



Dyslexia, Language and Learning to Read

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University of Oxford



welcometrust



This Evening

- History of Dyslexia
 - Does it exist?
- Scientific Understanding of Dyslexia
 - A language learning disorder
- ‘What Works’ for Dyslexia
 - Interventions for language and literacy

The History of Dyslexia



A selection of key events



2010 - UK Equality Act

The UK Equality Act is published, protecting dyslexia persons in the workplace



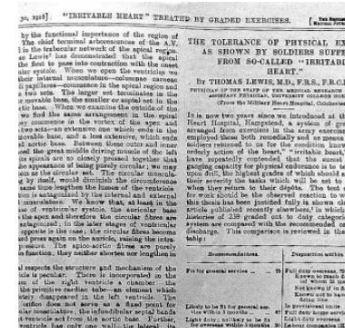
1877 - Adolph Kussmaul

Adolph Kussmaul, a German physician, first diagnoses 'word blindness'



1887 - Rudolph Berlin

Rudolph Berlin, a German ophthalmologist, coins the word 'dyslexia'



1896 - William Pringle Morgan

William Pringle Morgan publishes 'A Case of Congenital Word Blindness'

Congenital Word Blindness



Pringle Morgan 1896

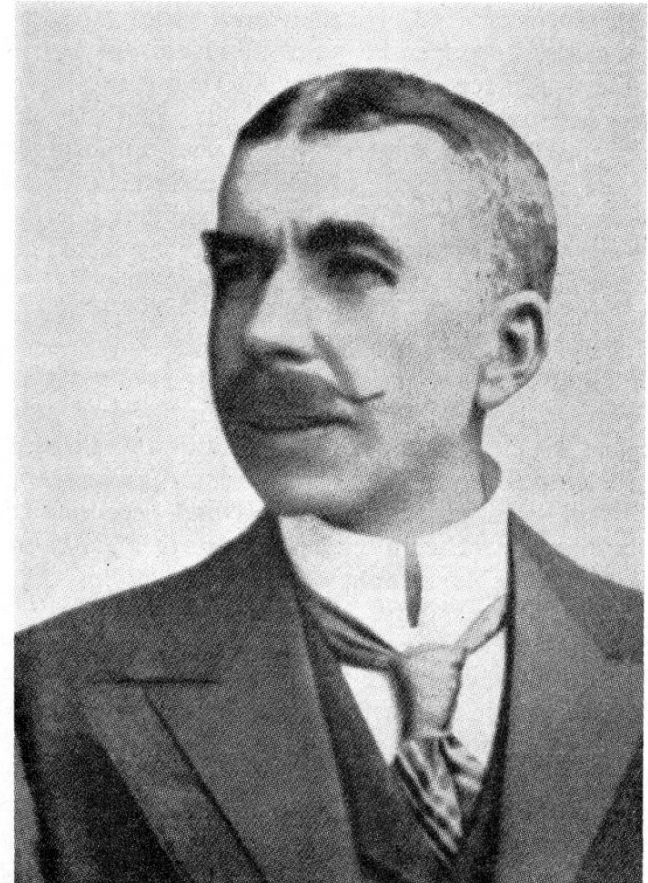


Fig. 3 James Hinshelwood, 1859–1919. Surgeon, Glasgow Eye Infirmary, 1898–1914.

Hinshelwood 1917

Strephosymbolia

READING, WRITING AND SPEECH PROBLEMS IN CHILDREN

A PRESENTATION OF CERTAIN TYPES OF DISORDERS
IN THE DEVELOPMENT OF THE LANGUAGE FACULTY

By

SAMUEL TORREY ORTON, M.D.

*Formerly Professor of Neurology and Neuropathology,
Columbia University.*

This volume is the third of a series of books based on
the Thomas W. Salmon Memorial Lectures given under
the auspices of the New York Academy of Medicine.

Dr. Orton describes a number of types of disorders occurring during childhood, discusses their origin, and the methods of correcting them, and criticizes certain methods now in widespread use as contributing to the reading disability which in turn gives rise to academic failures and emotional disturbances. Again, he calls attention to the fact that interference by parents in the normal development of children, particularly by attempting to force a left-handed child to acquire the pattern of right-handedness, is frequently the basis of serious disorders in speech. Also presented in this book are discussions of certain types of deafness, abnormal clumsiness, stuttering and other problems of definite concern to teacher and to parent.



Orton, 1925

Isle of Wight Study

(Rutter & Yule, 1973)

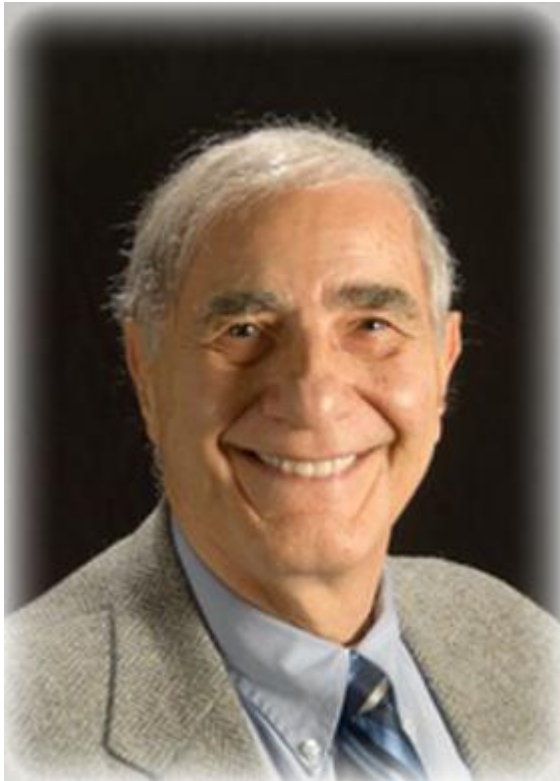


- Two kinds of reading problem
 - Age discrepant: General Reading Backwardness
 - IQ discrepant: specific reading retardation
- Language difficulties predated reading problems
 - Children with both SRR and GRB experienced language delays and difficulties

Warnock Report (1978)

- Used term 'Specific Learning Difficulties' in preference to 'dyslexia'

Verbal Deficit Hypothesis



Journal of Child Psychology and Psychiatry 45:1 (2004), pp 2–40

Specific reading disability (dyslexia): what have we learned in the past four decades?

**Frank R. Vellutino,¹ Jack M. Fletcher,² Margaret J. Snowling,³
and Donna M. Scanlon¹**

¹The University at Albany, USA; ²The University of Texas Health Science Center at Houston, USA;

³The University of York, UK

We summarize some of the most important findings from research evaluating the hypothesized causes of specific reading disability ('dyslexia') over the past four decades. After outlining components of reading ability, we discuss manifest causes of reading difficulties, in terms of deficiencies in

Three Facts About Dyslexia

Dyslexia runs in families

- biology

Dyslexia associated with a 'phonological' deficit

- cognition

Dyslexia has a variable manifestation

- Behaviour

Environment



American Psychiatric Association
DSM-5 Development

Specific Learning Disorder: *Dyslexia*

- Pattern of learning difficulties characterized by problems **with accurate or fluent word recognition, poor decoding and poor spelling** abilities
- ...specify additional difficulties with reading comprehension or math reasoning

