

Rhetorical Structure Theory: A New Tool for Bible Interpretation?

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Abstract: Rhetorical structure theory (RST) came into being for the analysis of natural texts to determine their rhetorical structure and function, originally as a means of allowing computer generation of texts. Since then, its usefulness as a linguistic tool has been established independent of its use for computer text generation. The theory analyzes texts as having basically nuclear statements and satellite statements linked to them, with the satellite statements having a variety of definable relations to their respective nuclei, primarily based on semantics rather than grammar. It thus provides a valuable complementary method for biblical discourse analysis because it reveals rhetorical relationships often overlooked in grammatical analysis.

Introduction

I came across Rhetorical Structure Theory (RST) while preparing to write a chapter in a forthcoming book on discourse analysis in narrative books in the Hebrew Bible. I selected the book of Ezra as the subject of my chapter, and in the course of my research, I investigated RST in great detail. It became apparent to me that this theory offered several distinct advantages for discourse analysis. While it was not the only method of analysis I used, it proved effective in analyzing the book of Ezra. The purpose of this paper is to demonstrate the value and effectiveness of RST as a tool for Bible interpretation. The paper will explain the history and particulars of RST for those who are not familiar with it, illustrate RST analysis with excerpts from the book of Ezra, and then evaluate the usefulness of RST analysis for Bible scholars.

The History of Rhetorical Structure Theory

Rhetorical Structure Theory (RST) originated in the studies of computer methods for generation of texts in the early 1980s.¹ The creators of the theory had concluded that there was “no available theory of discourse structure or function that provided enough detail to guide programming any sort of author.”² The theory has proved useful in analysis of discourses outside of the attempt to generate computer texts, hence our discussion of it here.

As can be inferred from the name of the theory, RST focuses on the rhetorical relations within the clauses of a text, thus focusing on the text as a communication vehicle primarily meant to convey a communicative purpose to the reader or hearer. The theory is a relative newcomer to

¹ William C. Mann, Maite Taboada. 2005-2023. “Introduction to RST.”

<https://www.sfu.ca/rst/01intro/intro.html> (Accessed July 26, 2023).

² Ibid.

the field of discourse structure and analysis; however it has now established itself as a mature theory in linguistic circles. It bears some similarity to other methods already in place, in particular semantic structure analysis. But a closer examination is in order.

The Basic Concepts

RST is based on three assumptions:

1. Texts are not just strings of clauses. Instead, they consist of hierarchically organized clauses and groups of clauses that relate to one another in various ways.
2. These relations, which can be described functionally in terms of the purposes of the writer and the writer's assumptions about the reader, reflect the writer's options for organizing and presenting the concepts.
3. The most common type of text relation is that which we call a **nucleus-satellite** relation, in which one part of the text is ancillary to the other.³

The essence of RST is to recognize the existence of nuclear and satellite units within a text, and then to define and map these relations. The satellites provide support to the nuclei, and communicate additional information and ideas the author wanted conveyed to the reader. Mann and Thompson describe the nucleus-satellite relationship in further detail:

...the typical relations of RST are nucleus-satellite relations, which are asymmetric. For Example, if span A is standing as evidence for span B, then B is not standing as evidence for A. Examination of large amounts of text shows that the uses of these asymmetric relations form a pattern, in which one span is consistently more central to the writer's goals and less subject to deletion or substitution of other material. The less central, or satellite, span tends to enhance the function of the more central, or nucleus, spans.⁴

In general, what nucleus of a rhetorical relation expresses is more essential than what satellite expresses. The nucleus is comprehensible independent of the satellite, but not vice versa.⁵

The first step in RST analysis is to break the text down into elementary discourse units (EDU),⁶ then the relations between adjacent EDUs are analyzed to determine what is nucleus and what is satellite. An EDU is defined simply as “functionally a simple sentence or a clause in a complex sentence,” and further defined by these properties:

³ William C. Mann, Sandra A. Thompson, “Rhetorical Structure Theory: A Framework for the Analysis of Texts,” Reprinted from IPRA Papers in Pragmatics, Vol. 1, 1987. (Repeated words edited out)

⁴ Ibid.

⁵ Shengluan Hou, Shuhan Zhang, and Chaoqun Fei, “Rhetorical structure theory: A comprehensive review of theory, parsing methods and applications,” *Expert Systems With Applications* 157 (2020) p. 3.

⁶ Manfred Stede, Maite Taboada, and Debopam Das, *Annotation Guidelines for Rhetorical Structure* (chrome-extension://efaidnbmnnnibpcajpcglclefindmkaj/https://www.sfu.ca/~mtaboada/docs/research/RST_Annotation_Guidelines.pdf, 2017, accessed Feb. 6, 2023), p. 1.

