

## PRESS RELEASE

---

### How do we memorise Dante's verses: more than a matter of meter

**A new study at SISSA investigates how meter affects the learning of poetry by comparing the Divine Comedy and Orlando Furioso, and shows that when rhymes, accents and verse lengths in the two works are disrupted, it is easier to learn the poetry of Dante**



Trieste, 25 March 2021

Earlier generations who relied on oral transmission were well aware of this, and children who learn poetry experience it today: meter aids memory. To investigate its role in cognitive processes in our brain, a group of neuroscientists from SISSA has focused on two of the most famous works of Italian literature, Dante Alighieri's *Divine Comedy* and Ludovico Ariosto's *Orlando Furioso*, in a study aiming to quantify the effect on memory of the three principal components of poetic meter – rhyme, accents and verse length. The research, carried out by Sara Andreetta, Oleksandra Soldatkina, Vezha Boboeva and Alessandro Treves of the SISSA cognitive neuroscience group, has revealed a difference between the two works: it seems that Dante's verses have other qualities that tend to impress them on the memory even if the meter is disrupted.

“We selected passages from Dante Alighieri's *Divine Comedy* and Ludovico Ariosto's *Orlando Furioso*, and erased meaning by replacing several keywords with non-words

while maintaining the prosody and meter” says Sara Andreetta, first author of the paper. “We then generated three further versions of each meaningless passage, one without rhyme, one with altered accents, and one with lines of variable length. We ran a specific test with about 130 participants to verify the poetic plausibility of each, i.e. the extent to which the verses 'sounded good' despite the changes, and it turned out that for both Dante and Ariosto the importance of the three components decreases in the order rhyme, accents and hendecasyllables of correct length”.

### Dante has an extra something

“While the effects of our manipulations on the plausibility of Ariosto’s poetry are clear, in Dante’s case they are very nuanced”, the researcher continues. “The difference is even clearer when the effects on memory are measured: the ease of remembering passages of nonsense taken from Ariosto depends on poetic plausibility, while for Dante this relationship does not exist, despite the metrical similarity of their verse, with Dante’s being slightly freer. Even more surprisingly, participants respond more slowly to the test with passages taken from Ariosto, especially when the metric is intact. It seems that Dante’s interesting sounds and syntactic structures are remembered regardless of the metric; while with Ariosto’s lighter and less engaging verse it’s necessary to rely on the metric in order to remember the words, and this takes a little more effort.

### The metric and our brain

The study is currently published as a preprint on biorXiv under the title *‘In poetry, if meter has to help memory, it takes its time’*. Although the research was based on poetry, its results can be extended to the general idea that cognition rests on previously learned patterns, as Sara Andreetta concludes: “Our group studies behavioural schemata, or patterns, sequences of behaviour activated by our brain. In this case we used poetic metric to demonstrate that these patterns are often not rigid structures but guides for memory, which can be recruited or not according to the needs of our thinking and the availability of alternatives.”

---

#### USEFUL LINKS

Full paper:

<https://www.biorxiv.org/content/10.1101/2021.03.14.435310v2>

#### IMAGE

Statue of Dante Alighieri in Florence, Italy  
Credits: Rhodan59, Pixabay

#### SISSA

Scuola Internazionale  
Superiore di Studi Avanzati  
Via Bonomea 265, Trieste  
W [www.sissa.it](http://www.sissa.it)

Facebook, Twitter  
[@SISSAschool](https://www.facebook.com/SISSAschool)

#### CONTACTS

Nico Pitrelli  
→ [pitrelli@sisssa.it](mailto:pitrelli@sisssa.it)  
T +39 040 3787462  
M +39 339 1337950

Marina D'Alessandro  
→ [mdalessa@sisssa.it](mailto:mdalessa@sisssa.it)  
T +39 040 3787231  
M +39 349 2885935