is not the intention of the Biblical authors, but rather it is a seconding sequence: "Biblical lines are parallelistic not because B is meant to be a parallel of A, but because B typically supports A, carries it further, backs it up, completes it, goes beyond it."
24. Cited and translated by *Kugel* [1981, p. 83]. Emphasis is his, not *Alonzo-Schökel*'s.
25. *Cotter* [2003, p. xxix] comments that putative "structures" in narrative are often not the intention of the author of the text but are the creation of the interpreter.
26. In Genesis 1:1–2:3 the events that occurred on days four, five, and six correspond with those on days one, two, and three, respectively; thus, forming a bilateral structure as follows: days one and four concern light; days two and five concern the skies and the seas; and days three and six concern the dry land.
27. Genesis 1:27, a tricolon which marks the zenith of God's Creation, the Creation of man, contains a three-fold use of ברא, "create."
28. *Lichtenstein* [1984] examines the what, how, and why of Biblical Hebrew poetry, commencing with Moses' words to Aaron after YHWH immolated his sons and ending by disabusing us of the idea that poetry was Israel's most sublime medium only for expressing their most sublime thoughts. He points out that Lamech boasted to his wives of murdering a young man—certainly not a noble idea! Most instructive is his treatment of the poetic passages which follow narrative accounts of the same event.
29. The one paragraph definitions in *Wendland*'s [1993] chapter are considerably shortened from those in his monograph. In the latter he furnishes examples and provides extensive discussion of each category.
30. This term refers to the type of directional shifts in the communication nexus of the psalmist, the reader/listener and YHWH, such as are found in Psalm 23, in which the psalmist refers to YHWH in the third person in verses 1–3 (while talking to his reader/listener), in the second person in verses 4–5 (while the reader "listens in") and

back to the third person in verse 6 (he returns to talking to the reader about YHWH). In grammar, the change of persons is called enallage. In rhetoric, such diversion of speech is called apostrophe.

31. Adapted from *Brogan*'s [1993] discussion of sound and meaning; Brogan cites *Wimsatt* [1976] in this regard:

    Poetry approximates the sensuous condition of paint and music not by being less verbal, less characteristic of verbal expression, but actually by being more than usually verbal, by being hyper-verbal.

32. Jacobson's definitions of the poetic function are discussed by *Cotter* [1992, pp. 12–20].
33. I want to thank Kirk Lowery, the Director of the Hebrew Institute at Westminster Theological Seminary (East) and manager of the WTT (Westminster Theological Biblia Hebraica Stuttgartensia Hebrew Old Testament, fourth edition) and WTM (Westminster Theological Hebrew Old Testament Morphology) databases for his illuminating interaction with me on the characteristics of narrative and poetry. Standard treatments of Old Testament narratives abound: *Alter* [1981], *Berlin* [1983], *Sternberg* [1985], *Bar-Ephrat* [1989], and *Ska* [1990]. All have provided thoughtful treatments on the characteristics of Hebrew narrative; but *Sternberg*'s [1985] volume is magisterial. Fokkelman's works are listed in *Fokkelman* [1999]. *Gunn and Fewell* [1993] have an extensive bibliography on Hebrew narrative studies.
34. *Fokkelman* [1999, pp. 73–111] discusses the four characteristics of narrative suggested here under six headings: narrator, action, plot, quest, hero, and time and space. He further clarifies that hero is meant in a narratological sense, not necessarily in a moral sense.
35. *Fokkelman* [1999, 75–78; esp. p. 78] discusses the author's selection principle for inclusion of details: "His criterion for selection is the plot. . . . The biblical narrator only uses details if they are functional to his plot."
36. *Cotter* [2003] defines plot as

    the pattern of events in a narrative. Classically, these events are seen as linked by a chain of causality, such that the beginning of the story is some moment that is not caused by what precedes, the middle is caused

by what precedes and causes what follows, and the end is that which is caused by what precedes but which causes nothing else.

Further, that "a plot has several moments that describe an arc of tension." These movements are *exposition* (scene and characters introduced, no action), *inciting moment* (initiates the conflict between characters), *rising action* (or complication, the events that move the characters to the climax or crucial point of the story), *falling action* (or resolution, one of the characters emerges triumphant) and *conclusion* (resolution of the conflict). He also gives a simplified version for Genesis 1:1–2:3: exposition (1:1–2), development (1:3–30), turning point (1:31), and conclusion (2:1–3) [2003, xxvii]. *Sailhamer* [1992, p. 25] includes the following in his description of the general structure of historical narratives: introduction, conclusion, sequence, disjuncture, repetition, deletion, description, and dialogue.