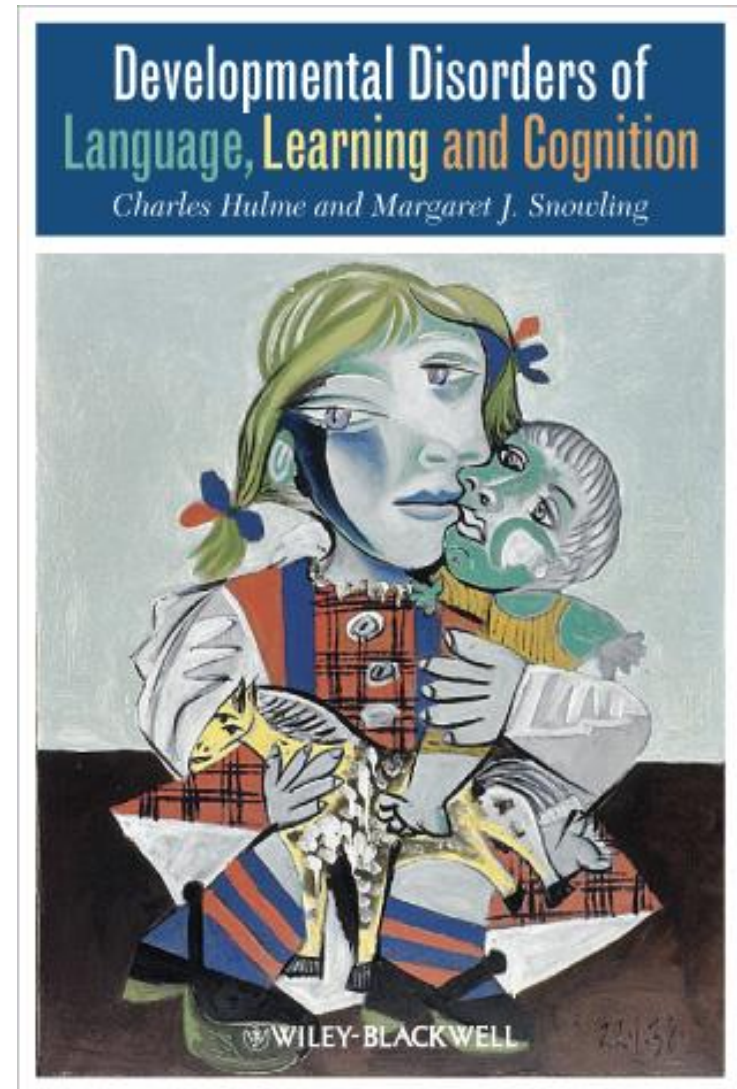
The Dyslexia Debate



JULIAN G. ELLIOTT
ELENA L. GRIGORENKO

Refining Understanding of Dyslexia

- Studies of children at family-risk of dyslexia
- Profile of dyslexia early in development
- Who becomes dyslexic?



Family–Risk Studies

- Heritability of reading skills
 - dyslexia runs in families
- Recruit children who have a first degree relative with dyslexia
 - Usually a parent (some studies include younger siblings of children with dyslexia)
- Follow longitudinally



Methodology

Finnish



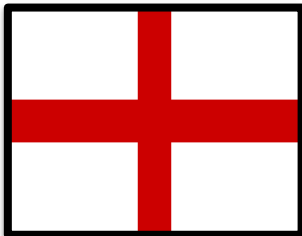
Dutch



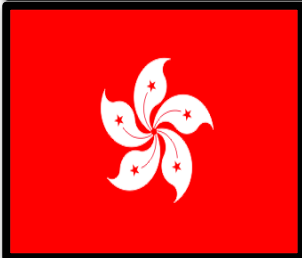
Danish



English



Chinese



- Children assessed around Year 3 and classified:
 - FR-dyslexia
 - FR-No dyslexia
 - TD control (not-at-risk; low-risk)
- Retrospective analysis of group and sub-group differences at earlier developmental stages
- Reveals precursors of RD

Compared with controls

Infancy

Family Risk Dyslexia

Delayed Speech and Language

Preschool

Phonological Difficulties

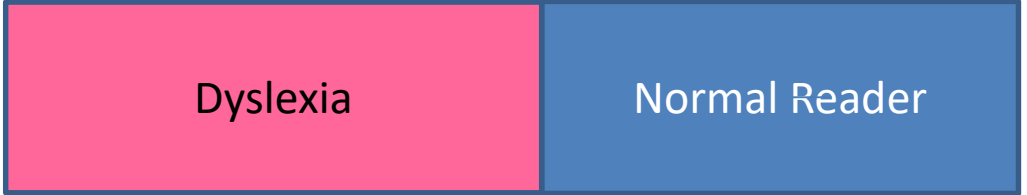
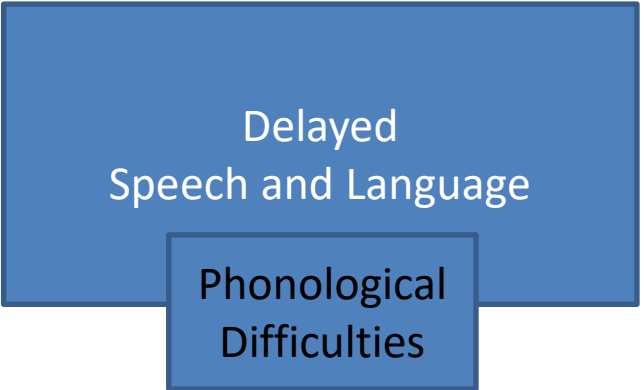
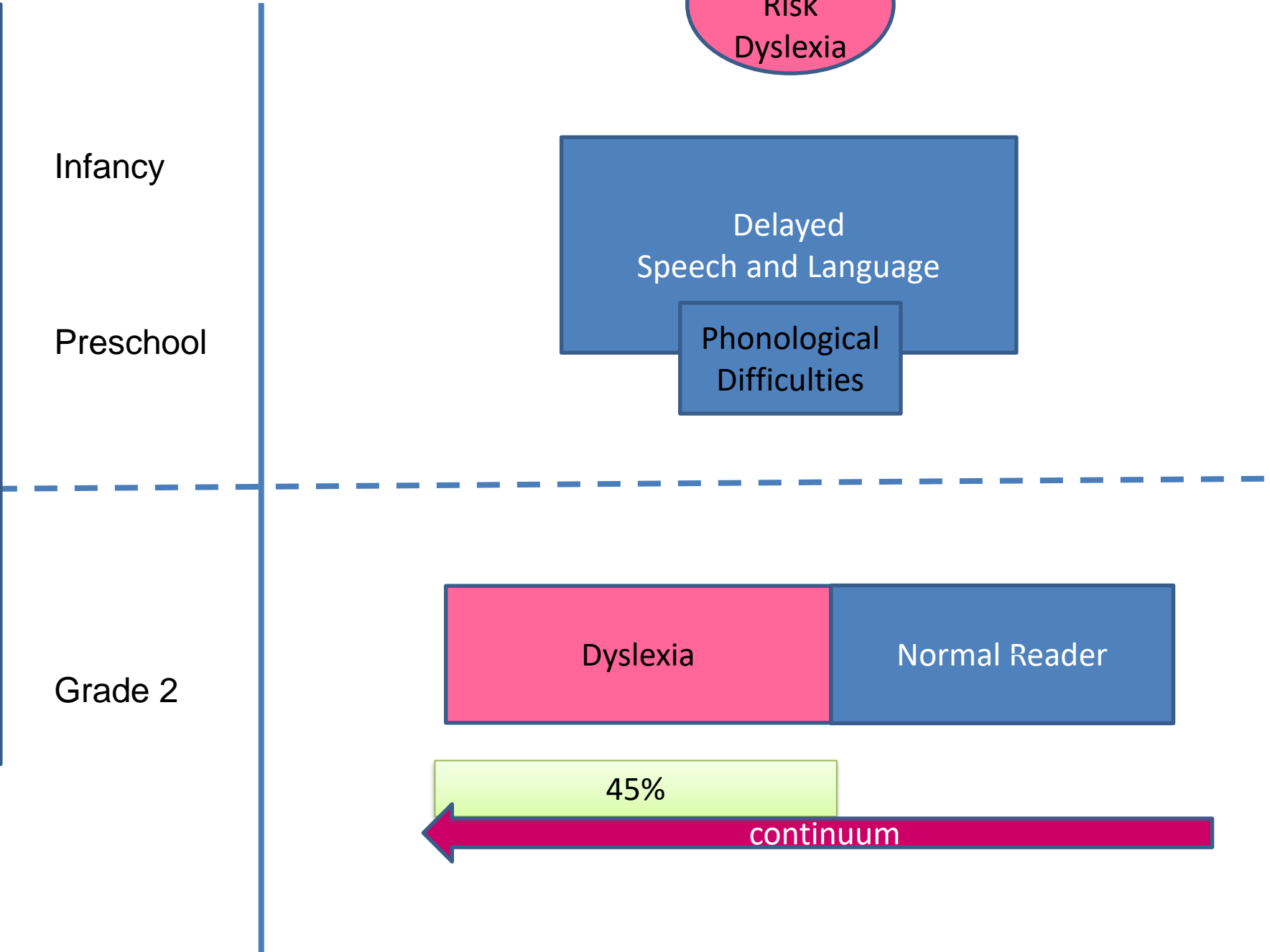
Grade 2

