Submission of Evidence to the APPG on Oracy

1. Basic Research Findings

March 2021

Contributors:

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Professor Charles Hulme FBA is Professor of Psychology and Education at the University of Oxford and a William Golding Senior Research Fellow at Brasenose College. He is an expert on randomized controlled trials in Education and he has worked to develop a series of evidence based oral language interventions. He has also developed a range of assessment materials including the York Assessment of Reading for Comprehension (2009), the Phonological Abilities Test (1997), Sound Linkage (2014) and The Test of Basic Arithmetic and Numeracy Skills (2015).

The Importance of Oral Language: Key Points

- Oral language skills are of critical importance for educational attainment and psycho-social development in childhood and ultimately for adult wellbeing and mental capital.
- Oral language skills are a fundamental component of school 'readiness' and provide a foundation for learning across the curriculum. Oral language skills are critical for the development of literacy[1] and numeracy.
- Communication skills are vital for success in further and higher education and later in the workplace.
- Although language is a dimensional skill, children with significant and persistent language difficulties (Developmental Language Disorder; DLD) are at high risk of severe disadvantage in all aspects of education with knock-on effects in adulthood.

Research Evidence Underpinning Theoretical Background

Structure of Language

Language is a complex system. It is conventional to separate structural aspects of language (phonology, grammar and semantics) from pragmatic aspects. The work of our group has focused on structural aspects, in particular, vocabulary and narrative skills (receptive and expressive) and their relationships to reading and arithmetic. While recognizing that oracy is multi-componential, research has shown that it can be considered a unitary factor as a

[1] https://acamh.onlinelibrary.wiley.com/doi/full/10.1111/jcpp.13324

predictor of educational achievement[2]. Furthermore, our research for the 'Better Communication Project' following the Bercow Report showed that teachers' ratings on the Early Years Foundation Stage Profile (2003) for language correlated almost perfectly (r=.9) with their ratings of children's other cognitive, motor an related skills as well as with their knowledge of the world[3]. Notwithstanding this, the initial report of the APPG on Oracy does not, in our view, stress the importance of listening skills and listening comprehension strongly enough.

Language as a Foundation for Literacy and Numeracy Skills

There is evidence for a causal role of f phoneme awareness and letter knowledge in learning to decode print[4] . In parallel with this view, the phonological (speech-sound) system of language has for many years been viewed as most critical for learning to read. However, recent research emphasizes the importance, earlier in development, of a sound foundation in all aspects of language as a springboard for learning to read[5], [6] . Our research has shown that language skills measured at age 3½ years predict phoneme awareness, letter knowledge and rapid naming (RAN) skills at age 5 ½ years which, in turn predict word reading at age 6 ½ years[7]; in turn decoding at age 6½ years together with oral language skills predicts individual differences in reading comprehension at age 8-9 years. In the same study, we showed that early language and executive skills predict variations in preschool verbal number skills (counting), which in turn, predicted arithmetic skills (adding and subtracting) in school.[8]

Two further findings from this study examining the home learning environment of preschool children are worthy of note. First, a composite measure of family socio-economic status was a strong predictor of children's oral language skills at age 4 and of their shared reading experiences[9]. Second, the effects of home literacy environment on children language and reading at age were almost completely accounted for by maternal language and literacy

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[2] Lervag et al; Lyster et al.,

[3] Snowling et al (2011) *Better communication research project: Language and Literacy Attainment of Pupils during Early Years and through KS2: Does teacher assessment at five provide a valid measure of children's current and future educational attainments? DFE-RR172a.* London: DfE

[4] Hulme, C., Bowyer-Crane, C., Carroll, J. M., Duff, F. J., & Snowling, M. J. (2012). The causal role of phoneme awareness and letter-sound knowledge in learning to read: Combining intervention studies with mediation analyses. *Psychological science*, *23*(6), 572-577.

[5] Storch, S. A., & Whitehurst, G. J. (2002). Oral language and code-related precursors to reading: evidence from a longitudinal structural model. *Developmental psychology*, *38*(6), 934.;

[6]Snowling, M. J., & Hulme, C. (2020). Annual Research Review: Reading disorders revisited–the critical importance of oral language. *Journal of Child Psychology and Psychiatry*.https://acamh.onlinelibrary.wiley.com/doi/full/10.1111/jcpp.13324

[7] Hulme et al., 2015 doi: 10.1177/0956797615603702

[8] Moll, K., Snowling, M. J., Göbel, S. M., & Hulme, C. (2015). Early language and executive skills predict variations in number and arithmetic skills in children at family-risk of dyslexia and typically developing controls. *Learning and Instruction*, *38*, 53-62.

[9] Hamilton, L. G., Hayiou-Thomas, M. E., Hulme, C., & Snowling, M. J. (2016). The home literacy environment as a predictor of the early literacy development of children at family-risk of dyslexia. *Scientific Studies of Reading*, *20*(5), 401-419.

skills[10]. Thus, we found that maternal language and phonological skills respectively predicted children's language and reading/spelling skills. However, after accounting for variations in maternal language, storybook exposure was not a significant predictor of children's outcomes. In contrast, direct literacy instruction in literacy remained a predictor of children's reading/spelling skills. These findings suggest that the effects of social disadvantage may be transmitted through the home learning experiences of preschool children and that, because of the association between poorer caretaker language and poorer child outcomes, support should be directed towards caregivers working with their children[11].