37. *Geller* [1993, p. 509] comments on Hebrew poetry:

    An essential empirical fact is the general symmetry in clause length displayed in most passages which, on other grounds, might reasonably be termed "poetic."

    On the other hand, referring to narrative he says:

    By contrast, in books like Genesis or Judges, mainly narrative in content, clause length seems to be random.

38. Statistical analysis of the Hebrew Bible has been used to address higher critical issues, such as the unity of Isaiah. Recently, *Polak* [1998] has used a statistical analysis of finite verb to non-finite verb ratios to determine the relative chronology of Biblical texts; *Weil* [1974] uses the ratio [(total verbs)–particles]/(total words) to determine discourse type (what we are calling genre type) in the Pentateuch and the three major prophets. According to *Weil* [1974], poetry has a positive ratio; narrative a negative. *Forbes* [1992] discusses the conditions that must prevail for a statistical analysis of the Bible to be valid. Also he evaluates *Weil*'s studies and defends his and *Andersen*'s [1986] study of orthography in the Hebrew Bible.

39. These particular verbs can be identified as preterites because the

3ms [third person masculine singular] suffix on a preterite differs from that on an imperfect: הוּ versus נּוּ, respectively. Although, this distinction is a "hard and fast" rule in Ugaritic, it is not certain that it is in Biblical Hebrew. In the Hebrew weak verbs, the forms are distinguishable. Such is not the case with strong verbs. Without pronominal suffixes, the forms for strong verbs are indistinguishable and context must decide. This is the only aspect of the debate concerning the preterite, which could impact this study. But the number of hidden preterites is quite small and does not significantly affect the conclusions of this study. Issues concerning the function of the preterite and even what it should be called do not impact this study. The nature of the Hebrew verbal system is an ongoing topic of study, with a huge literature and many unsettled issues. Fundamentally, the question is whether finite verbs mark tense, aspect or a blend of the two. *Goldfajn* [1998] argues that finite verbs mark tense. Although there is also debate on the preterite, most Hebraists would recognize it as the "backbone" of Hebrew narrative, or as *Walsh* [2001, pp. 155–172] puts it, "the main narrative line." Other verb forms, perfect and imperfect, are "off-line." See his discussion of narrative sequences (in which he surveys the various constructions and perforce, the alternative verb forms, which obtain when there are breaks in the main narrative sequence) and the bibliography cited there; Dr. Andrew Bowling has pointed out in a private communication that there are preterites in Genesis 1:1–2:3 that have a summary function and that this is somewhat rare for preterites, but this does not affect the statistical study because it depends only on the number of preterites—not their function.

40. The command line syntax in *BibleWorks 5.0* was *<root>@v(erb) <stem(?)> <w(preterite)/ i(imperfect)/ p(perfect)/ q(waw-perfect)>
41. Dr. Roger Longbotham, Senior Statistician for Amazon.com, the statistical consultant for this study, performed this analysis and generated the plot.
42. Longbotham generated the random sample from the 295 narrative texts and 227 poetic texts.

43. *Pampel* [2000, pp. 1–18] and *Long* [1997] thoroughly explain the appropriateness of binary logistic regression for dichotomous categorical dependent variables and the rationale for the shape of the logistic curve. In brief, logistic regression (a non-linear regression method) was employed, because our data violates the following conditions for ordinary least squares: the data does not form a normal distribution; with only two values for *NARRATIVE*, but a range of values for X_i, the relationship between these variables is patently non-linear; our data is discreet and because our independent variables are relative frequencies, our independent variables are neither continuous nor unbound; and with categorical dependent variable (like ours), the distribution is heteroscedastic. *Long* [1997] shows that if the distribution for categorical dependent variables has a mean μ, its variance will be $\mu(1-\mu)$. In terms of the independent variables, $\mu = XB$, where X is the independent variables matrix and B is the coefficients matrix. The variance, therefore is $XB(1-XB)$. Thus, the variance is dependent on the independent variables, which is a violation of homoscedasticity. Moreover, for a Bernoulli distribution like ours, variance depends on the mean, which depends on the genre of the text [*Longbotham*, personal communication].
44. The theory of logistic regression is discussed in the following works among others: *Hosmer and Lemeshow* [1989], *Darlington* [1990], *Nagelkerke* [1991], *DeMaris* [1992], *Kleinbaum* [1994], *Rice* [1994], *Raftery* [1995], *Long* [1997], *Estrella* [1998], *Fox* [2000], *Pampel* [2000], and *Menard* [2002].
45. *Menard* [2002, pp. 67–91] discusses the conditions that must be met in order to use logistic regression. As far as sampling adequacy is concerned, no consensus has been reached. See *Long* [1997] for some discussion.
46. *Menard* [2002, pp. 28–29] describes the differences among prediction, classification, and selection models.
47. MLE is an iterative algorithm initiated with a best guess and run until there is convergence (no change in the coefficients for the next iteration). The theory of MLE is thoroughly discussed by *Long*

[1997, pp. 52–60].

