

Smartphone writing: A new challenge for orthographic and motor processing

New technological devices are changing the way we communicate. With the popularization of smartphones and tablets some people spend more time writing -texting, emailing, chatting, etc.- than speaking. This project focuses on smartphone writing. This way of writing is very recent in the history of writing (Gnanadesikan, 2009), so there are very few studies on this issue. Most studies evaluate whether texting is “positive” or “negative” for personality or skill learning development in children and teenagers (e.g., Mikulak, 2014). Our project will adopt another perspective. Texting and email writing with smartphones are activities that are done regularly by a very important proportion of the population. They involve a wide range of social and professional activities. Therefore, we believe it is useless to judge whether they are good or bad for us or our children: They are part of our reality.

Smartphones have changed the way we write. This constitutes a scientific, theoretical and methodological challenge for writing research. First, smartphone writing implies a new way of processing orthographic information for spelling retrieval. When writing on a smartphone, spelling retrieval is no longer a mere recall of orthographic information like in handwriting or typing. It is modulated by reading processes. Indeed, smartphones propose two or three word choices before we finish writing the word. When writing the French word PARFUM for example, there are several words that appear as choices -PARDON, PARTIR, PARCOURS- while writing letters P and A. Then, when PARF is written, the smartphone proposes words PARFAIT, PARFUM, and PARFOIS until we select PARFUM. This back and forth process of writing, reading and choice selection transforms completely the processing of orthographic processing in writing. The spelling choices smartphones provide re-activate orthographic selection processes that do not occur in handwriting or typing. This constitutes an important change in the way theoretical models account for word writing.

Second, smartphone writing also involves a kind of motor processes that have never been investigated before. The first difference concerns the support itself. Unlike typing, word writing is done on a virtual touch keyboard. Another difference concerns the effectors that we use to write. Smartphone writing varies from one person to another. Some people write bi-manually with the thumbs and others use the index finger and/or the thumb of the dominant hand (Cerni et al., 2016). Therefore, this new way of writing requires a radically different scientific approach of the motor control of the hand.

During the Master 2 internship, we will carry out a pilot experiment to investigate the impact of reading word choices on thumb writing. Although all smartphones propose word choices, there is scarce scientific information on how the human cognitive systems processes this information. To carry out this study, we will have to overcome several technical difficulties related to the collection of data from the smartphone. Then, we will replicate - with smartphones- a handwriting experiment conducted by our team so we can evaluate the impact of the change of writing device on orthographic processing (Roux et al., 2013; Palmis et al., 2019). See scientific publications on this topic at http://www.gipsa-lab.fr/~sonia.kandel/publications_en.html

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