Impact of Poor Language

The nature and developmental consequences of childhood language difficulties are well recognized.[12] The clearest evidence comes from longitudinal studies of representative samples[13] and from studies that follow up children with developmental language disorders[14].

The evidence submitted here comes from two UK studies: the Newcastle Study of Children with Specific Language Impairment and the Wellcome Language and Reading Project. The original research used the term specific language impairment (SLI) to describe children's language disorder; the newer term 'DLD' will be used here: https://www.youtube.com/watch?v=OZ1dHS1X8jg&t=6s

Newcastle Study (DVM Bishop, Snowling & colleagues)

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[10] Puglisi, M. L., Hulme, C., Hamilton, L. G., & Snowling, M. J. (2017). The home literacy environment is a correlate, but perhaps not a cause, of variations in children's language and literacy development. *Scientific Studies of Reading*, *21*(6), 498-514.

[11] Burgoyne, K., Gardner, R., Whiteley, H., Snowling, M. J., & Hulme, C. (2018). Evaluation of a parent-delivered early language enrichment programme: Evidence from a randomised controlled trial. *Journal of Child Psychology and Psychiatry*, *59*(5), 545-555.

[12] Bishop, D. V., Snowling, M. J., Thompson, P. A., Greenhalgh, T., Catalise-2 Consortium, Adams, C., ... & house, A. (2017). Phase 2 of CATALISE: A multinational and multidisciplinary Delphi consensus study of problems with language development: Terminology. *Journal of Child Psychology and Psychiatry*, *58*(10), 1068-1080.

[13] Catts, H. W., Fey, M. E., Tomblin, J. B., & Zhang, X. (2002). A longitudinal investigation of reading outcomes in children with language impairments; Reilly, S., Bavin, E. L., Bretherton, L., Conway, L., Eadie, P., Cini, E., ... & Wake, M. (2009). The Early Language in Victoria Study (ELVS): A prospective, longitudinal study of communication skills and expressive vocabulary development at 8, 12 and 24 months. *International Journal of Speech-Language Pathology*, *11*(5), 344-357.

[14] Conti-Ramsden, G., & Botting, N. (1999). Classification of children with specific language impairment: Longitudinal considerations. *Journal of Speech, Language, and Hearing Research*, *42*(5), 1195-1204.; Catts, H. W., Fey, M. E., Zhang, X., & Tomblin, J. B. (2001). Estimating the risk of future reading difficulties in kindergarten children.

This was a prospective, longitudinal study following 87 language-impaired children at the ages of 4, 4½, and 5½ years[15] subsequently followed at age 8½[16] and age 15-16 years[17].

At age 5½ years, 37% of children, termed the "good outcome group," had resolved their language difficulties. The best predictor of outcome at this age was the ability to tell back a simple story to pictures (narrative skill).

At age 8½ years, those with resolved language difficulties has made a good start on literacy; those with persistent problems experienced poor reading comprehension.

At age 15-16 years, children whose language problems had resolved performed within the normal range on tests of vocabulary and language comprehension skills but less well in literacy attainments[18] and their educational attainment (as measured by GCSE performance) was poorer[19]. Children whose language difficulties persisted at 5½ years had significant impairments in all aspects of spoken and written language functioning and they had fallen further behind their peer group in vocabulary growth over time.

We also showed that the group with persistent language problems had worse psychosocial outcomes, with a raised incidence of attention and social difficulties[20].

Wellcome Language and Reading Project (Snowling, Hulme and colleagues)

This study followed three groups of children between 2007 and 2013: children with preschool language impairment; children at family risk of dyslexia and children free of a history of reading difficulties and without language problems. Importantly, there was overlap between the groups: when assessed at 3½ years, almost one third of the children at family risk for dyslexia met diagnostic criteria for DLD[21]. We assessed the children annually

[15] Bishop, D. V. M., & Edmundson, A. (1987). Language-impaired 4-year-olds: Distinguishing transient from persistent impairment. *Journal of speech and hearing disorders*, *52*(2), 156-173.

[16] Bishop, D. V., & Adams, C. (1990). A prospective study of the relationship between specific language impairment, phonological disorders and reading retardation. *Journal of child psychology and psychiatry*, *31*(7), 1027-1050.

[17] Stothard, S. E., Snowling, M. J., Bishop, D. V., Chipchase, B. B., & Kaplan, C. A. (1998). Language-impaired preschoolers: A follow-up into adolescence. *Journal of Speech, Language, and Hearing Research*, *41*(2), 407-418.

[18] Snowling, M., Bishop, D. V. M., & Stothard, S. E. (2000). Is preschool language impairment a risk factor for dyslexia in adolescence?. *Journal of Child Psychology and Psychiatry*, *41*(5), 587-600.

