Early Predictors of Phonological and Morphological Awareness and the Link with Reading: Evidence from Children with Different Patterns of Early Deficit

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This study examines the contribution of early phonological processing (PP) and language skills on later phonological awareness (PA) and morphological awareness (MA), as well as the links between PA, MA, and reading. Children with poor early PP are more at risk of developing deficits in MA and PA than children with poor language. There is a direct link between PA and reading accuracy and between MA and reading comprehension that cannot be accounted for by strategy use at the word level.

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This study examines the contribution of early phonological processing (PP) and language skills on later phonological awareness (PA) and morphological awareness (MA), as well as the links between PA, MA, and reading. Children aged 4–6 years with poor PP at the start of school demonstrated weaker PA and MA after 3 years regardless of their language skills. Children with poor early PP are more at risk of developing deficits in MA and PA than children with poor language. There is a direct link between PA and reading accuracy and between MA and reading comprehension that cannot be accounted for by strategy use at the word level.

- Languages of European origin are morphophonemic in structure, meaning words are constructed via a combination of phonological and morphological rules.
- A strong association has been found between reading and spelling of English and both PA and MA.
- Previous research has shown that PP and language skills in early childhood are linked to the development of explicit PA and MA.

Early predictors of PA

- PA refers to awareness of parts of speech (syllables, rhymes, and phonemes) that create meaning when combined to make a word.
- Implicit PA starts to develop before school age, whereas explicit PA develops during the early school years.
- General PP skills are a key predictor of explicit PA.
- PP is defined as remembering, comparing, and learning the sound structures of words.
- Implicit awareness of syllables and rhymes predicts explicit PA.
- It has been suggested that early vocabulary development lead to gains in PA via a process of ‘lexical restructuring’.

Early predictors of MA

- MA refers to awareness of the smallest units of meaning.
- Morphologically complex words are spelled by combining a 'base' word with an affix or inflection.
- One theory is that MA arises from a broad base of oral language skills.
- An alternative view implicates early PP, suggesting that phonological skills underlie the development of syntactic and semantic aspects of language, both of which are represented in MA.

Links between PA, MA, and reading

- The link between PA and reading is well established.
- The link between MA and word reading is relatively under-researched.
- However, many studies have shown that MA contributes variance to word reading independently of PA.
- MA contributes to reading comprehension beyond vocabulary.
- PA generally does not predict reading comprehension once word reading has been controlled.

Study

The present study follows up children initially recruited for a previous study comparing children at risk of reading difficulty with no-risk controls.

Research questions:

1. *What is the predictive effect of early PP and language*

skills on later PA, MA, and morphological and phonological strategy use for reading and spelling?

2. *Are PA and MA linked to phonological and morphological strategy use for literacy?*
3. *Is there a direct link between PA, MA, and reading accuracy and comprehension that cannot be explained by phonological or morphological strategies at the word level?*

Method

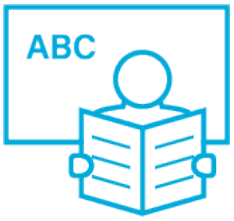
Four subgroups were identified from 198 children initially tested during kindergarten or 1st grade when they were 4–6 years old. In total, 82 children were at risk of reading difficulties, and 116 children had no known risk factors. The final sample tested at Time 2 included 18 with double deficits, 15 with a single PP deficit, 17 with a single language deficit, and 114 with no deficit, from which 24 were placed in the matched no deficit group. Thus, the final sample comprised 74 children for the dynamic tasks.

Findings

- In the case of PA, the mean level was higher in the double deficit compared to the single PP deficit group.
- On the dynamic PA task, children with low PP at Time 1 had significantly poorer PA at Time 2 regardless of language group.
- For the dynamic morpheme task, children with poor PP at Time 1 had significantly poorer MA at Time 2 regardless of language group.
- For phonological reading, the effect of the PP group was

near significant, whereas the effect of the language group was not.

- For phonological spelling, the effect of the PP group was significant, whereas the language group was not.
- For morphological reading, neither the PP group nor language group were significant.
- For morphological spelling, the PP group had a near-significant effect, whereas the language group was non-significant.
- In regression analyses, PP significantly predicted PA, MA, and phonological and morphological strategy use for nonword reading and spelling. Language made an additional contribution to MA only.
- PA predicted all four nonword measures, but MA made no significant additional contribution.
- Dynamic PA, phonological reading, and morphological reading were unique predictors of reading accuracy, whereas MA was the only unique predictor of reading comprehension.



Conclusions and implications

The results clearly demonstrated that the two groups of children with poor PP were consistently at risk of difficulties in both phonological and morphological areas. These findings suggest that children with poor language but good phonology at the start of school have relatively good outcomes. As children learn a wider variety of complex words, good PP skill may enable them to detect and process morphological regularities and affixes. Both phonological and

morphological strategy use for nonword reading and spelling were predicted by PA but not MA. PA and phonological and morphological reading made a unique contribution to the prediction of reading accuracy. The results do support the hypothesis that PA has a direct effect on reading accuracy beyond its effect on sounding out unknown words. MA had a direct effect on reading comprehension after the effect of PA and nonword decoding had been partialed out. Based on the results of the present study, teachers may be able to select a clear group for additional support. It may also be beneficial for teachers to include more specific teaching of morphemes such that children learn to link morphology to the reading and spelling of new words.