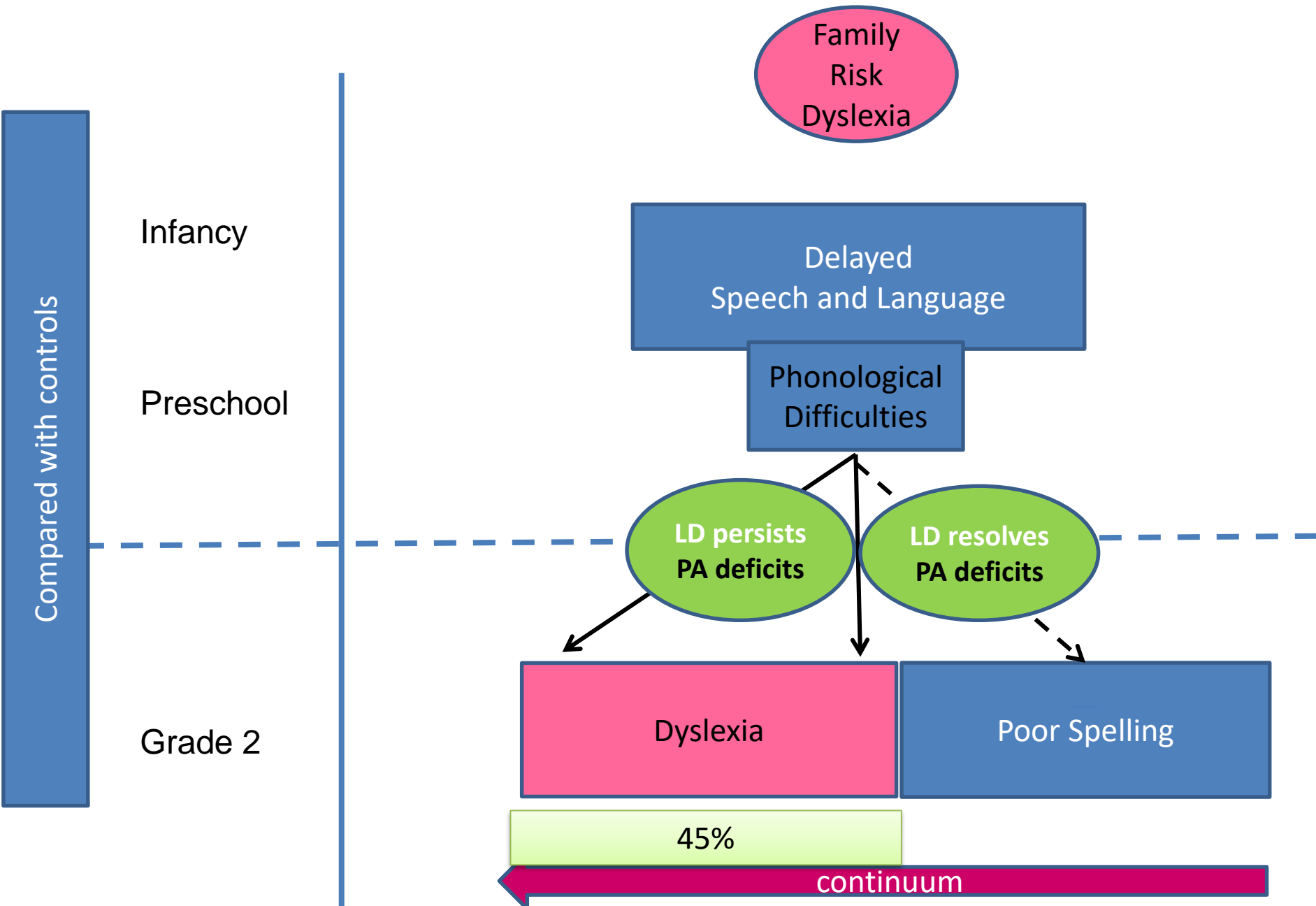
Dyslexia

Normal Reader

45%

continuum





Compared with controls

Infancy

Preschool

Grade 2

Family Risk Dyslexia

Delayed Speech and Language

Phonological Difficulties

LD persists PA deficits

LD resolves PA deficits

Dyslexia

Poor Spelling

45%

continuum



- Family Risk of Dyslexia
- Pre-school LD
- Children at low-risk of RD

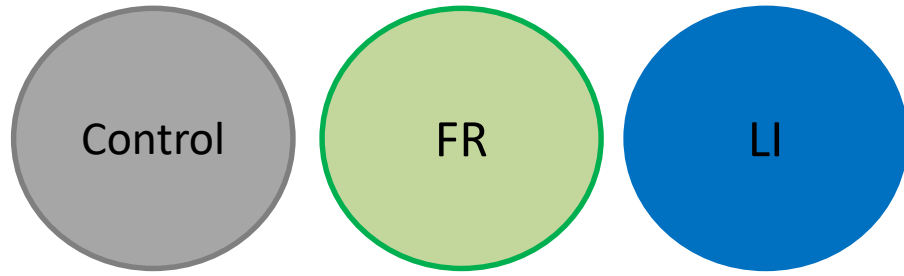
Phase 1
3 ½ yrs

Phase 2
4 ½ yrs

Phase 3
5 ½ yrs

Phase 4
6 ½ yrs

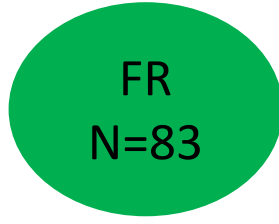
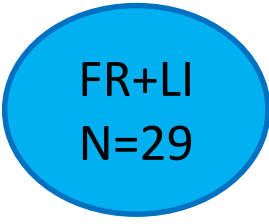
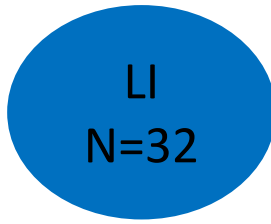
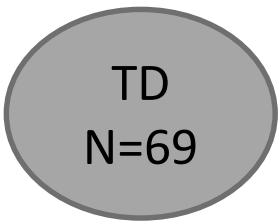
Phase 5
8 yrs



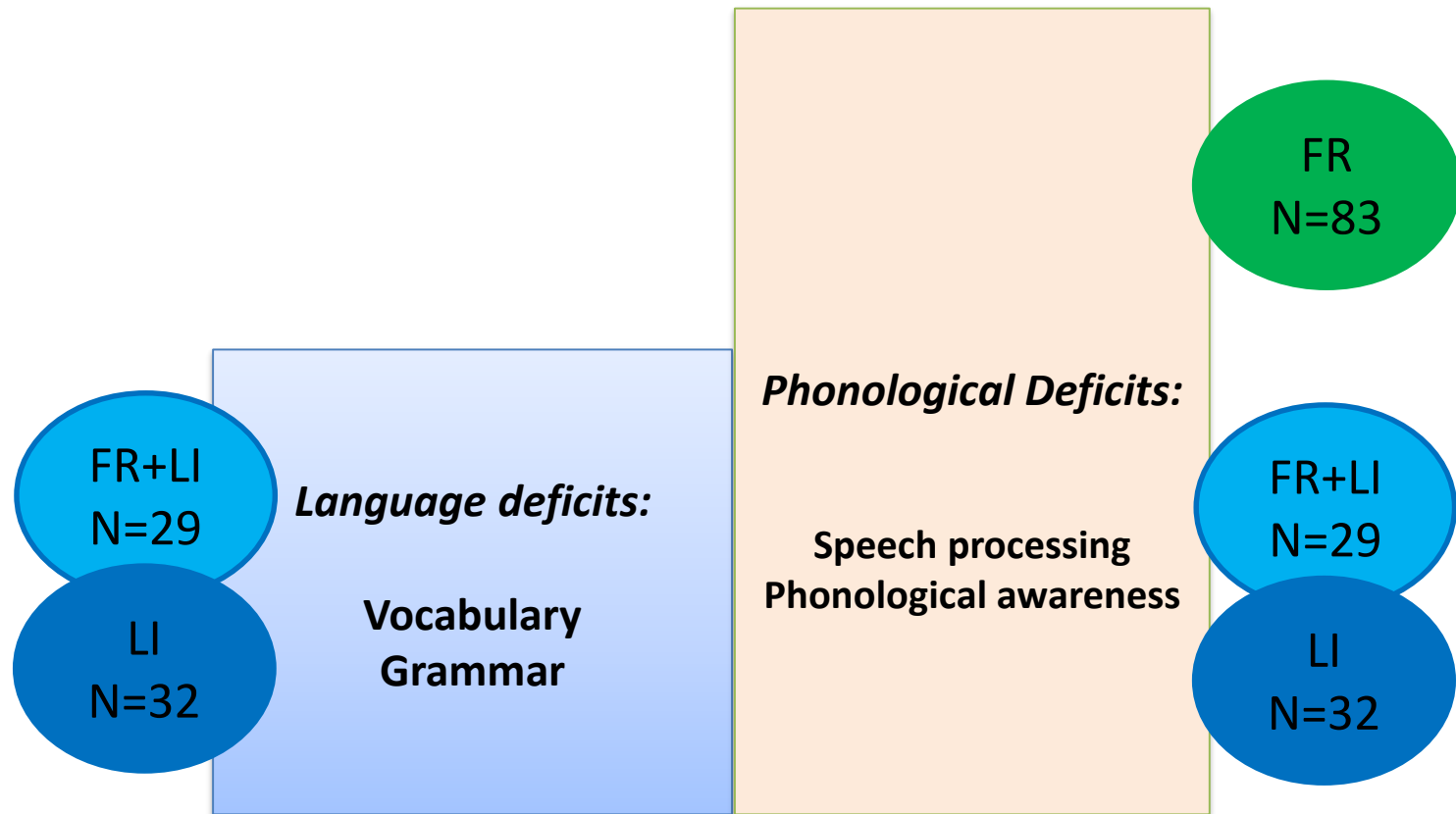
Family risk of dyslexia?

