

Why Spritz Works (II): The Rhythm of Reading

When we started to develop Spritz, we showed people various English-language texts. While the results were positive, people expressed concern about how well Spritz would work with non-English languages that could transform small words into large words. German, for example, is notorious for having long words. Spritz handles these challenges elegantly by breaking up and displaying words in the way your brain expects them to be presented.

Another significant factor associated with comprehension is the time required to recognize and process each word as it is spritzed. Because processing times vary for different words, you might assume that the workaround would show long words for a longer amount of time.

In reality, since a word is recognized as one item, spritzing does not decode it character by character. Instead, spritzing decodes the word based on characteristics such as shape, form, and format. Our brain recognizes words as shapes. Consequently, if a word's shape is easy to recognize (i.e., its shape is somewhat unique), the time required to process that word is fast. With this in mind, here's where the way things actually work is counter-intuitive.

Because many short words are similar, their shape is not always easy to recognize. The words "met" and "net," for example, are similar in shape and take a longer time for your brain to process than longer words, which have a higher probability of not being similar in shape to other words. In essence, the shorter the word, the more likely your brain will require additional processing to pinpoint exactly which word you are looking at. This requires longer processing times than it takes to process words with more characters.

Spritz takes into account that different words require different processing times. This contributes to superior comprehension when spritzing. So while spritzing slows down a bit when it encounters long words, significant improvements have been made over traditional reading in this area. Our research shows that words of 4-to-7 characters spritz through a display the fastest. Words of other lengths have an algorithmic slowing applied to them by Spritz that facilitates comprehension based on our exhaustive research.

Our research also shows that the way that you read a sentence controls the speed at which Spritz serves certain areas of content to you. Think of a sentence as a content container. Figuratively, humans store the words we read in temporary memory as we read them. When the sentence ends, usually at a punctuation point such as a period, our brain reassembles all of the words it has read and applies meaning to the sentence as a whole. The Spritz algorithm takes this into consideration when rendering the Spritz stream.

In addition to word display times and the reconstruction of sentence meanings, the overall speed that you are spritzing is also a factor. You might think that faster spritzing results in less understanding. That's only part of the truth. Of course, if you are spritzing way too fast, let's say at 700 words per minute right away, you will have a hard time with the words being displayed. But spritzing too slow is also very frustrating. Think about the news tickers you see at the bottom of some TV broadcasts. They usually are very slow. If you try reading the breaking news in these tickers, it can be very unpleasant because you get bored. In fact, we have recognized in user tests that text comprehension reaches highest values at the (individual) right speed.

As a result, spritzing is like Goldilocks and the Three Bears – you don't want to go too slow or too fast. You want it to be just right. Spritzing should never feel uncomfortable or forced; otherwise, you're doing it wrong. Don't worry about deciding when to increase your spritzing speed. You'll know that the time is right for an increase when your current speed starts to feel agonizingly slow.

In conclusion, what do these details about timing, pauses, and speed tell us? We need to establish the right reading rhythm to reach optimal comprehension and comfort. Spritz technology presets all of the basic parameters and supports readers in customizing their streaming experience. We would like to encourage you to find your own perfect settings for a great text-streaming experience.



