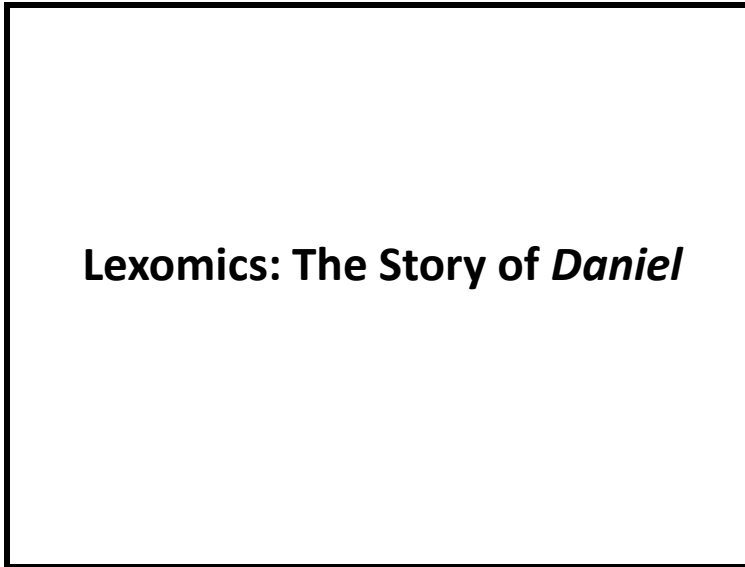
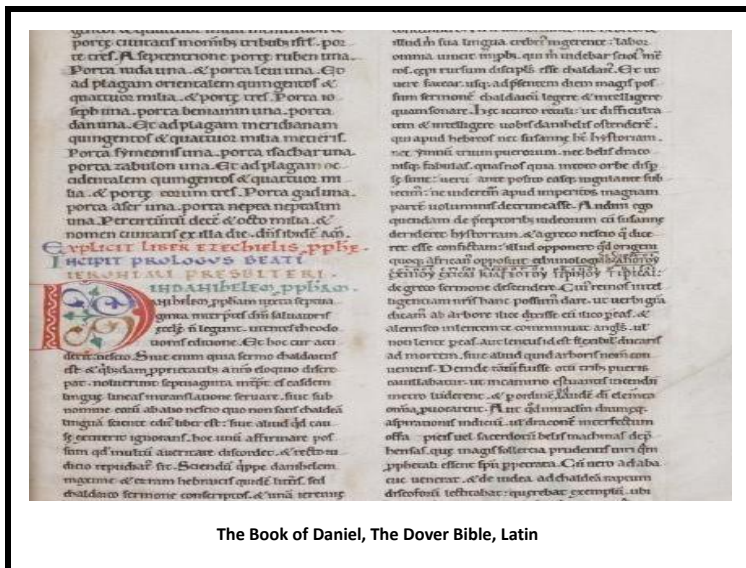


# Lexomics: The Story of Daniel

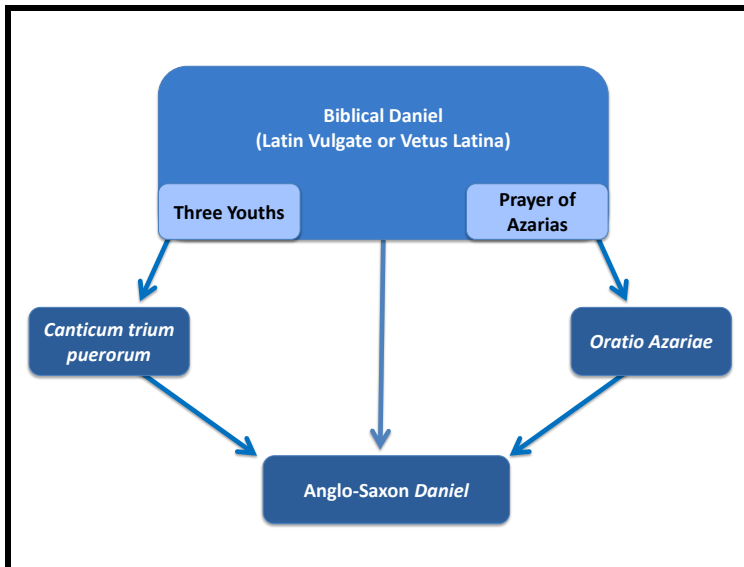


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(Slide 2)

