Institute of Psychological Studies

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Predicting literacy outcomes in at-risk children; the role of early language skills

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Overview

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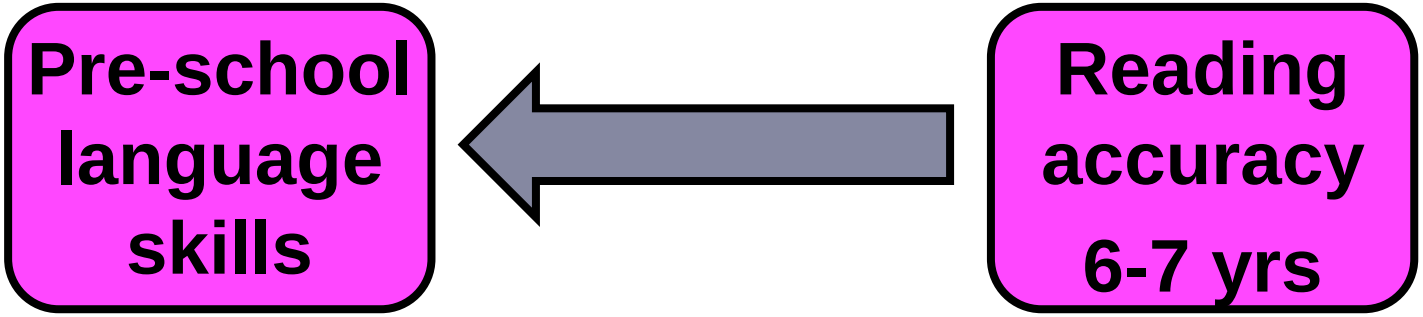
- In the at-risk sample we have identified those children who are experiencing early reading difficulties (single word reading accuracy) at 6-7 years of age
- For each child we have looked back at their early language skills, to establish his/her deficits



- We have used these data to test different models of dyslexia

Single word reading

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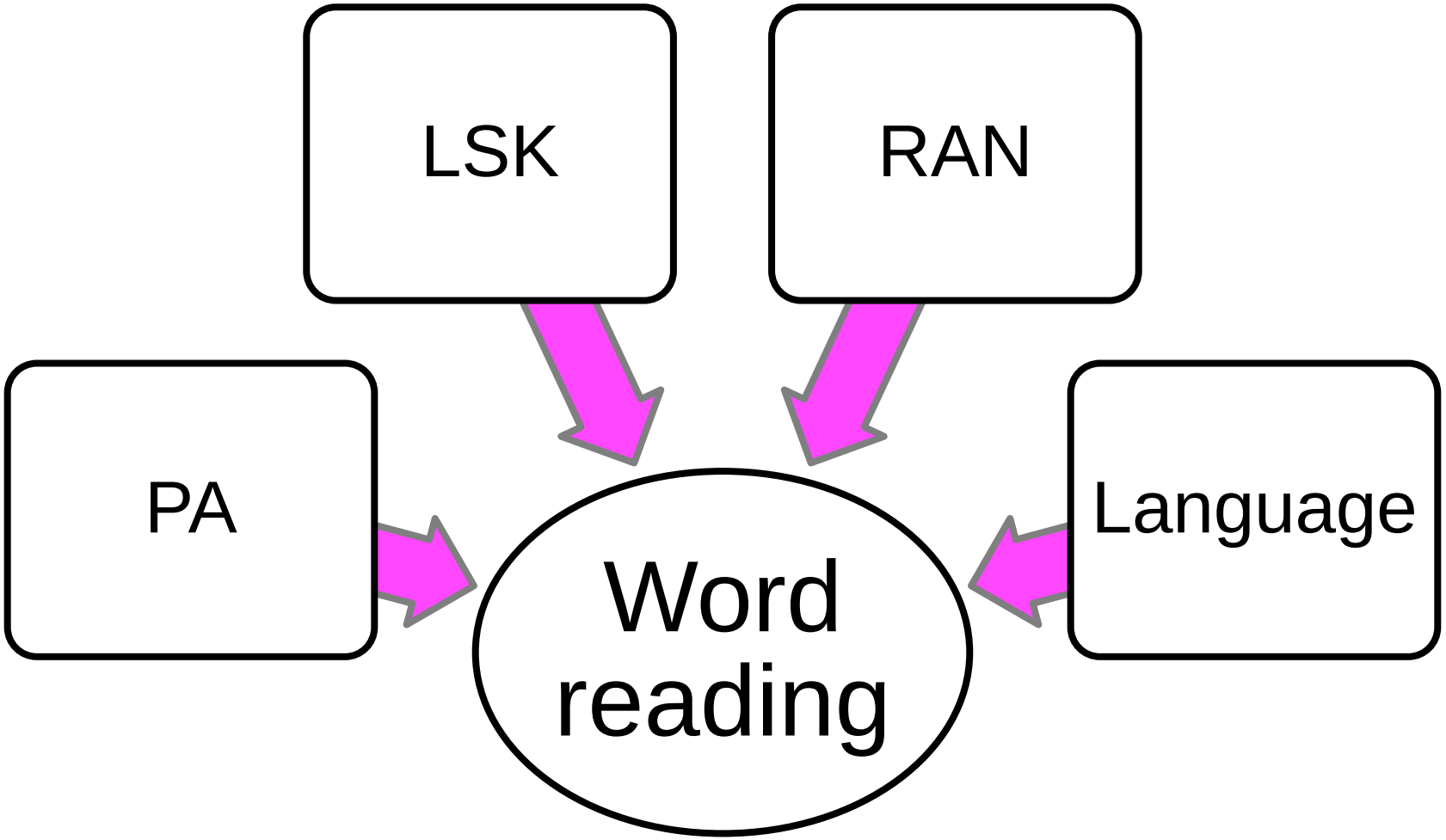