[19] J. Snowling, M., Adams, J. W., Bishop, D. V., & Stothard, S. E. (2001). Educational attainments of school leavers with a preschool history of speech-language impairments. *International Journal of Language & Communication Disorders*, *36*(2), 173-183.

[20] Snowling, M. J., Bishop, D. V. M., Stothard, S. E., Chipchase, B., & Kaplan, C. (2006). Psychosocial outcomes at 15 years of children with a preschool history of speech-language impairment. *Journal of Child Psychology and Psychiatry*, *47*(8), 759-765.

[21] Nash, H. M., Hulme, C., Gooch, D., & Snowling, M. J. (2013). Preschool language profiles of children at family risk of dyslexia: continuities with specific language impairment. *Journal of Child Psychology and Psychiatry*, *54*(9), 958-968.

from age 3½ to 9 years, twice before they entered school and three times during the school years, plus a further one-year follow-up. Children were classified according to both reading and language status when most were in the third year of formal schooling.

Children with a poor language outcome (DLD) showed a wide range of impairments in the preschool period, including poor pre-reading skills and problems with executive and motor tasks outside of the verbal domain. The difficulties of children with a dyslexic outcome (without DLD) are more specific, although they show increasing difficulty on language tasks in the school years.[22]

At age 9 years, using a cut-off at the 10th centile, 34% of children with preschool language difficulties have reading disorder/dyslexia and 39% had mathematics disorder/dyscalculia[23]. Reading disorder often co-occurred with mathematics disorder and many cases—particularly in the comorbid group—also reached the diagnostic threshold for developmental language disorder (DLD).

Finally, children with DLD were at high risk of reading comprehension difficulties[24]. Furthermore, consistent with the findings from the Newcastle study (above), children whose language disorder had resolved by age 5½ years were less likely to experience difficulties than those whose problems were persistent or had emerged around school entry.[25]

Additional Observations

At entry to University, there is an observable gap in the ability of children from advantaged versus less advantaged backgrounds in their communication skills (anecdotal evidence). This gap plays out as differences in attainment and progression (Office for Students). Outreach strategies for secondary school pupils (e.g. Inspire https://www.sjc.ox.ac.uk/discover/news/exciting-developments-inspire-programme-during-michaelmas-2019/) and foundation year curricula https://www.ox.ac.uk/admissions/undergraduate/increasing-access/foundation-oxford recognize the importance of training in communication skills. However, arguably, this may be too little too late and the rationale for much earlier intervention is strong.

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[22] Snowling, M. J., Nash, H. M., Gooch, D. C., Hayiou-Thomas, M. E., Hulme, C., & Wellcome Language and Reading Project Team. (2019). Developmental outcomes for children at high risk of dyslexia and children with developmental language disorder. *Child development*, *90*(5), e548-e564.

[23] Snowling, M. J., Moll, K., & Hulme, C. (2021). Language difficulties are a shared risk factor for both reading disorder and mathematics disorder. *Journal of Experimental Child Psychology*, *202*, 105009.

[24] Snowling, M. J., Hayiou-Thomas, M. E., Nash, H. M., & Hulme, C. (2020). Dyslexia and Developmental Language Disorder: comorbid disorders with distinct effects on reading comprehension. *Journal of Child Psychology and Psychiatry*, *61*(6), 672-680.

[25] Snowling, M. J., Hayiou-Thomas, M. E., Nash, H. M., & Hulme, C. (2020). Dyslexia and Developmental Language Disorder: comorbid disorders with distinct effects on reading comprehension. *Journal of Child Psychology and Psychiatry*, *61*(6), 672-680.

In a recent survey, we asked teachers '*what is the most important challenge you face in supporting less advantaged children when they start school*', most responded that they have problems with language and communication which makes them difficult to teach. When asked, '*on what do you mainly spend your 'pupil premium' [for disadvantaged children] in the Early Years*', the most frequent responses indicated they funded extra support with literacy or with numeracy (and not on language intervention). It could undoubtedly be argued that this response is a regrettable consequence of high stakes testing in reading; while screening to identify children who are slow to learn to read can be justified, it is increasingly apparent that to ignore a shaky foundation in oral language skills has longer term and wider implications.

Educational Implications

Together this evidence provides a prima facie case - not only for Oracy in the curriculum - but also for language interventions. It is important to recognize that a universal oracy strategy could actually risk widening the gap between those with good language – who will build further on this – and those with poor language who do not have the optimal competence to benefit; this latter group will include those whose parents do not speak English as their first language. We argue that it is important to assess language in its own right at school entry rather than, as in the Reception Baseline Assessment, in literacy, communication and language together (LCL). It is possible to do this quickly and reliably (see separate submission by Hulme & Snowling). Similarly, we stress the importance of implementing evidence-based oral language interventions[26].

[26] Hulme, C., Snowling, M. J., West, G., Lervåg, A., & Melby-Lervåg, M. (2020). Children's language skills can be improved: lessons from psychological science for educational policy. *Current Directions in Psychological Science*, *29*(4), 372-377.