No Yes

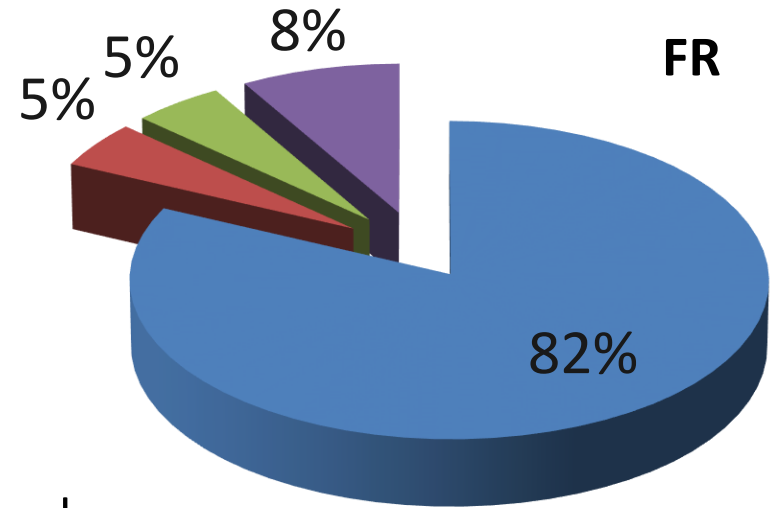
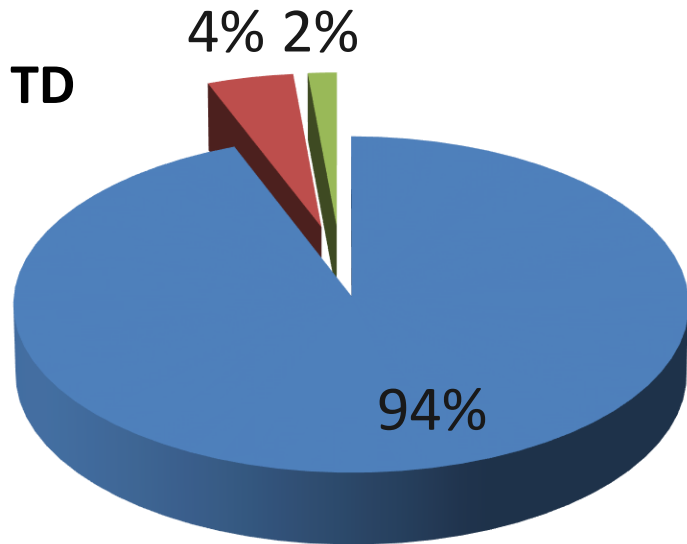
Language Impairment



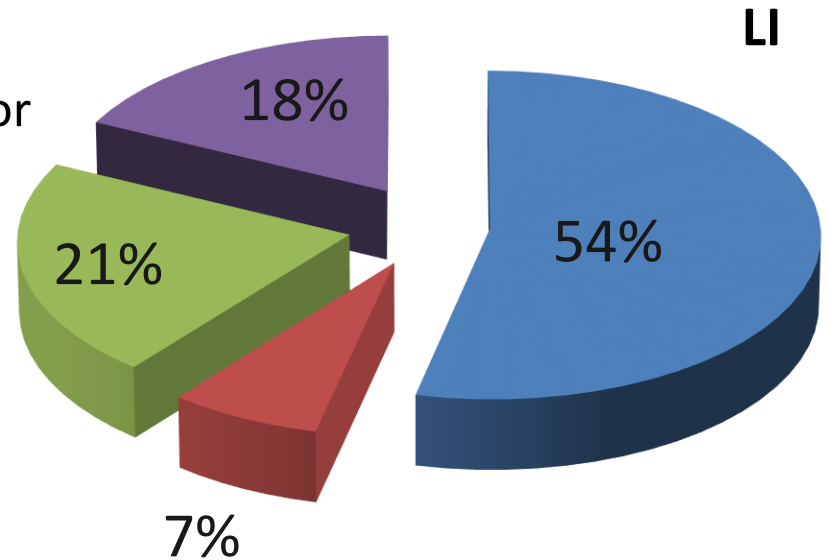
Speech and Language Delays Preschool



Co-morbidities.....?



- Not impaired
- EF
- Motor
- EF+Motor



Motor delays and poor attention at 3-4 years

- Children at family risk of dyslexia *and* children with preschool LD show phonological deficits
 - **Phonological Deficit = shared risk factor**
 - Children with preschool LD *differ* from FR-dyslexia in vocabulary, grammar and comprehension
 - **Non-shared deficit**
- Executive and motor deficits commonly co-morbid with LD, less so with FR
- **Non-shared deficit**