1. EDU is the minimal textual unit of RS-trees; EDU acts as the leaf node of each RS-tree, which means that it can't be split into smaller text spans.
2. EDU acts as a syntactic constituent that has independent semantics; In this sense, an EDU corresponds to a clause or a simple sentence, but not a phrase.
3. Some EDUs may contain parenthetical units. In other words, some EDUs may have embedded textual units, whose deletion doesn't affect their semantic meaning.⁷

The next step is to define the rhetorical relationship between the nucleus and the satellite. The classical list of relations is:⁸

Circumstance	Justify	Concession
Solutionhood	Volitional-cause	Condition
Elaboration	Nonvolitional-cause	Otherwise
Background	Volitional-result	Interpretation
Enablement	Nonvolitional-result	Evaluation
Motivation	Purpose	Restatement
Evidence	Antithesis	Summary

It is also possible to link two nuclei together in the following multi-nuclear relations:

Conjunction	Joint
Disjunction	Contrast
Sequence	

The results of this analysis are diagrams that are similar to tree diagrams for syntax analysis, but based on relationships of clauses rather than individual words. The drawing of the diagrams is facilitated by software developed for that purpose, available from the RST website.⁹

Before we go on to diagrams and examples of RST analysis in action, we should point out that many things about RST are very similar to semantic structure analysis that was developed by Beekman and Callow years ago. About semantic structure analysis, Beekman and Callow had the following to say:

One of the basic units in analyzing the semantic structure of a text is called a proposition. To analyze a text from a semantic standpoint, then, would involve identifying the propositions themselves; analyzing the semantic relations between the

⁷ Shengluan Hou, Shuhan Zhang, and Chaoqun Fei, "Rhetorical structure theory: A comprehensive review of theory, parsing methods and applications," *Expert Systems With Applications* 157 (2020) p. 2.

⁸ The complete explanation of each of these relations, with examples, are found in Mann, Thompson, "Rhetorical Structure Theory," pp. 250-255, and Stede, Taboda, Das, *Annotation Guidelines*, pp. 9-21.

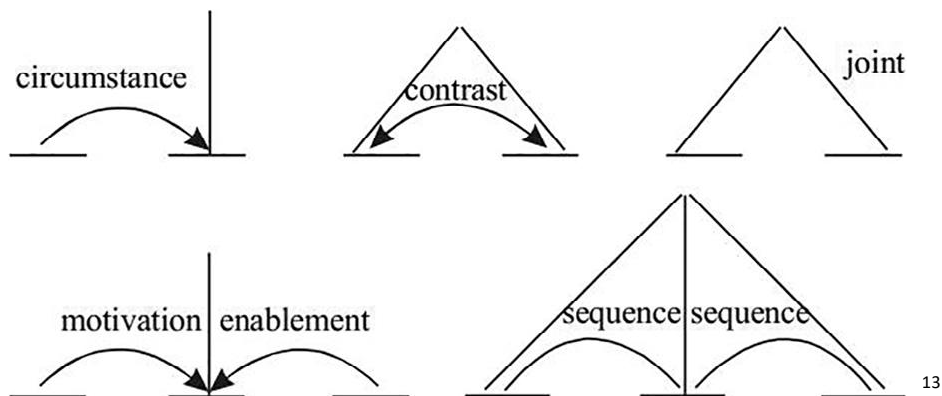
⁹ <https://www.sfu.ca/rst/06tools/index.html>

propositions; analyzing the propositions into smaller semantic units; and indicating how the propositions are grouped into larger semantic units.¹⁰

The interesting fact is that Mann and Thompson in their 1987 foundational paper cite this above work by Beekman and Callow and another work that included Michael Kopesec.¹¹ Even though Mann and Thompson never discussed semantic structure analysis in relation to RST, if we compare the lists of relations between propositions as given in *Translating the Word of God*¹² with the lists given above for EDUs, we see a lot of similarity. Beekman and Callow also used the term “nucleus” for central statements, but their units of analysis were longer than the EDUs of Mann and Thompson. It is clear even from the quote above that the goals of each type of analysis are different. Beekman and Callow were after the “larger semantic units,” whereas Mann and Thompson had a much narrower goal. They wanted to describe the rhetorical functions of the smaller parts of the text so as to determine the hierarchy between smaller units, so that the core of what is being said could be separated out from the ancillary statements at the most basic level. It is out of the scope of this paper, but a detailed study of how previous scholars, particularly biblical scholars, influenced the work of Mann and Thompson would be an interesting subject for future research.

RST Diagram Examples

The following are some simple diagrams that illustrate the types of “text spans” or “RS-tree” diagrams that are possible:



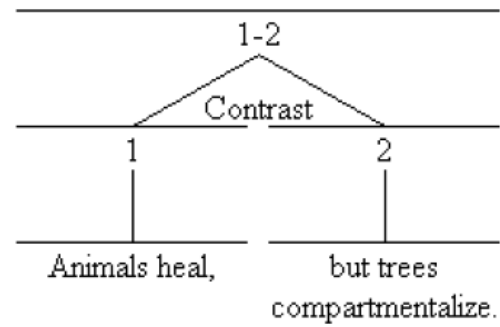
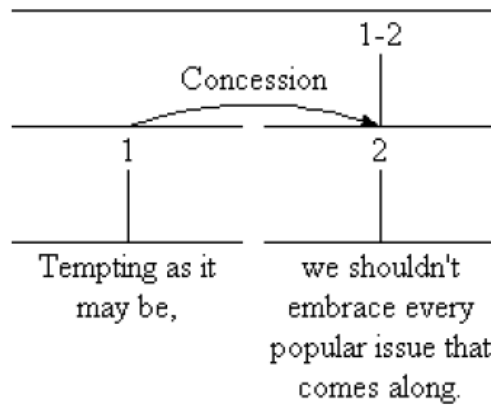
The following are examples of simple diagrams taken from the RST website:

¹⁰ John Beekman and John Callow (1974, rev. 2002) *Translating The Word Of God: with Scripture and Topical Indexes*. Dallas: SIL International, p. 271.

