Editorial introduction

Developmental disorders of language and literacy: Special issue

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Language and literacy are cognitive skills of exceptional complexity. It is therefore not surprising that they are at risk of impairment either during development or as a result of damage (e.g. stroke) later in life. Impaired language and literacy can arise from a general learning impairment. However, two developmental disorders, specific language impairment (SLI) and dyslexia, which affect oral and written language, respectively, are 'specific' in that they are not part of a more general learning difficulty. SLI and dyslexia each affect 5–10% of the general population, and they are the focus of the papers in this special issue.

A major reason why developmental psychologists study disorders of language and literacy is that these disorders can provide unique insight into the cognitive processes that support the typical development of language and literacy. Skills and abilities that typically develop in concert can be teased apart, revealing the contribution of different aspects of cognition to the complex tasks of producing and understanding language, and of spelling, reading, and understanding text. And yet, language and literacy disorders are not 'all or nothing'. For example, Boets et al. (pp. 5–31) argue that the familial risk for dyslexia is continuous, i.e. although some children with a first degree relative who is dyslexic will not go on to have dyslexia themselves, they may suffer lower scores on reading, spelling, and phonological tasks than low-risk children. This finding has implications for our understanding of individual differences within the 'typical' population.

Studying disorders of language and literacy has the additional benefit that it enables developmental psychology to extend beyond its traditional boundaries; measures originally developed to assess the cognitive traits of children with developmental

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disorders are now being used in investigations of the neurological and genetic underpinnings of language and literacy (e.g., Fonteneau & van der Lely, 2008; Newbury et al., 2009).

The aim of this special issue is to bring together some of the best current research into developmental disorders of language and literacy. We are proud to include studies that are exploratory in that they tackle new, or relatively new, areas: for example, sign language impairments in deaf children who use British Sign Language (Mason et al., pp. 33–49), and the ability of children with SLI to use gesture (Botting et al., pp. 51–69) and to carry out deductive reasoning tasks (Newton et al., pp. 71–87). These promise to provide the foundations for further, more detailed, research.

Other papers included here build on extensive existing research to implement detailed longitudinal studies: of mathematical development in children with phonological difficulties (Jordan et al., pp. 89–107), reading, and phonological development of children at risk of dyslexia (Boets et al., pp. 5–31), and the development of reading in children with SLI (St Clair et al., pp. 109–131). Longitudinal designs enable researchers to investigate how two or more skills interact over time, a point nicely illustrated by Boets et al. (pp. 5–31); by conducting a retrospective study of children at high and low risk of dyslexia they find a bidirectional relation between reading and phonological awareness, indicating that impaired phonological awareness is not only the cause, but also the result, of poor reading. Studies such as these are important because they directly address Karmiloff-Smith’s (1998) point that development itself is key to understanding developmental disorders.

The principal theme that emerges from many of the papers in this special issue is that language and literacy interact with each other and with other cognitive processes during development in complex ways. This complexity is highlighted by Booth et al. (pp. 133–176), who explore the interaction between reading and executive function in a meta-analysis of 48 previous studies, and show that children with reading difficulties have impairments on a range of tasks of executive function; by Newton et al. (pp. 71–87), who investigate deductive reasoning in children with SLI and find that they have particular difficulties making relational inferences; by Botting et al. (pp. 51–69), who study the comprehension and production of representational gestures in children with SLI and find that they have no difficulties with gesture, and might instead be continuing to use gesture to scaffold their language development beyond the age at which this would be typical; by St Clair et al. (pp. 109–131), who study the contribution of language impairment and autistic symptomatology to reading accuracy and reading comprehension, and make the striking claim that poor reading skills may be influential in the development of autistic symptomatology in some individuals with SLI during adolescence; and by Jordan et al. (pp. 89–107), who find that, for children with poor phonological abilities at the age of 5, half of those whose mathematical scores are within norm go on to show mathematical impairments by the time they are 7.

A second theme emerges from four of the papers in this issue (Boets et al., pp. 5–31; Mason et al., pp. 33–49; Rispens & Parriger, pp. 177–188; Stavrakaki & van der Lely, pp. 189–216), namely the value of cross-linguistic research. To date, it is fair to say that the great majority of research into language and literacy disorders has been carried out with children who are learning to speak, read, and write English. Yet only certain features of language and literacy disorders are common across languages and orthographies - others are specifically related to the properties of the particular language and orthography being learnt. Knowing which features are language and orthography specific, and which are more general in nature, has important implications...
for how language and literacy impairments are identified, and how children are best supported once a diagnosis has been made.

A further benefit of studying languages other than English is that it enables us to test models of the underlying disorder, models that have themselves been proposed on the basis of mostly English data. The paper by Stavrakaki and van der Lely (pp. 189-216) is an excellent example of this approach; the authors test several competing models of the underlying deficit in SLI by studying Greek, whose rich system of pronouns allows the differing predictions of the relevant models to be tested in a way that is not possible in English. Similarly, the claim that SLI exists in British Sign Language (Mason et al., pp. 33-49), in other words among children who communicate in the visuospatial modality, challenges the theory that SLI is caused by an impairment in processing auditory material.

With respect to literacy, Rispens and Parriger (pp. 177-188) address the issue of comorbidity between SLI and dyslexia in Dutch-speaking children. Although they are defined as ‘specific’ disorders, SLI and dyslexia co-occur at higher rates than would be expected by chance. This issue of comorbidity has received extensive recent coverage but there is little consensus (e.g. Bishop & Snowling, 2004; Catts, Adlof, Hogan, & Weismer, 2005; papers in Messaoud-Galusi & Marshall, 2010), and data from languages other than English are vital pieces in this puzzle.

Last but not least, we believe that the papers in this special issue reveal, in the variety of their research questions, theoretical frameworks, participant groups, and methodologies, that the field of developmental psychology as it relates to disorders of language and literacy is a rich and vibrant one.

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References


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