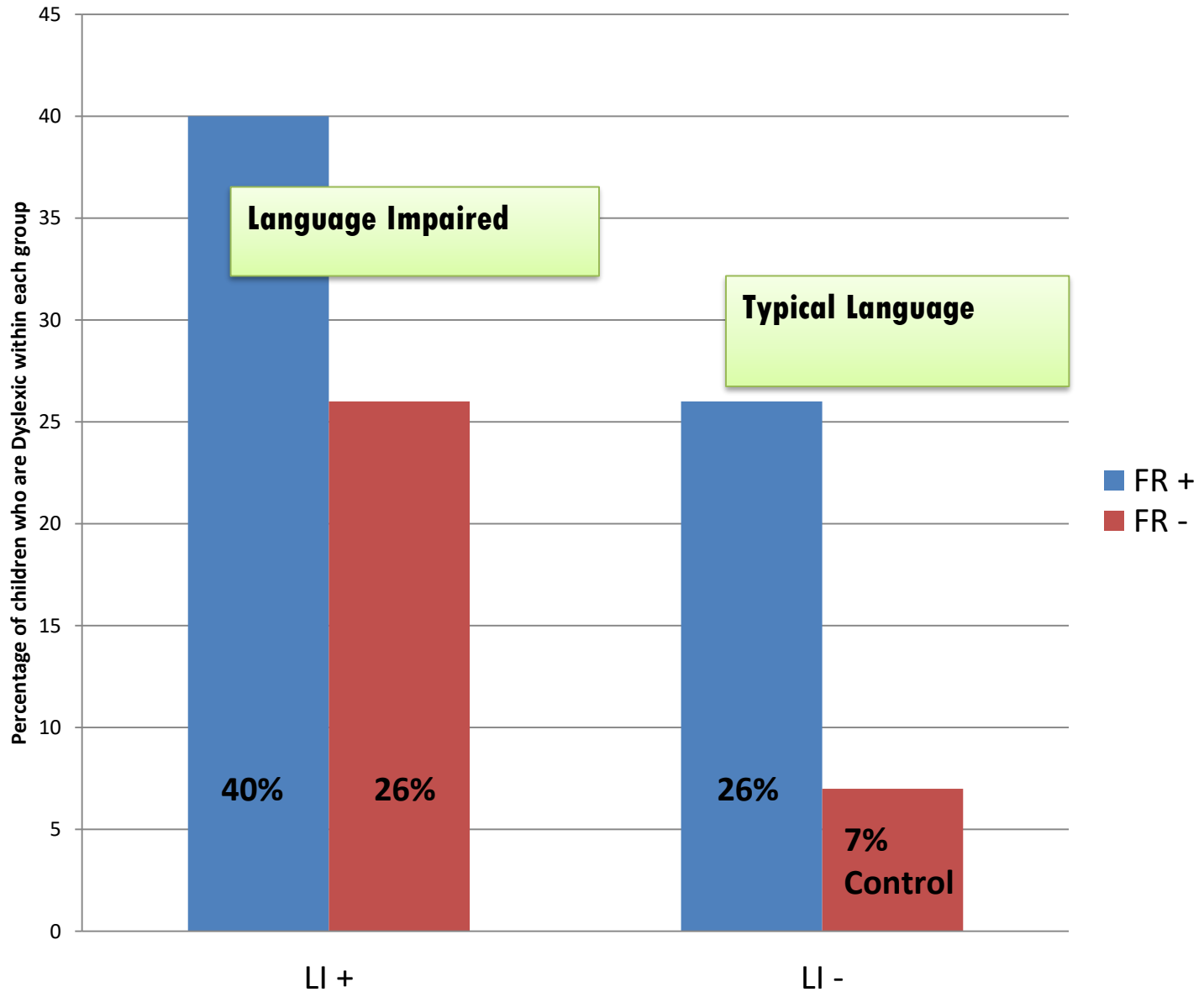
Dyslexia Outcomes at age 8

- **Dyslexia:** ...‘poor decoding and poor spelling abilities’ [DSM5]
- -1.5SD below the mean of the TD group on a composite of word reading/spelling (SS \leq 88)

Possible risk factors for dyslexia:

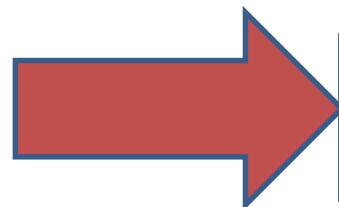
- Family-risk
- Poor language
- Poor phonology
- Poor motor skills and attention