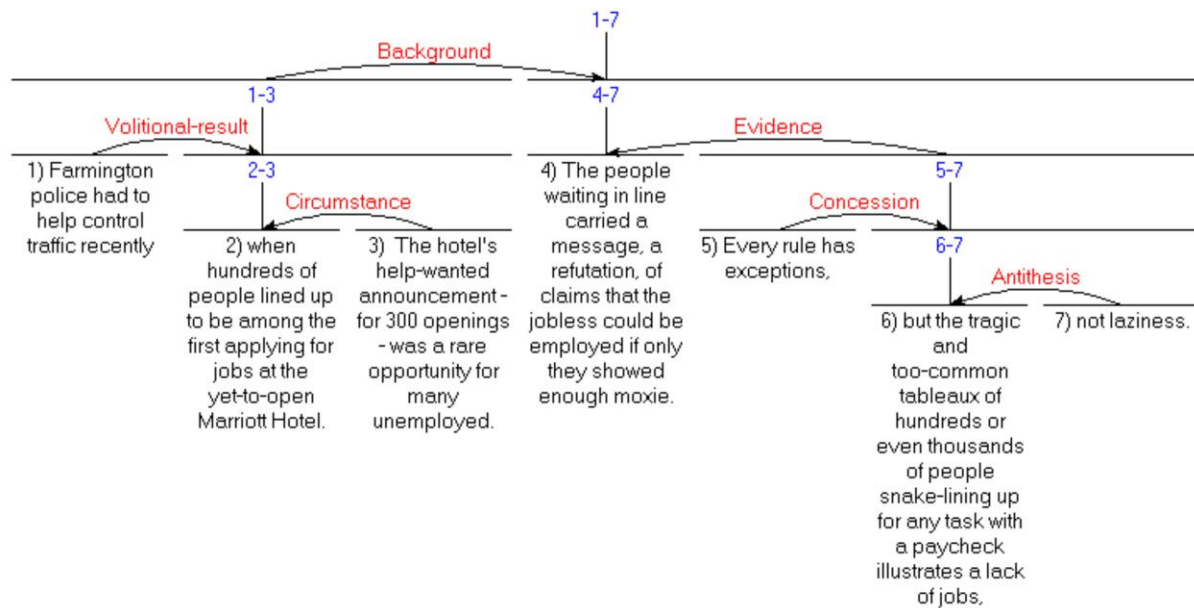
¹¹ John Beekman, John Callow, and Michael Kopesec. 1981. *The Semantic Structure of Written Communication*. Dallas: Summer Institute of Linguistics.

¹² Beekman and Callow, p. 294.

¹³ Shengluan Hou, Shuhan Zhang, and Chaoqun Fei, “Rhetorical structure theory: A comprehensive review of theory, parsing methods and applications,” *Expert Systems With Applications* 157 (2020), p. 3.