48. *Menard* [2002, pp. 17–22] explains how to use the model chi-square statistic to determine the statistical significance of the model.
49. *Menard* [2002] discusses the definition and significance of R_L^2 and why he prefers it to other pseudo-R^2 on pp. 24–27.
50. *Ibid*, p. 28. The expected errors without the model depends on whether the model is a prediction, classification or selection model.
51. See *Menard* [2002, p. 40] for the expected errors without the model for classification type models.
52. *Sternberg* [1985, p. 25] clarifies the difference between this question and the question: did the events really happen? He states:

    History-writing is not a record of fact—of what 'really happened'—but a discourse that claims to be a record of fact.

    Howard [2003, pp. 26–29] differentiates the three meanings of "history": event (the facts), account of the event (the record of the facts, historiography), and the study of this account.
53. *Brueggemann* [1997, p. 118, n. 3] builds his *Old Testament Theology* on the statements in the text about God. He differentiates between the authors believing that they were writing about real events and that the events actually happened.
54. I adopted Rubrics 1–12 from [*Sternberg*, 1985, 31, 41] and adduced numerous texts to support his ideas. Rubrics 13–15 are original.
55. *Martens* [1998] sees four major Old Testament themes flowing out of this passage: YHWH delivers His people, He will make them His people and He will be their God, they will know Him and He will give them the Land.
56. These verbs are prominent in Exodus, occurring first in Exodus 2:24–25, along with ראה "see" and ידע "know." The last verb is especially important in that one of YHWH's primary purposes for the Exodus event was that Israel, Egypt, but, particularly, Pharaoh, would know that He is YHWH. Recall that Pharaoh said, "Who is YHWH? I do not know YHWH" (Exodus 5:3). He, thereby, "threw down the gauntlet," challenging YHWH to a duel of will and word, which he lost.

57. These were identified by noting naming formulas using קרא.
58. Decapitation and severed hands proved that an enemy was dead. For other examples in the Bible see Judges 7:25; 8:6; 1 Samuel 17:54; 31:9; and 2 Samuel 4:2.
59. Narratological studies argue—and for the most part—correctly that inclusion of details are plot driven.
60. "Gaps" are information, which we do not have but need to know in order to fully understand a narrative. They result from the deliberate withholding of this information, which is later supplied. "Blanks" are information, which we do not have, nor do we need, and is not supplied later. See *Sternberg*'s [1985, pp. 186–229] insightful discussion of this issue.
61. Strictly speaking, this is the only citation of the book found by Hilkiah the priest, when he was ordered to clean up the temple precincts and in the process found the book. The book is also referred to (but not cited) as The Book of the Law (2 Kings 22:8, 11) and the Book of the Law of YHWH (2 Chronicles 34:14, 15).
62. Contra Biblical historians who maintain that Biblical narratives depict a "'fictive world,' entire in itself and referring only to itself" and "Its (the Bible's) integrity must not be compromised by seeking to relate it to anything outside itself" (*Grisanti* [2004, p. 167] citing *Provan* [1995,p. 6]), Biblical authors "break frame" by breaking away from the narrative flow to directly address their contemporary readers, in a supererogatory effort to relate the history they are narrating to their time.
63. The most important word in the second type is לְפָנִים "previously."
64. 2 Peter 2:15; Revelation 2:14.
65. *Halpern* [1988, p. 8] speaks to this issue:

    > We call a narrative a history based on its author's perceived intentions in writing, the author's *claim* that the account is accurate in its particulars, the author's sincerity (Halpern's italics).

66. These two analyses were suggested and performed by Longbotham.
67. The problems with a linear fit for categorical data are discussed in *Long* [1997, pp. 38–40].

