Thematic issue for Topics in Language Disorders

Spelling across language systems and languages

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Writing is more important than ever in the 21st century. As children progress through school, the expectation for the length and quality of their writing increases (Nelson, 2010). Spelling is a key skill for efficient writing. Proficient spelling is crucial in communication and in convincing someone of your expertise (Harris, Graham, Brindle, & Sandmel, 2009; Vanderswalmen, Vrijders, & Desoete, 2010). In addition spelling is needed for full participation in literate societies (Daffern & Mackenzie, 2018).

Writing systems differ (Daniels & Share, 2018; Tong, McBride-Chang, Shu, & Wong, 2009). When children learn to spell, they learn that spoken words consist of sounds which can be represented by letters (in alphabetic languages such as Dutch, English, German, Italian,…) or pictophonetic characters (in Chinese). Alphabetic languages differ in the degree of transparency of the mappings between the phonemes (sound) and graphemes (letters).

Transparent languages and orthographic systems are characterized by a high degree of consistency in the translation of phonemes into graphemes. These languages are mainly governed by phoneme-to-grapheme correspondence rules (Defior, Jimenez-Fernandez, & Serrano, 2009), with a clear grapheme-to-phoneme correspondence. In contrast, opaque or deep orthographic systems, such as English, have graphemes with various corresponding phonemes and vice versa (Vanderswalmen et al., 2010; Verhoeven et al., 2006).

Although spelling problems are common in alphabetic and nonalphabetic languages as well as in languages with regular and irregular orthographies (Angelelli, Notarnicola, Judica, Zoccolotti, & Luzzatti, 2010), there is less research on spelling than on reading (Büttner & Hasselhorn, 2011, Tops, Callens, Bijn, & Brysbaert, 2014). This thematic issue assembles studies that address the topic of 'languages and language systems' - that appear impacting students' learning of spelling.

This topic generates a debate among authors that have been challenged to examine, explore, illustrate and critically discuss the available research evidence on alphabetic transparent (e.g. Italian), (semi-) transparent (e.g., German and Dutch) compared to more opaque (e.g. English) languages. The authors were charged to consolidate a description of their language and orthography with a study and their clinical experience and scholarship in this area to spur the conversation about spelling and individual differences.

Studies all over the world have agreed that spelling problems are a common characteristic of dyslexia (Angelelli, 2010; Duranovic, 2017; Tops et al., 2014). If spelling poses ongoing challenges, children may even develop a negative mindset about themselves as a speller and avoid writing, leading to 'arrested spelling development' (Daffern & Mackenzie, 2018;

Graham & Santangelo, 2014). In addition also some children with dyscalculia (but no dyslexia) encounter more problems with spelling compared to peers without learning disabilities (Pieters, Roeyers, Rosseel, Van Waelvelde, & Desoete, 2015). However, up till now, the nature of these spelling difficulties seems not always to be consistent. One way to disentangle the question of what components are involved in spelling, is to compare errors and subskills in different countries. Such an analysis among languages might be useful for diagnosticians and educators to obtain critical information not typically reflected in standard scores (Duranovic, 2017). Therefor this issue intentionally compares spelling (sub)skills and knowledge in typical and atypical developing school-age children in different languages.

First, Kargl and colleague (2018) describe the German language. They provide insightful information about the highly consistent grapheme-phoneme correspondence, lower consistency of phoneme-grapheme correspondence and the very high morphological consistency of the German language and orthography. They illustrate how even poor spellers are well able to produce phonologically adequate spellings early on, but how the acquisition of morphology-based orthographic markers is a long-term enterprise. In addition, they address the issue of spelling skills in children aged between 9 and 13 years, attending Grades 4 to 7 in Austria and Germany and expand on spelling support in poor and average spellers. Kargl and colleague provide promising evidence for a morphologically-structured intervention that is efficient to improve spelling beyond a phonology-based strategy of simple phoneme-grapheme translation.

Van Vreckem and colleague (2018) then present Dutch, as moderate transparent language and orthography. They illustrate how children with and without dyslexia from grades 2 to 6 (mean age around 10 years) differ on phonological, orthographic and morphological spelling skills. Next they add to the landscape of subskills that in Dutch the spelling of some words must be memorized, because phonological and morphological skills alone do not help and the spelling cannot be reconstructed on the basis of a rule. Some Dutch words remain difficult to spell often because of the word's etymology (Tops et al., 2014; Van Vreckem, 2018).They provide insightful information on how Dutch speaking children without dyslexia remain to have problems with phonology and pseudowords even in grade 6. They suggest the use of pseudowords in older children with dyslexia to get a reliable identification of spelling problems in Dutch speaking children.

Arfé (2018) presents Italian, as transparent language. She reminds readers of the learning problems of children with dyslexia with encoding the grapheme-phoneme correspondence regularities underlying the spelling skills. She demonstrates that the core problems in dyslexia in Italian speaking children might be an inaccurate mapping between phonological and orthographic spelling units. She further expands on the effectiveness of 'implicit instruction' when supporting children's mapping processes in these children (mean age around 9 years, ranging 7-11 years) with dyslexia speaking and writing Italian. Arfé reminds readers that implicit learning of statistical regularities is likely easier in shallow orthographies, like Italian, where the phoneme-grapheme correspondences are based on a delimited set of phoneme-grapheme associations than in other orthographies that are less transparent, like the English orthography. However, the success of this intervention in Italy suggests that we should not forget the impact of learning processes supported by modeling the integration of auditory-phonological and visual-orthographic word encoding, that promote and sustain the learning of children.

The implications of the studies for future research on assessment and intervention are interesting. Instructional priorities should take into account a student's strengths and needs as displayed by their application of the components of spelling (Daffern, 2017). It is our hope that the readers of this issue will become better acquainted with the specific challenges of spelling problems of children with dyslexia and some of the guiding principles and evidence based assessment techniques and educational interventions that have been recommended by the authors. Although there continues to be a need for further research to inform our work on spelling and dyslexia, it remains critical that all professionals work collaboratively with each other in different countries in the meantime to address the varied needs of these students reading and spelling in different languages.

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