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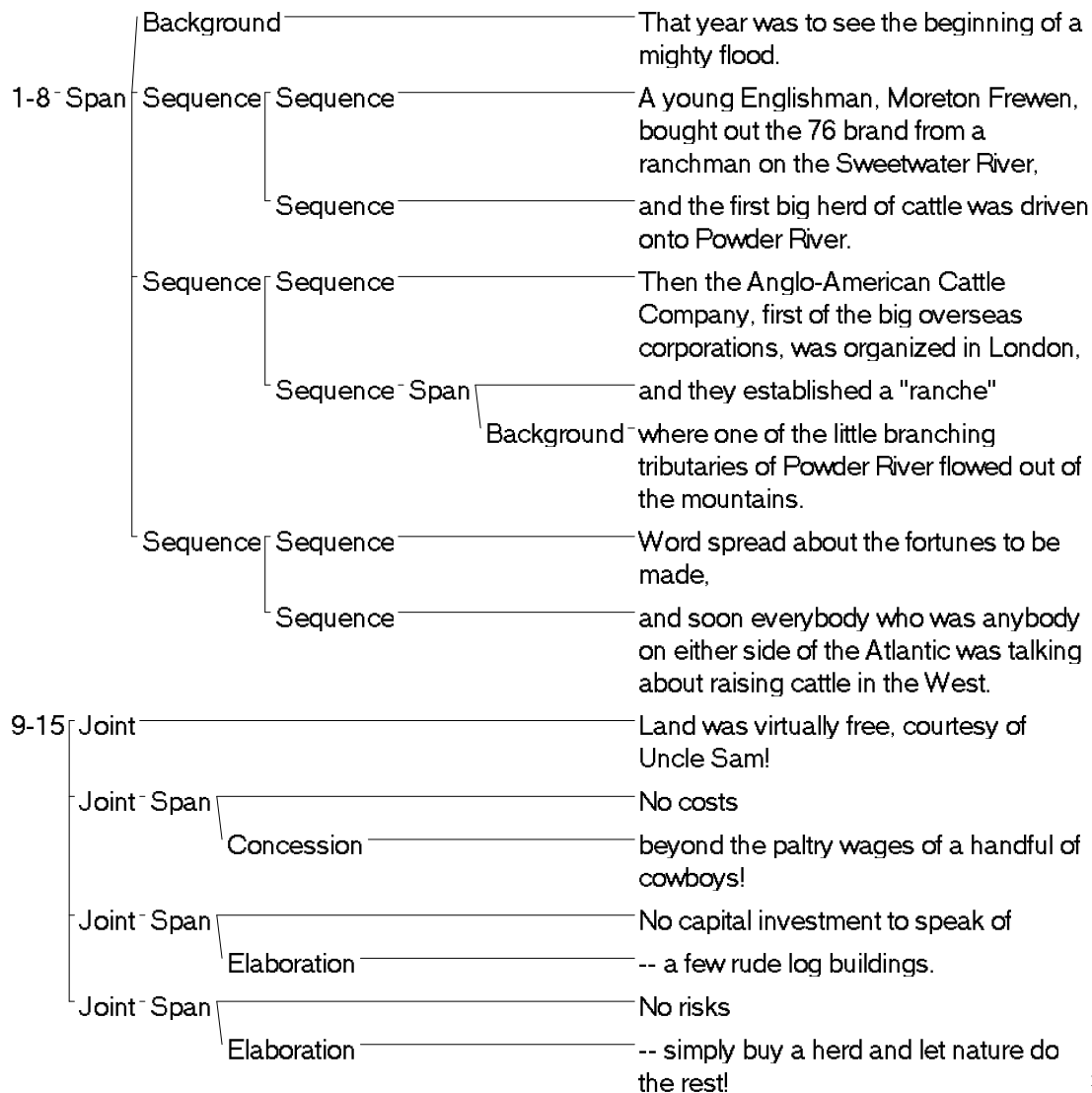


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The diagrams are linearly wide, but the software does provide a way to change the orientation to a vertical rather than a horizontal format, as in this example:

¹⁴ Maite Taboada and William Mann, "Rhetorical Structure Theory: looking back and moving ahead," *Sage Publications*, Vol. 8:3, 2006, p. 427.

¹⁵ <https://www.sfu.ca/rst/02analyses/published.html#notlaziness-text>



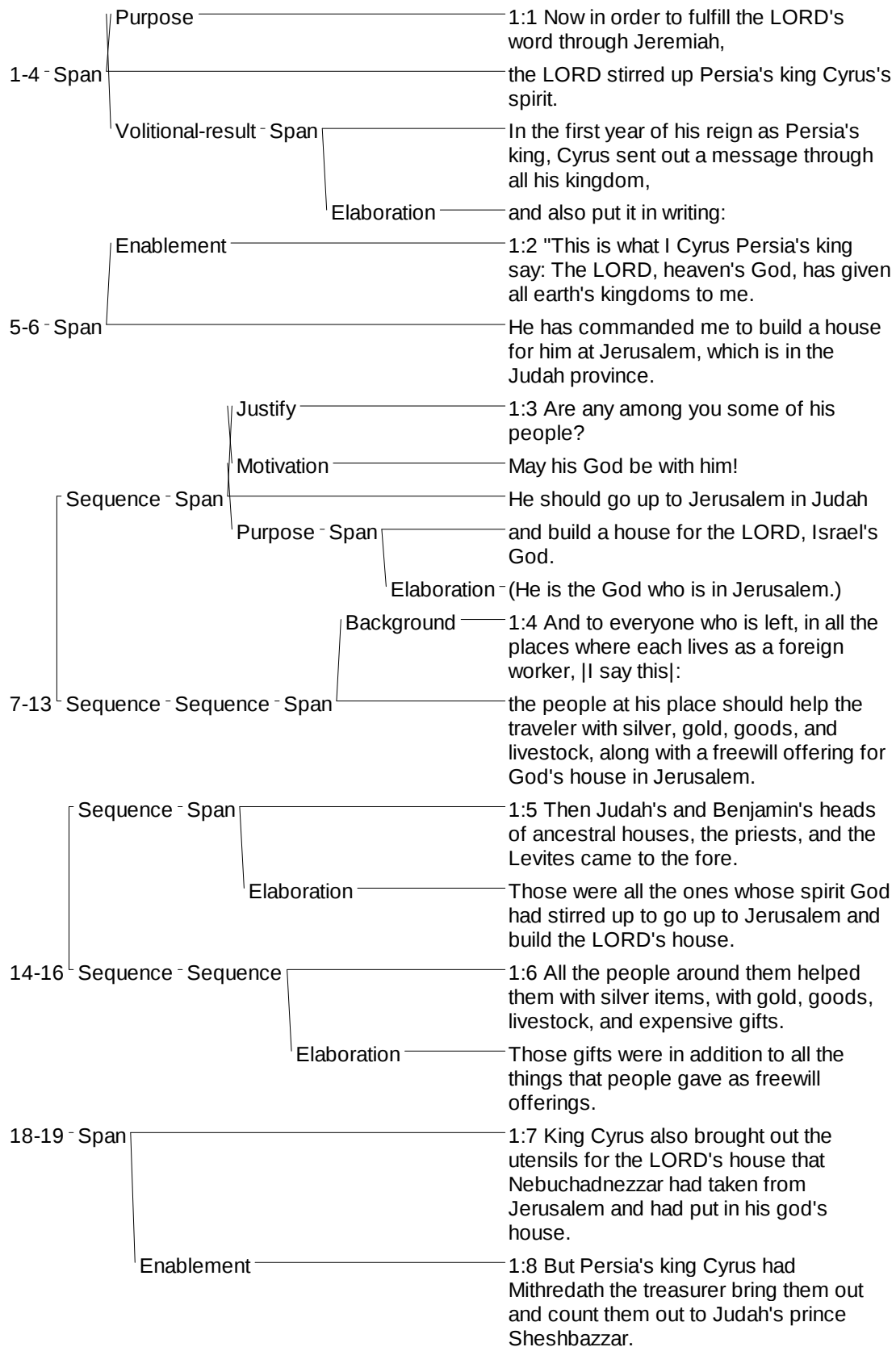
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RST Examples from the Book of Ezra