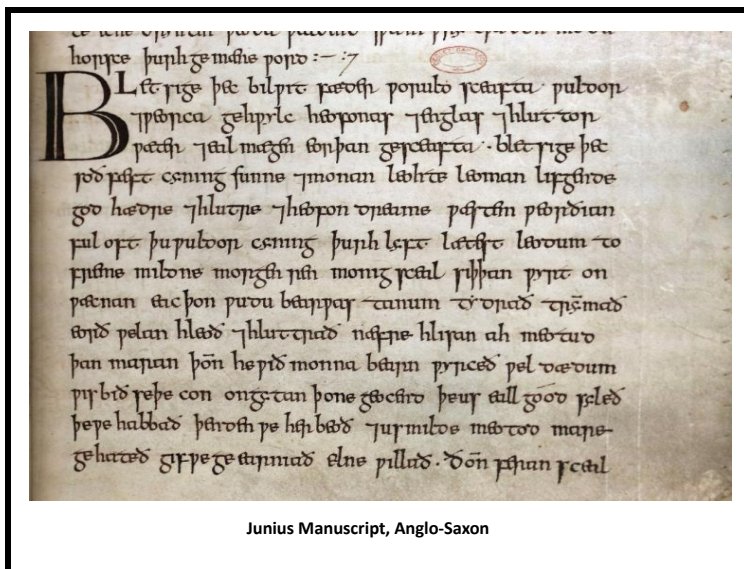
The Old Testament book of Daniel tells the story of the prophet Daniel and the Israelite exiles in King Nebuchadnezzar's Babylon. The two most famous episodes are the stories of the three youths in the fiery furnace and Daniel in the lion's den.



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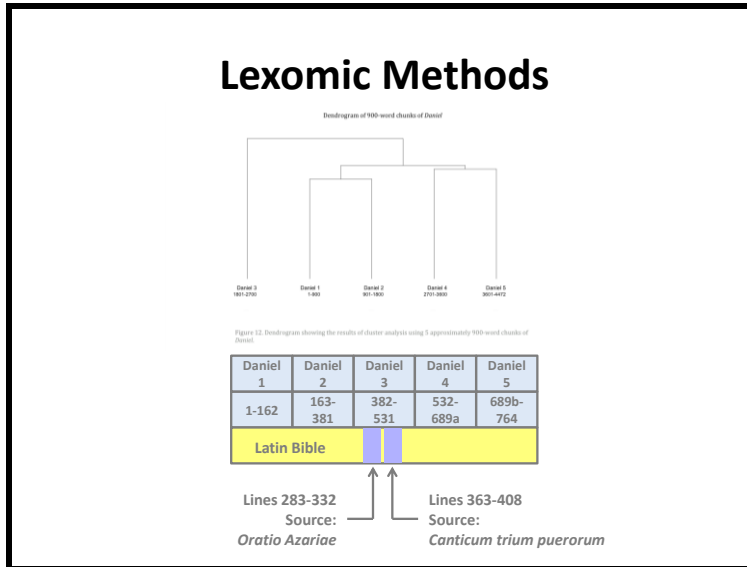
The Anglo-Saxon poem *Daniel* is a verse adaptation of the biblical story, found in the 10<sup>th</sup> century Junius manuscript. In addition to the Old Testament tale, the Anglo-Saxon poet drew on two Latin canticles. (A canticle is a short hymn or song written for church services.) Both the *Oratio Azariae* and the *Canticum trium puerorum* were canticles previously adapted from the biblical Daniel as early as the fifth century. The *Oratio Azariae* is Azarias' prayer for deliverance from the fiery furnace, and the *Canticum trium puerorum* is the song of praise that the three youths sing after emerging unscathed from the fire.