Glossary

aetiology A narrative which explains the name origin of persons, places, objects or customs.

anthropomorphism God's attributes and actions, described in human terms.

apocalyptic Highly symbolic literature.

bicolon The bilateral structure of most lines of Biblical Hebrew (BH) poetry.

clause length The number of words/accentual units from the beginning of a verse to its major disjunctive accent or from there to its end. The major bisecting accents are ʾaṯnaḥ and ʿole wᵉyored (only in Psalms, Job and Proverbs). q.v. *Yeivin* [1980].

codex A very early handwritten book; not a scroll.

discriminant analysis q.v. *The Oxford Dictionary of Statistical Terms (ODST)* [*Dodge*, 2003].

finite verbs BH verbs which are inflected for person, gender and number.

genre The type of literature. q.v. endnote 1; *New Princeton Encyclopedia of Poetry and Poetics (NPEPP)*.

hermeneutics The science of interpreting texts.

heteroscedasticity The variance of the error for a dependent variable is not the same for a given *x*, which precludes using linear regression to model the data. q.v. in *ODST*.

historicity A history accurately portrays real events.

historiography The method of reporting and writing history.

homoscedasticity The variance of the error for a dependent variable is the same for a given *x*. q.v. in *ODST*.

imperfect The BH verb form *yiqtol* in which person, gender, and number are marked by prefixes and suffixes. It indicates imperfective, progressive or durative aspect of present, future, general present, and habitual past and modal (may, might, should, could, must, etc.). q.v. *Biblical Hebrew Reference Grammar (BHRG)* § 19.3.

isometry The parity of the number of words, accentual units, syllables or even letters on each side of the major bifurcating cessura (usually

the major disjunctive accent) in a BH poetic line. q.v. *Geller* [1993] in *NPEPP*.

lexicography The study of word meaning. q.v. *Zgusta* [1971].

logistic regression (LR) A non-linear regression model, based on the log of the odds ($P/(1-P)$), where P is the probability of the occurrence of an event. LR is ideal for categorical data—when there are only limited (in our case, two) values for the dependent variable. q.v in *ODST*.

morphology A study of the transformations of individual words (the specific forms of a lexical item) which convey the major grammatical information of a language: person, gender, number, tense, aspect, and mood.

multicollinearity One independent variable is dependent on another.

parallelism In BH, semantic and/or lexical and/or morphological and/or syntactical and/or phonological and/or merely formal echoing of parts or all of the first part of a poetic line in the second part of the line. q.v. *Anchor Bible Dictionary.*

perfect The BH verb form *qatal* in which person, gender, and number are marked by suffixes only. It indicates punctiliar or constative aspect of present (only stative verbs), past or antierior past. q.v. *BHRG* § 19.2.

philology "The love of words" is the study of the phonology, morphology (q.v.), syntax (q.v.), and lexicography (q.v.) of a text—a prerequisite to interpretation.

preterite The BH verb form *wayyiqtol* in which person, gender, and number are marked by prefixes and suffixes. Perforce, it is a main clause initial form. It indicates past action, forming the main story line of a narrative. q.v. *BHRG* § 21.2.

prosody "The study of … structures of sound patterning in verse: chiefly, meter, rhyme and stanza …. the study of those extensions, compressions, and intensifications of meaning of which bound speech becomes capable by increase in formal structure." q.v. in *NPEPP*, pp. 982–983; *Geller* [1993] in *NPEPP*; "Prosody" in *Encyclopedia Judaica,* cols. 1200–1202.

stichography The layout of a literary text on a page.

syntax Each sentence is an example of a typical specific structure, and each word is an example of a specific type of word. Syntax endeavors to ask how specific words are combined into specific sentences. From Rabin's תחביר לשון המקרא [1963].

tenor The complex of meanings conveyed by a metaphor. For example, יהוה צוּרִי, "YHWH is my rock" (Psalm 19:15), means that YHWH is strong, steadfast, dependable, etc.

vehicle The actual words of a metaphor. For example, יהוה צוּרִי, "YHWH is my rock" (Psalm 19:15).

waw-perfect The BH verb form wᵊ*qatal* in which person, gender, and number are marked by suffixes only. Perforce, it is a main clause initial form. It sequentially maintains the force of the previous verb. The wᵊ*qatal* form is a sequential future if it follows an imperfect referring to the future. It is a habitual past if it follows an imperfect used in a text referring to the past. And it is a sequential command if it follows an imperative. q.v. *BHRG* § 21.3.

word order The sequence of the main sentence constituents: the subject (S), verb (V), and the (direct) object (O). English is predominantly an SVO language: "God created man." BH narrative, on the other hand, is predominantly VSO (OSV in the right to left order of the language): וַיִּבְרָא אֱלֹהִים אֶת־הָאָדָם, "Created God man" (Genesis 1:27).

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