I have done a complete analysis of the book of Ezra using RST analysis. The present full RST analysis of the continuous text of Ezra is quite long, taking 40 horizontal screen shifts on the computer to scroll through the entire analysis. So the examples here given will all be shorter sections. In fact, the creators of RST theory have acknowledged that the analysis doesn't work as well on longer texts.¹⁷ Our first example will be from Ezra 1:1-8:

¹⁶ File "America-mt.rs2" from the software "Analysis" folder.

¹⁷ Maite Taboada and William Mann, "Rhetorical Structure Theory: looking back and moving ahead," *Sage Publications*, Vol. 8:3, 2006, p. 430.



The term “span” refers to the text spans or RS-tree sections, and the repetition of the same word on a line is just a way to regulate the spacing of the diagrams.

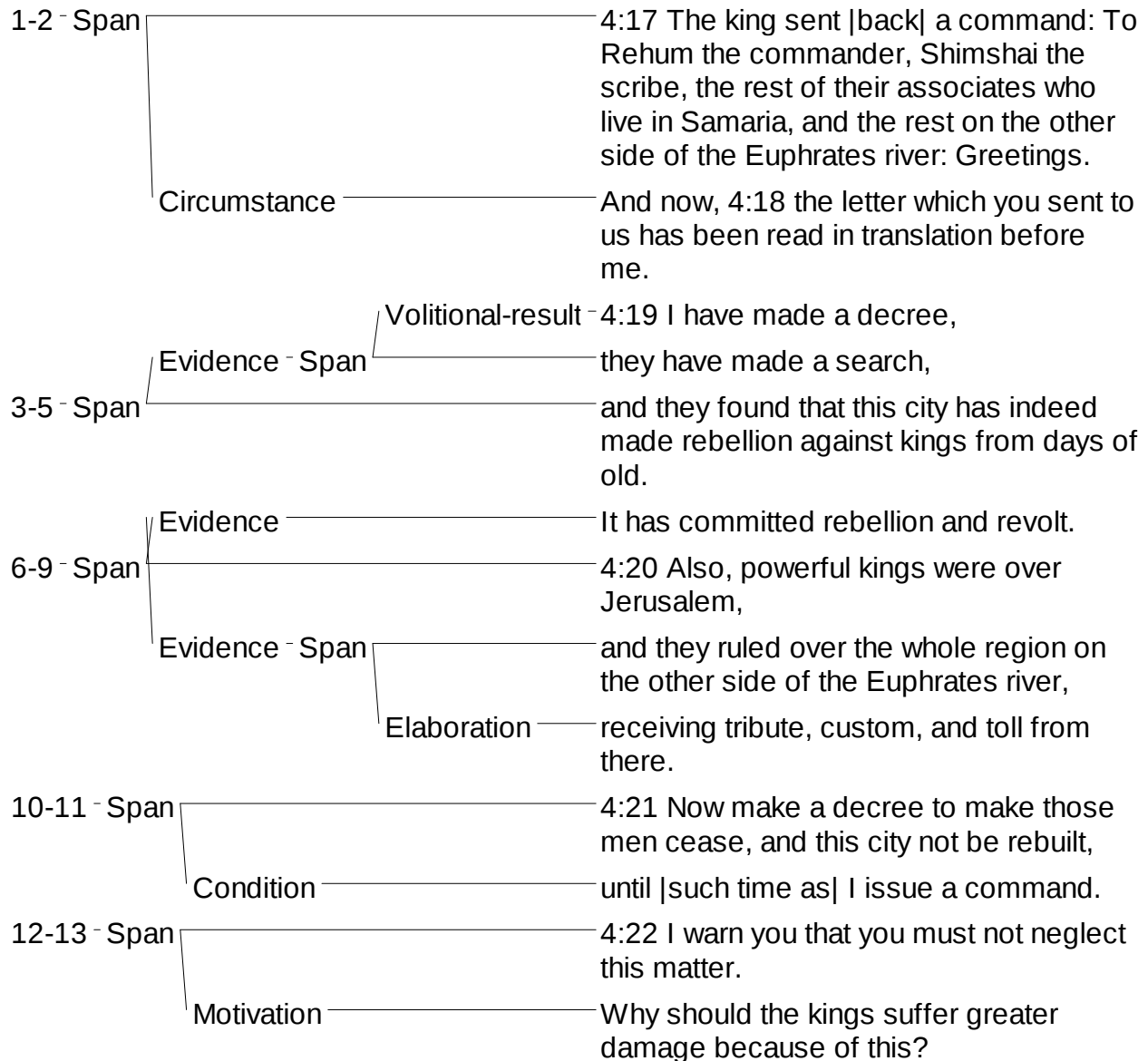
The left-most numbers are the EDUs, and each group of them (1-4, 5-6, 7-13, 14-16, 18-19) is a nucleus and its satellite or satellites. 7-13 and 14-16 are multinuclear spans that link two adjacent nuclei together, in this case the sequence relation. We can see an inverted structure here, with 7-13 as the command from Cyrus for some to go and others to support them, and 14-16 being the Jewish response to Cyrus’s decree.