When the poet wrote *Daniel*, he adapted the Latin prose of the Bible into Anglo-Saxon poetry, but when he reached the song of Azarias and the song of the three youths, he drew upon the canticles for these sections of the text rather than relying solely on the original biblical source.



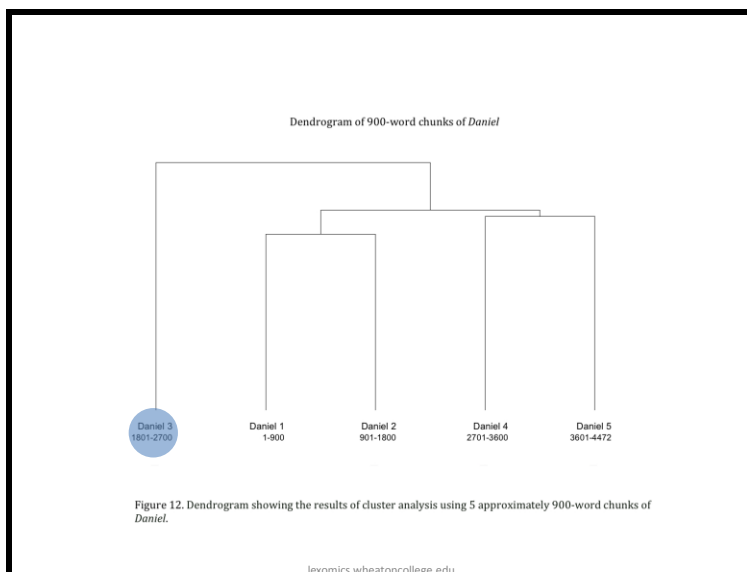
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Scholars figured out the history of the composition of the Old English *Daniel* by painstakingly comparing the precise arrangement of scenes in the canticles to the arrangement in the Bible, paying close attention to the linguistic details of the text. These traditional philological methods find patterns of word use or spelling and use them to reconstruct a textual structure or history.



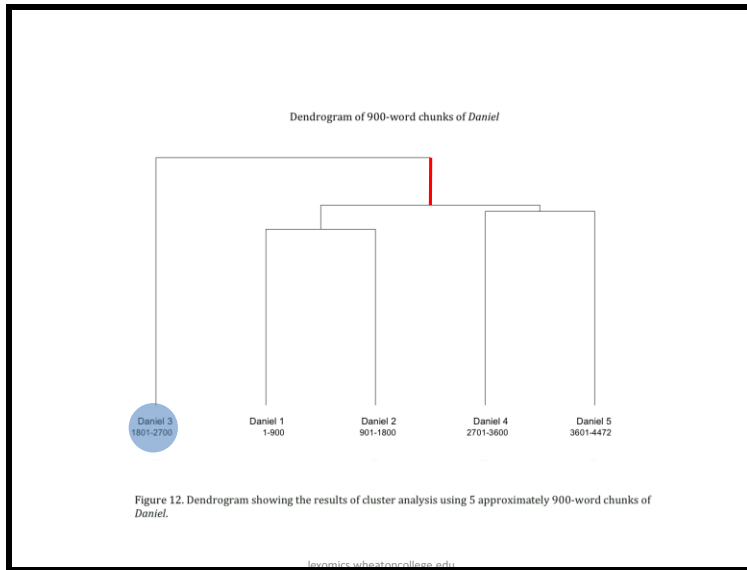
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Lexomic methods give us new ways of looking for patterns of word use. We start by cutting a text or texts into segments. Then, by calculating and tabulating the relative frequency of each word in each chunk, we can create tree-diagrams, or dendrograms, that visually display the relationship of vocabulary within or across texts. (For a more detailed explanation of creating and reading dendrograms and other Lexomic methods, see the tutorials page.)

