

Albert Anker, 1862. The school exam



Developmental Dyslexia

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Lecture 6, 29.10.2020



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Register [IN CLASS ATTENDANCE ONLY!]

- Please go to [Menti.com](https://www.menti.com)
- ID: 20 71 37 4
- Include your full name to be added to the register if you are in the classroom (this is for track and trace purposes)



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Q & A ON PRE-RECORDED LECTURE & SEMINAR

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Today's session

- Training (intervention) studies
 - Methodological considerations
 - Intervention programmes supporting the phonological deficit theory of dyslexia
- The procedural learning deficit theory
 - Evidence against the theory: West et al. 2018
 - Applying your knowledge: evaluating an intervention designed in line the procedural learning theory



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If A causes B, then training A should improve B

Problems with phonology (e.g., PA) and learning to map grapheme -phoneme correspondences → reading difficulties

↪ Treatment that helps overcome these problems will be effective for children at risk of or diagnosed with dyslexia



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If training B improves A, then B is the cause of A

Problems with phonology (e.g., PA) and learning to map grapheme -phoneme correspondences → reading difficulties

Treatment that helps overcome these problems will be effective for children at risk of or diagnosed with dyslexia



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Training studies: methods

- Who is it for:
 - Prevention (children at risk of dyslexia) vs remediation studies (children diagnosed with dyslexia)
- How long/intensive?
- How long lasting (delayed post-test)?
 - Effects need to withstand the test of time
- Who will deliver
 - Specialist teachers vs. parents vs. teaching assistant



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Training studies: design

- **Pre vs post-test design** ETHICS?
- Control group design (untrained, alternative treatment)
- Studies with participant matching
- Case control (observational) studies
- Interrupted time series design
- Randomized Controlled Trials (RCTs)



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RCTs

- 'Gold standard' for evaluating the efficacy of healthcare interventions (Schulz et al., 2010)
- Increasingly popular for the evaluation of educational interventions
- Allocation at 'random' to treatment vs control group: control for third variables
- **Transparency of hypotheses, outcome measures, flow of participants, analyses, interpretation, generalisability of results**



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Bradley & Bryant (1985)

- Who? Children identified as poor readers in previous longitudinal study
- Tested causal influence of PA on literacy via a **training study**
 - Theoretically irrelevant (though otherwise beneficial) treatment group (semantic training)
 - Untrained control group
 - 40 x 10 min. Individual sessions over 2 years



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Bradley & Bryant (1985)

• Design

- PA training – ‘Odd-one-out alliteration’ activities → 
- PA + letter/phonics training
- Conceptual/semantic training controls → 
- Untrained controls (baseline)

What is the strictest comparison and why?



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Bradley & Bryant (1985)

Post training effects on reading and spelling

- PA Group:** 3 & 6 months n.s. gains vs group C (8 & 10 month gains respectively vs. group D) 
- PA + Phonics Group:** Best results: 8 & 17 months sig. gains vs. group C (14 & 24 month gains vs group D)
- Conceptual Group:** Marginal effects on literacy progress
- Untrained Control Group:** n.s. effect on gains in literacy



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The phonological linkage hypothesis

- Finding suggest that integration of PA AND explicit instruction in the links between letters and sounds (phonics) > PA alone
- This hypothesis was tested by Hatcher, Hulme, & Ellis (1994) using a controlled design. Children participating in this study were identified through a countywide screening of all children in their third year in school.



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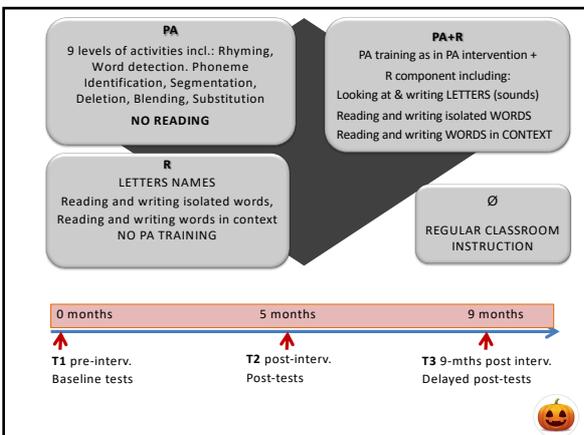
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The sound linkage study

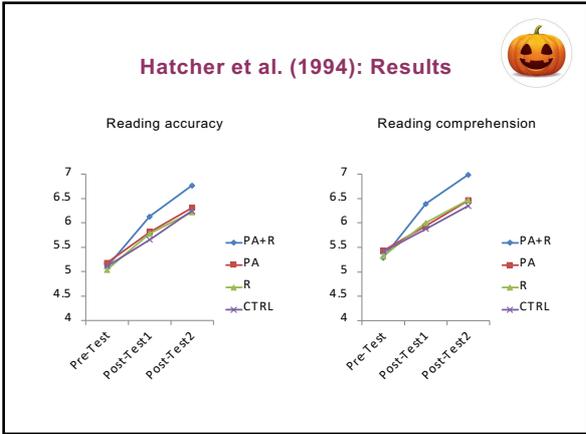
- Classroom implemented longitudinal intervention with 7-year-old poor readers (bottom 10% of the population)
- Matched assignment to 4 groups (not random assignment)
 - (a) Reading with Phonology; (b) Reading Alone; (c) Phonology Alone, (d) Control (business as usual)
- 40 x 30-min sessions over 20 weeks in individual sessions
- 'Phonological Linkage' hypothesis:
 - PA + Reading (Phonics) > PA only
 - PA + Reading (Phonics) > Reading (Phonics) only



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Hatcher et al.: Summary & Conclusions

- Training PA, LK or Reading on their own has weak impact on literacy development
- Combine PA and LK/Phonics instruction produces greatest gains in reading and spelling achievement
- Suggests that explicit teaching of the links between phonemes and letters promotes most effective foundation for literacy growth (especially for children at risk/experiencing literacy difficulties)
- Findings hold in intervention studies delivered by mainstream teachers and teaching assistants (Hatcher et al. 2004, 2006) 

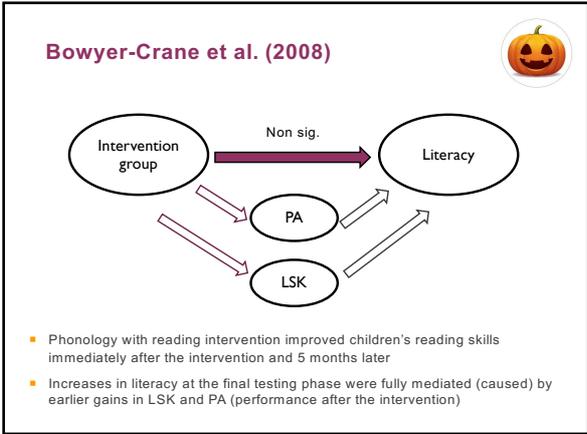
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Does the programme work with younger children?

- Bowyer-Crane et al. (2008). 20-week intervention programme using PA+ R principles for children entering school with poor speech and language development

	Group work	
	Introduction + new letter introduction	12 min
	Group book work	8 min
	Segmentation/blending	5 min
	Plenary	5 min
	Individual work	
	Introduction + work with sounds	5 min
	Sight word learning	5 min
	Reading books (+new book)	10 min

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