One of the practical applications that has been explored by computer people for the RST analysis is the ability for a computer to summarize a text by selecting out the nuclei. If we take the nuclei and string them together, they form a basic summary of the section:

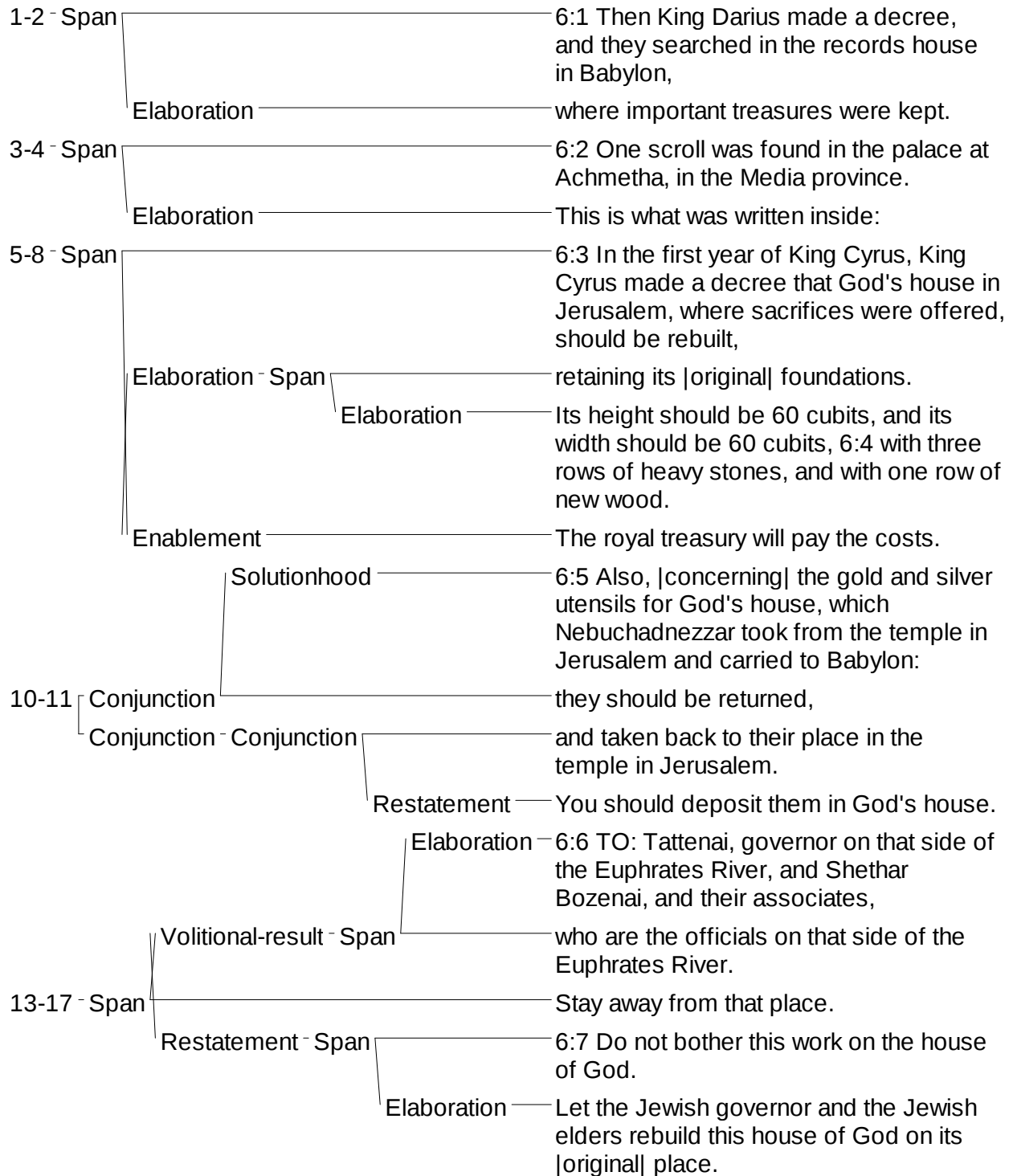
...the LORD stirred up Persia's king Cyrus's spirit... He has commanded me to build a house for him at Jerusalem, which is in the Judah province.... He should go up to Jerusalem in Judah... the people at his place should help the traveler with silver, gold, goods, and livestock, along with a freewill offering for God's house in Jerusalem.... Then Judah's and Benjamin's heads of ancestral houses, the priests, and the Levites came to the fore.... All the people around them helped them with silver items, with gold, goods, livestock, and expensive gifts.