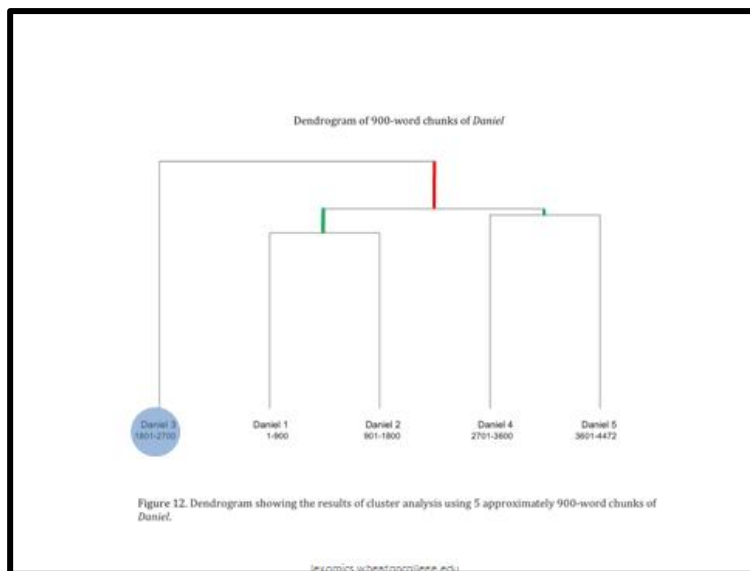


(Slide 6)

This is a dendrogram of the poem *Daniel* cut into 900-word segments. Note that chunk three is in its own clade, separate from the other four chunks that group together. The other chunks are grouped sequentially, chunk one clustered with chunk two and chunk four with chunk five.

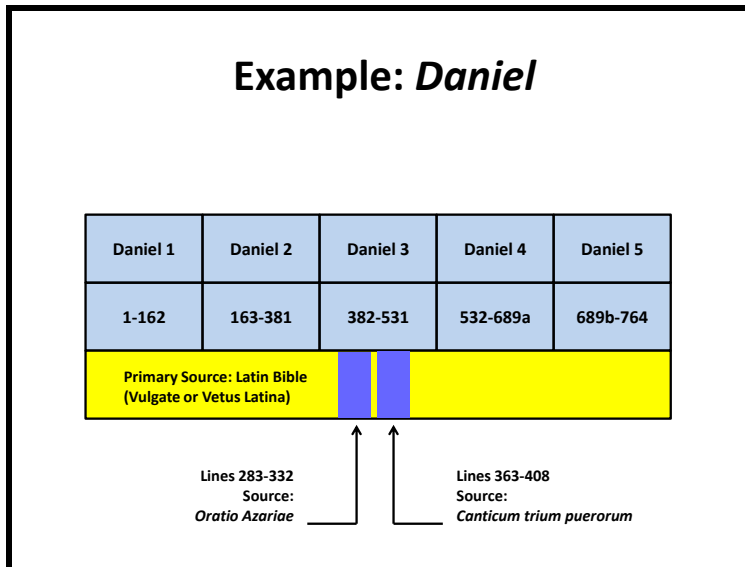


(Slide 7)



(Slide 8)

Also notice that the vertical distance between chunk three and the rest of the poem is larger than the vertical distance between any other chunks. These two characteristics indicate a difference in vocabulary distribution in chunk three.



(Slide 9)

If we create a ribbon diagram for the poem *Daniel* it is easier to observe where the non-biblical sources occur. The yellow indicates sections the poet adapted from the Latin Bible and the purple indicates sections the poet adapted from the *Oratio Azariae* and the *Canticum trium puerorum*. As can be seen from this diagram, the portions closely adapted from the canticles are found in chunk three.

There is a correlation between the isolated clade on the dendrogram and the section of *Daniel* containing the outside sources. This suggests to us that the vocabulary difference in chunk three is a result of the influence of the Latin canticles in these sections.

We have therefore come to the same conclusions as traditional scholars: the Anglo-Saxon poet used the Latin canticles as additional sources while he was composing *Daniel*. But we have reached our conclusions from a different direction, using an entirely different set of methods. Our analysis of *Daniel* gives us some confidence that conclusions based on Lexomic methods can be just as valid as those reached using traditional approaches.

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