Dyslexia Outcomes by Risk Group

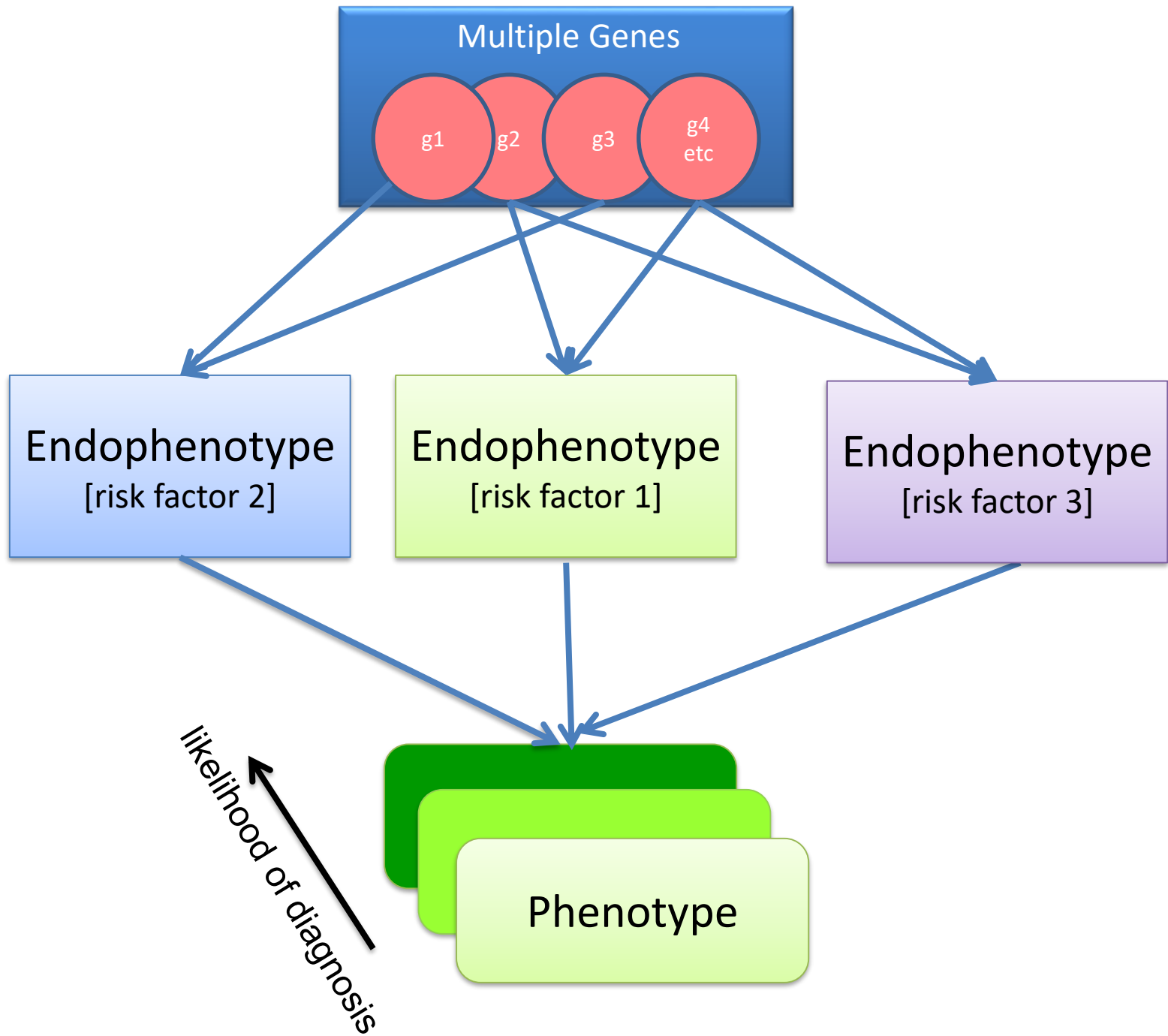


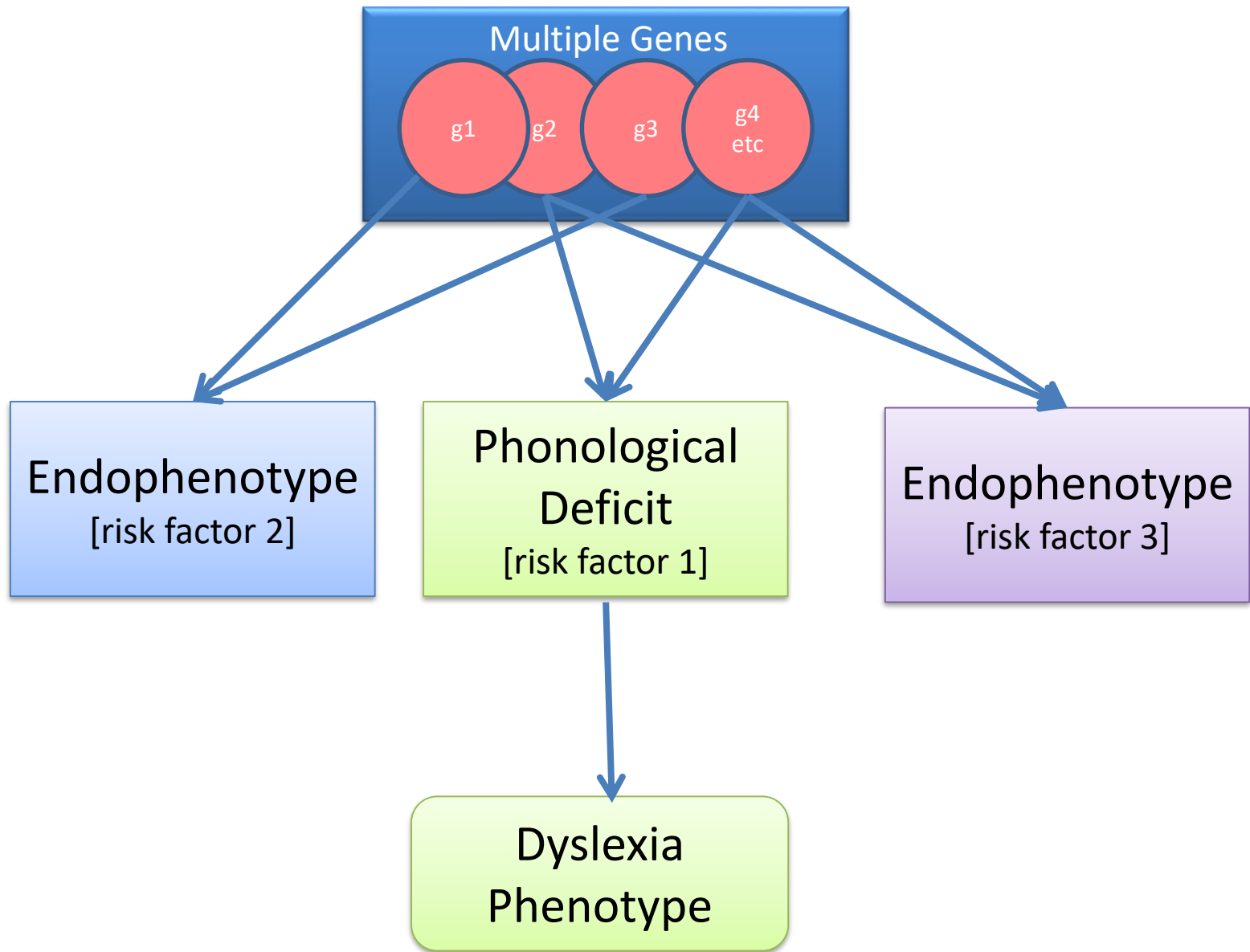
Pathways to 'Dyslexia'

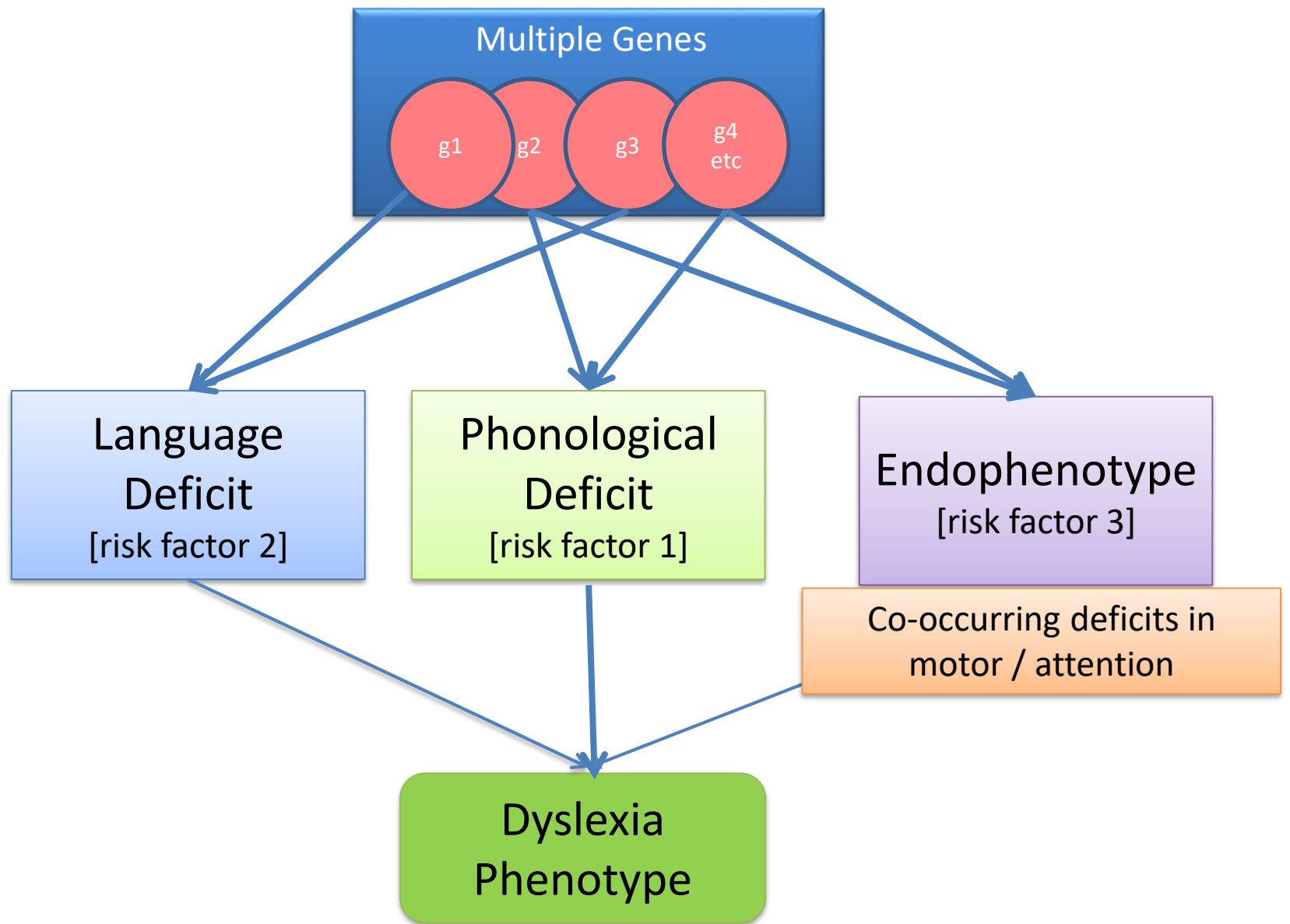
- A heritable form of dyslexia associated with preschool phonological difficulties which persist
- A consequence of an underlying language disorder (co-occurring executive and motor difficulties) which persists
- ?Environmental factors associated with speech or language delay ?



Accumulation of multiple risks










Developing Language and Literacy

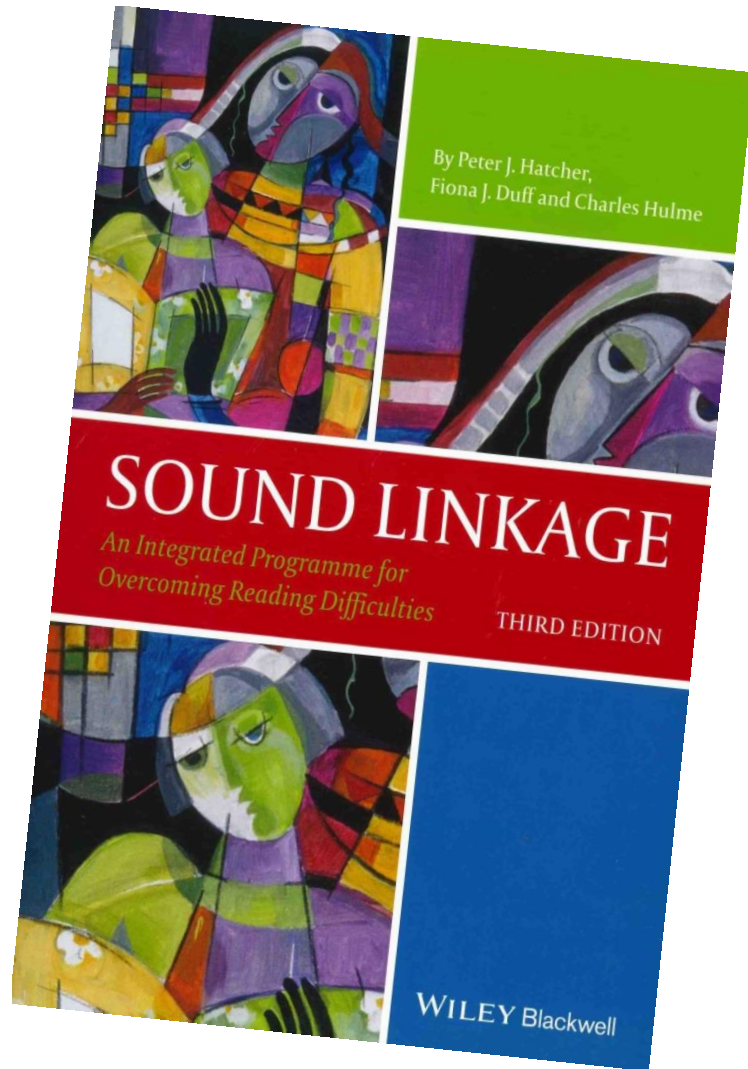
Julia M. Carroll, Claudine Bowyer-Crane, Fiona J. Duff,
Charles Hulme and Margaret J. Snowling

 WILEY-BLACKWELL

 Nuffield
Foundation

Promoting Decoding Skills

- Letter-Sound knowledge
- Phoneme Awareness
- In context of book reading and linking letters and sounds



A series of RCTs shows this approach to be effective for poor readers

Cumbria County Council

Cumbria County Council Serving the people of Cumbria Here to help

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Schools and learning

- ▼ Cumbria reading intervention
- ▶ Graded books
- ▶ Effectiveness of the Cumbria reading intervention programme
- ▶ What happens during a Cumbria reading intervention session?
- ▶ Cumbria reading intervention resources

How do you rate this information / service?