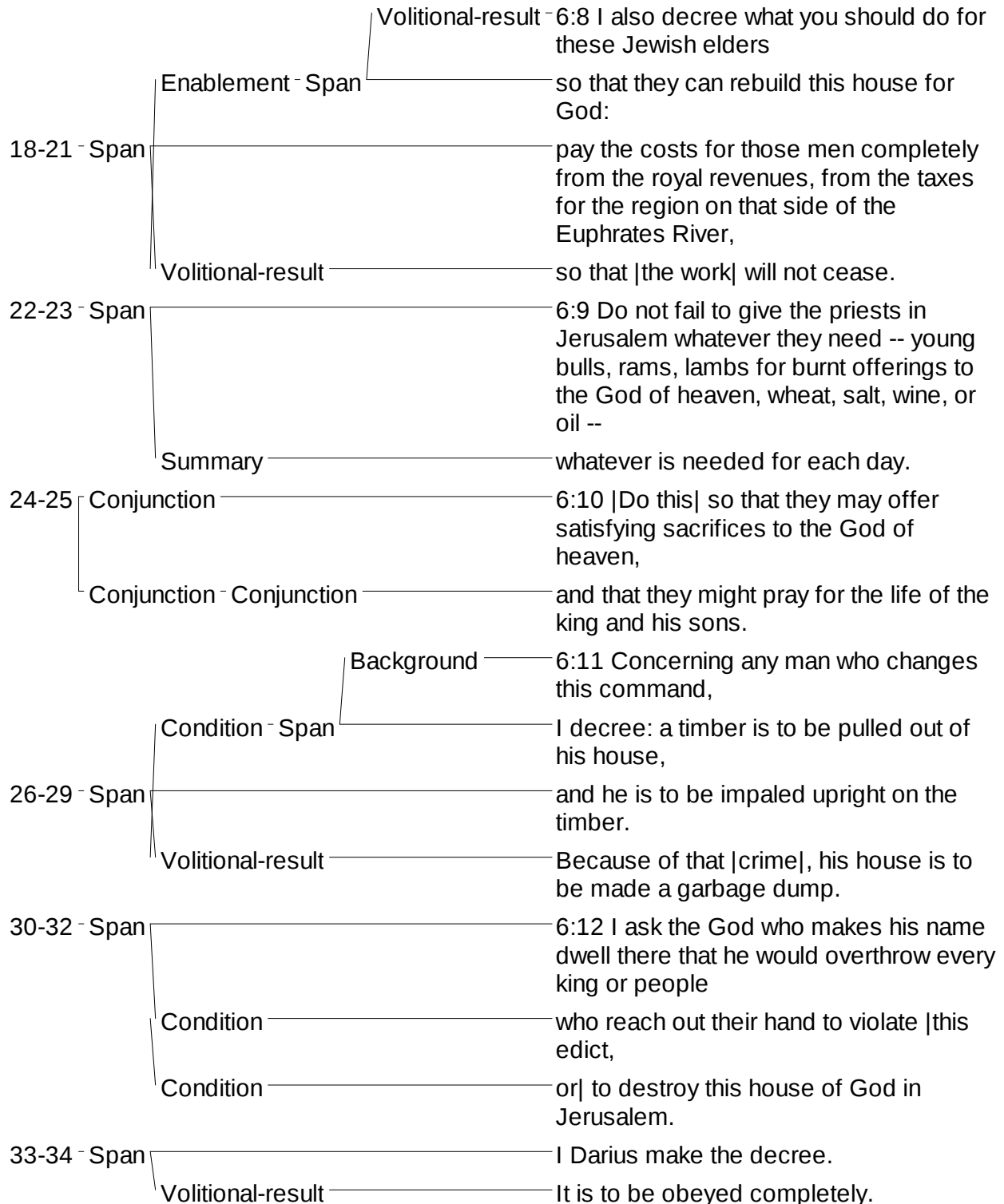
If we were to analyze these eight verses without using the RST analysis, we would see that v. 1 forms an introduction to the section, v. 2 corresponds to vs. 7 and 8, and vs. 3 and 4 correspond to vs. 5 and 6. This is a simple chiasmic structure, where after the introduction the outer and inner parts correspond to each other, and they do so at the rhetorical level as well as the grammatical level. Cyrus gives the command to rebuild the house, and he specifies who should do it and who should support it. Then the people respond with who will go and who will support, and Cyrus responds to his own decree by providing the means for his decree to be accomplished. The RST analysis accurately reflects this analysis with its nucleus-satellite text spans. The concept of enablement is an important rhetorical purpose here, as a key to how this great undertaking would actually happen, only through the enablement of both king and fellow exiles.

