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## Dyslexia: when spelling problems impair writing acquisition

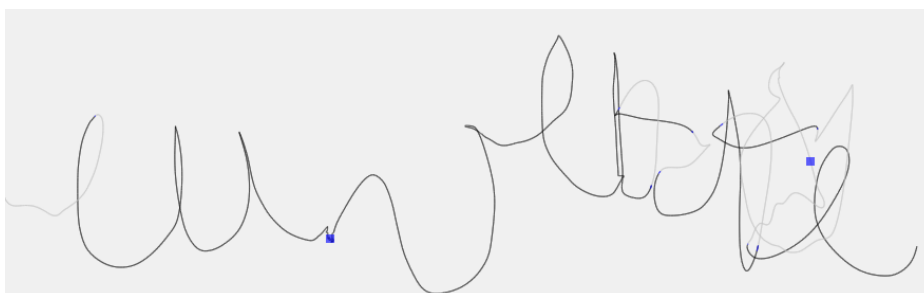
Dyslexia is a learning difficulty which affects the ability to adopt the automatic reflexes needed to read and write. Several studies have sought to identify the source of the problems encountered by individuals with dyslexia when they read. Little attention, however, has been paid to the mechanisms involved in writing. Sonia Kandel, Professor at the GIPSA-Lab of the Université Grenoble Alpes (CNRS/Université Grenoble Alpes/Grenoble INP) and her team<sup>1</sup> decided to look at the purely motor aspects of writing in children diagnosed with dyslexia. Their results show that orthographic processing in children with dyslexia is so laborious that it can modify or impair writing skills, despite the absence of dysgraphia in these children. The findings of this study are published in the November 2017 edition of

*monsieur*

*montagne*



Above: Black lines show what the child actually wrote on the page; grey lines, recorded by the tablet, show in-air movements when the child paused. This example shows that the child started to write; stopped, then continued. The result is an irregularly produced word which presents a spelling mistake at the end. Below: Evolution in speed over time. Grey lines show in-air movements recorded by the tablet.  
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The child had serious difficulties with the double “t” in this word. Black lines show what the child actually wrote on the page; grey lines, recorded by the tablet, show in-air movements when the child paused. Blue squares indicate that the child lifted his or her head to look at the spelling of the word on the computer screen. © Sonia Kandel for GIPSA-Lab (CNRS/Université Grenoble Alpes/Grenoble INP).



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The child with dyslexia wrote: "Le monstre poilu vivait dans une caverne sombre humide et grise au milieu d'une for...". Black lines show what the child actually wrote on the page; grey lines, recorded by the tablet, show in-air movements when the child paused. Blue squares indicate that the child lifted his or her head to look at the text on the computer screen. © Sonia Kandel for GIPSA-Lab (CNRS/Université Grenoble Alpes/Grenoble INP).



: hérisson, printemps (words in red were written by the teacher as a model). © Sonia Kandel for GIPSA-Lab (CNRS/Université Grenoble Alpes/Grenoble INP).

### Bibliography:

The impact of developmental dyslexia and dysgraphia on movement production during word writing

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