😊 😐 😞

Cumbria Reading Intervention

Cumbria Reading Intervention is an intensive, research-based programme that is highly effective at speeding up the development of children's early literacy skills. The theoretical basis of the programme involves the linking of the teaching of reading with the development of a child's phonological skills (their ability to process sounds in language). The Cumbria Reading Intervention project has been supported by Cumbria County Council since the early 1990s and has already benefited thousands of children.

Each programme is unique and specifically planned for an individual child. Teaching is based on detailed assessments of a child at the start of a programme. These assessments are then repeated at the end of the programme to measure progress.

In Cumbria, a Reading Intervention trained teacher or teaching assistant works on a one-to-one basis with a child. The programme usually involves 48 sessions of support delivered over a 12-week period.



Contact Cumbria Reading Intervention

Online enquiry/feedback form

Address
Children's Services
Parkhouse Building
Kingmoor Park
CARLISLE
CA6 4SJ

Email
reading.intervention@
cumbria.gov.uk

Straight to

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R S T U V W X Y Z

'Further data collection has also demonstrated that the intervention brings about improvements in children's self-esteem, confidence and ability to participate in classroom activities.'



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EVIDENCE4IMPACT

Search the database

g Intervention

(ing) | One-to-one tuition | Small group tuition | Struggling readers | Key Stage 1 | Key

vention is an intensive programme which targets primary age pupils who have significant development of reading skills. It was initially developed in Cumbria following Hatcher and (994) findings that interventions combining reading and phonology skills were more n those focusing on reading or phonology skills alone. Since then, the North Yorkshire vention has also been developed to follow the same principles and structure. The involves tutoring conducted by trained teachers or teaching assistants, on a one-to-one umbria Reading Intervention or in small groups in the North Yorkshire Reading . It uses a variation of the Reading Recovery programme with additional specific tuition in awareness, letter sounds, sound blending, syllables and words within sentences. Each s four thirty-five minute sessions a week for twelve weeks. The sessions follow a prescribed hgh the content of the lesson is personalised to the pupil's individual needs, which are ne beginning of the intervention and monitored throughout. Sessions begin by reading an e that the pupil is able to read with 95-100% accuracy). This is followed by reading a book al level (one that the pupil is able to read with 90-94% accuracy), as well as practising tion and formation, completing oral phonological activities, writing a sentence or short up a sentence or short story and re-arranging it, and finally introducing a new book at an



Provider(s)

The Reading Intervention Programme

Cost

Training £650 per delegate, materials £450

Regions

Cumbria, North Yorkshire

Practices used

- One-to-one tuition
- Small group tuition

Researcher(s)

Heather Swain



Welcome to Interventions for Literacy

Home Case Studies Useful Links Contact

Parents Schools Interventions Rose Review

Welcome to our Interventions page

References

Bishop D. V. M. & 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, 1027-1050

Brooks, G. (2007) What works for pupils with literacy difficulties? DCSF

Hulme, C. & Snowling, M. (2009) *Developmental Disorders of Language Learning and Cognition*, Sussex: Wiley Blackwell

How would you like to search?

Interventions or

Greg Brooks

Each intervention is graded as 'useful', 'substantial' or 'remarkable'. For an explanation of these ratings, and for the impact measures which underlie them, see Greg Brooks's report.

What works for pupils with literacy difficulties? (published by the DCSF in 2007)

In North Yorkshire
>1000 teachers trained since 2002
~400 schools use reading intervention
Now used in primary and secondary school settings

Primary and Secondary National Strategies

Guidance Curriculum and Standards

What works for pupils with literacy difficulties?

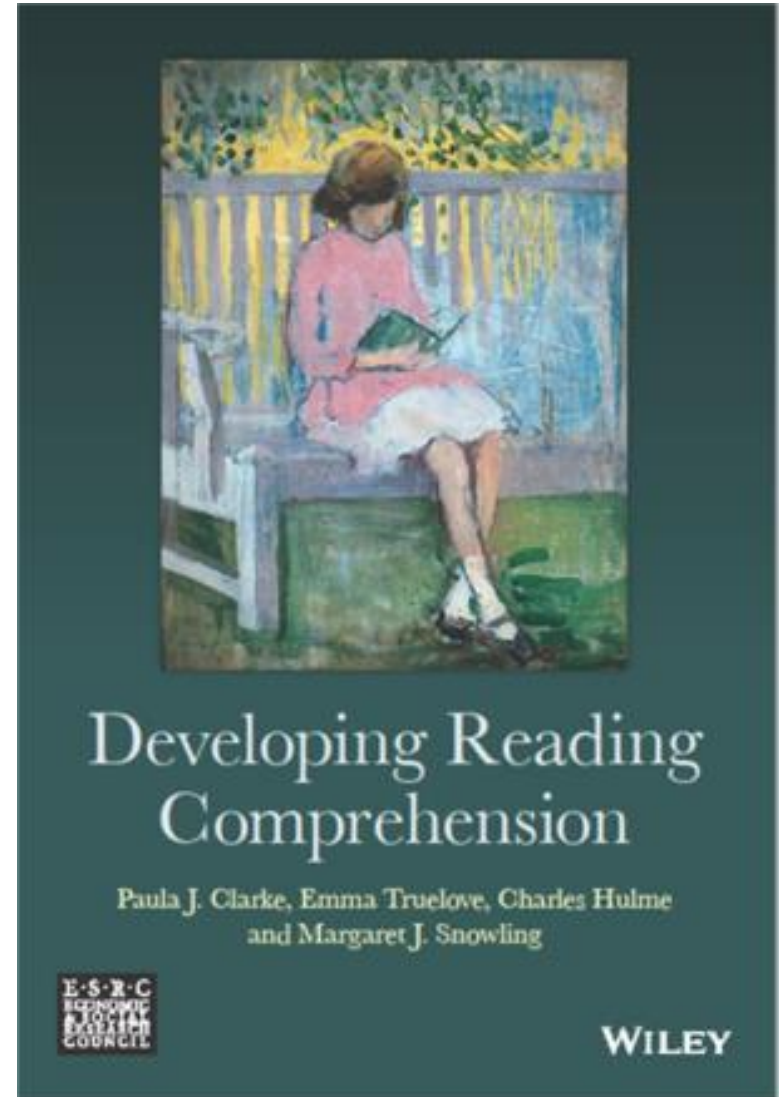
The effectiveness of intervention schemes

LA SEN and learning support managers, primary and secondary strategy managers, LA English and literacy managers and consultants, RR teacher leaders, Headteachers, literacy and English subject leaders, SENCOs and inclusion managers in primary, secondary and middle schools

Status: Recommended
 Date of issue: 12-2007
 Ref: 00688-2007BKT-EN

What about Language?