We will look at two other short spans to see how they reveal the rhetorical purposes of each text. The first is Ezra 4:17-22, the response of Artaxerxes to the protest letters of the Persian officials in Judah province:



The second is the response of Darius to the careful inquiry from Tattenai the Persian governor:





In comparing the letters from the two kings, we see the perfunctory nature of Artaxerxes's letter, who has found the minimal amount of evidence he needs to make his self-serving decree. In contrast, the letter from Darius, acting on the decree that was found, has a great

deal of volitional result in it, and once again, as a common theme in Ezra, the king's enablement for the Jewish remnant is clearly laid out in the letter. The software also tabulates the frequency of each type of rhetorical device, as can be seen in the forthcoming chapter on narrative discourse in Hebrew texts. I should point out that in my analysis of Ezra, I did not use RST alone. The text is better understood by the use of both grammatical and semantic approaches, and so my approach for the grammatical side was the approach of Bowling and Longacre in *Understanding Biblical Hebrew Verb Forms*,¹⁸ a seminal work for discourse analysis, not just in narrative texts.

Is RST Analysis Useful for Bible Interpretation?

The fact that RST theory is associated with machine translation may stigmatize it for many Bible scholars and translators. But laying aside computer usage, RST analysis seems to have the following values for Bible interpretation, translation, and linguistics in general:

1. RST analysis is primarily **semantically based** rather than primarily grammatically based. It therefore balances off the more common grammar approaches.
2. In contrast to many linguistic diagrams or trees, the RST **diagrams are less complicated** and therefore more holistic and broader in their view of the text. The concept of mapping by clauses is a very functional and practical way to see the text.
3. Since the approach is semantic rather than grammatical, it represents a **more universal approach** to any text in any language.
4. The **nucleus-satellite structure** is a highly practical way of explaining relations between clauses.
5. The RST analysis is a **flexible system** with adaptable terminology for relations and various ways to show those relations between clauses.
6. The RST software is relatively **simple to use**, and other than the size of the diagrams, it does not take long to segment a text and put in relations, and the approach itself has not been expanded and become too complicated to obscure its original purpose.
7. By selecting the nucleus statements, the RST analysis provides a **practical way to summarize** a text.
8. Since RST comes from a different arena, it provides a **fresh look** at sentences, clauses, and discourse analysis.

What seems to stand out as weaknesses of RST:

1. The analysis of relations is **subjective**, and the categories and descriptions of those relations vary, depending on who you read.
2. The method does **not seem to be very good for long texts**, as a means to see an overall structure. Such texts still need to be analyzed by more traditional macrostructure methods.
3. The **diagrams** are somewhat **cumbersome** at times.

¹⁸ Robert Longacre and Andrew Bowling, *Understanding Biblical Hebrew Verb Forms: Distribution and Function across Genres* (SIL International Publications, 2015).

4. Since this approach is fairly new, there is **not a lot of data** to compare and evaluate for effectiveness.

Possible applications for Bible interpretation and translation are:

1. RST analysis is a useful way to analyze natural texts in the languages being studied and analyzed as support for Bible translation. Such analyses serve to help determine the ways the target language can signal various types of rhetorical relations.
2. Since the software and methods are simple and direct, the analysis can be done without very much training or skill level, so it could be used to train translators of a variety of skill levels in text analysis.
3. On complicated passages with a lot of deep argumentation, separating out the clauses and translating them as individual units can be very helpful for Bible translators. If they then do an RST analysis of the clauses, they will have a better idea of how to link the clauses together in their own language.
4. It can be useful for analyzing narrative and argumentation flow in biblical texts.

Possible projects I am contemplating:

1. A comparison among the New Testament expository writers to determine differences in argumentation style.
2. An analysis of Hosea to see if it will unravel some of the mysteries of Hosea's outline and structure.

Conclusion

At present, it is difficult to find RST in much use in biblical studies.¹⁹ Though RST has earned an established place in linguistics studies, it is still somewhat uncertain to tell long-term what the usefulness of RST analysis will be for Bible translation and biblical studies, hence the question mark in the title. But the ways of showing interrelations within a text is the strong suit for RST, and that appears to be a singular value to be explored and utilized. If nothing else, this paper can keep biblical scholars informed about new trends and techniques. But more than that, it could help mother-tongue translators see relations in a text they had not seen before, and enable them to see clausal relations that enable them to recognize the natural orders of their own language in comparison to the text they are using as a source. It is hoped this paper will stimulate others to help me and others continue to explore the various possibilities for this methodology.

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¹⁹ I have found so far only one other study using RST: Yan Ma, "A Methodological Proposal for New Testament Discourse Analysis: Rhetorical Structure Theory and its Application to John 8:31–59," *Biblical and Ancient Greek Linguistics* 11 (2022–23).

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