- Children who enter school with poor oral language are at high-risk of dyslexia
- The impact of social disadvantage is mediated through language differences already evident at the time of school entry
- Language critical for reading comprehension





Efficacy of language intervention in the early years

Silke Fricke,¹ Claudine Bowyer-Crane,² Allyson J. Haley,³ Charles Hulme,⁴
and Margaret J. Snowling³

¹Department of Human Communication Sciences, University of Sheffield, Sheffield; ²Department of Psychology, Sociology and Politics, Sheffield Hallam University, Sheffield; ³Department of Psychology, University of York, York;

⁴Division of Psychology and Language Sciences, University College London, London, UK

Background: Oral language skills in the preschool and early school years are critical to educational success and provide the foundations for the later development of reading comprehension. **Methods:** In a randomized controlled trial, 180 children from 15 UK nursery schools ($n = 12$ from each setting; $M_{\text{age}} = 4;0$) were randomly allocated to receive a 30-week oral language intervention or to a waiting control group. Children in the intervention group received 30 weeks of oral language intervention,

Nursery
(10 weeks)

- 3 x 15 min sessions per week
- Group sessions (2-4 children)
- **Narrative, vocabulary, listening**

Reception 1
(10 weeks)

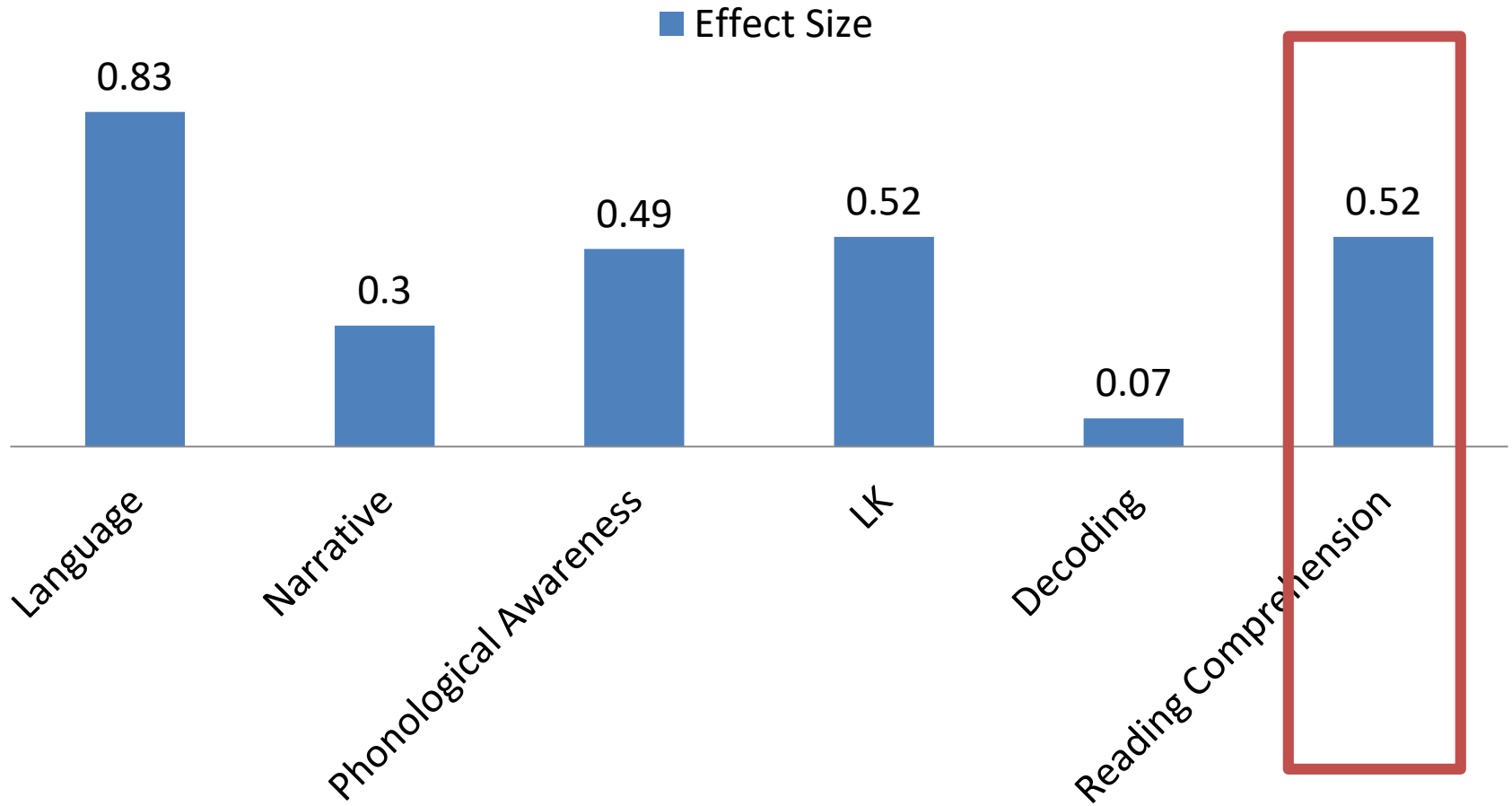
- 3 x 30 min group sessions
- 2 x 15 min individual sessions
- **Narrative, vocabulary, listening**

Reception 2
(10 weeks)

- 3 x 30 min group sessions
- 2 x 15 min individual sessions
- **added letter sound knowledge and phonological awareness**



Outcomes at T6 (+6 months)



- Oral language intervention can be successfully delivered by trained and supported TAs in nursery classes (3 robust trials conducted by our group)
- Children who enter school with poorly developed language can be identified in nursery classes and their oral language skills can improve significantly
- When early intervention includes training in PA and LSK, it also has a positive impact on emergent literacy skills

BUT there is no quick fix:

Interventions need to be of high quality

Excellent implementation is of key importance



Contemporary Framing

- Dyslexia is not a 'diagnosis', rather a dimension (mild->severe)
 - a language learning impairment
 - the outcome of multiple risk factors
- The status of the language system at school entry is a critical prognostic indicator
- Dyslexia can be ameliorated with appropriate interventions
 - But not by snake-oil or bogus therapies.....!





Identifying and Teaching Children and Young People with Dyslexia and Literacy Difficulties

An independent report from Sir Jim Rose to the Secretary of State for Children, Schools and Families
June 2009

- Dyslexia primarily affects the skills involved in accurate and fluent word reading and spelling
- Characteristic features of dyslexia are difficulties in phonological awareness, verbal memory and verbal processing speed

Rose Review 2009

Department for Children Family and Schools



Identifying and Teaching Children and Young People with Dyslexia and Literacy Difficulties

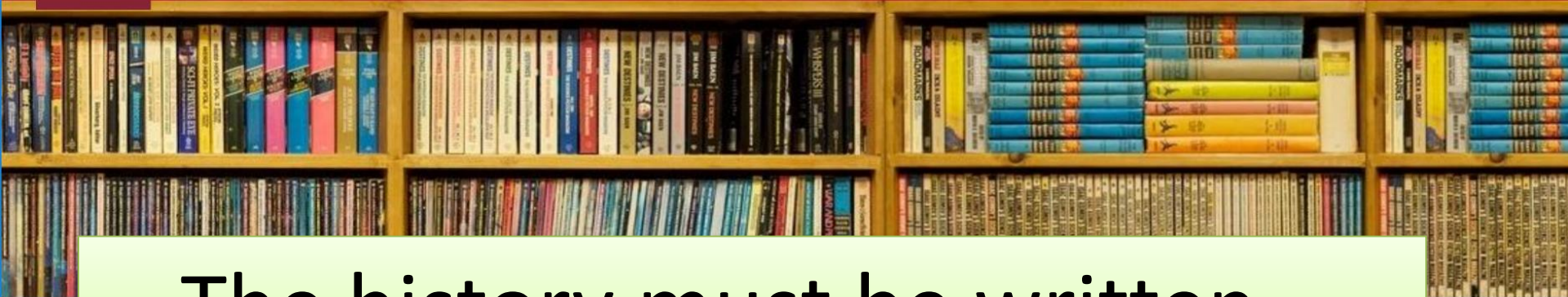
An independent report from Sir Jim Rose to the Secretary of State for Children, Schools and Families
June 2009

Rose Review 2009
Department for Children Family and Schools

- Dyslexia occurs across the range of intellectual abilities
- It is best thought of as a continuum, not a distinct category, and there are no clear cut-off points.
- Co-occurring difficulties may be seen in aspects of language, motor co-ordination, ... and personal organisation, but these are not, by themselves, markers of dyslexia

The History of Dyslexia

[Home](#) [What is Dyslexia?](#) [UK Dyslexia Archive](#) [Timeline](#) [Resources](#) [Credits](#)



The history must be written...