The overlap

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SLI

Prospective studies

High risk of literacy difficulties that affect accuracy and comprehension, risk is greater is language difficulties persist

Family risk studies

50% of FR children go on to develop dyslexia, these children show early speech and language difficulties

DYS

Phonological deficit
Severity hypothesis

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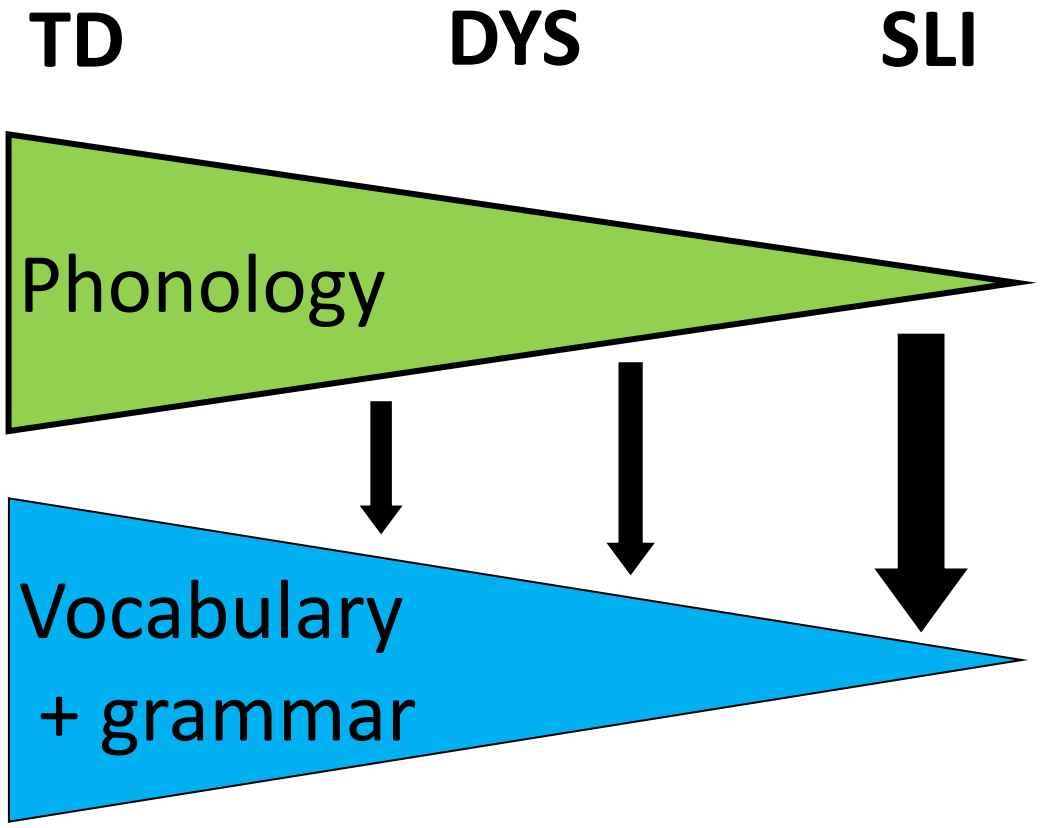

2D model
(Bishop & Snowling 2004)

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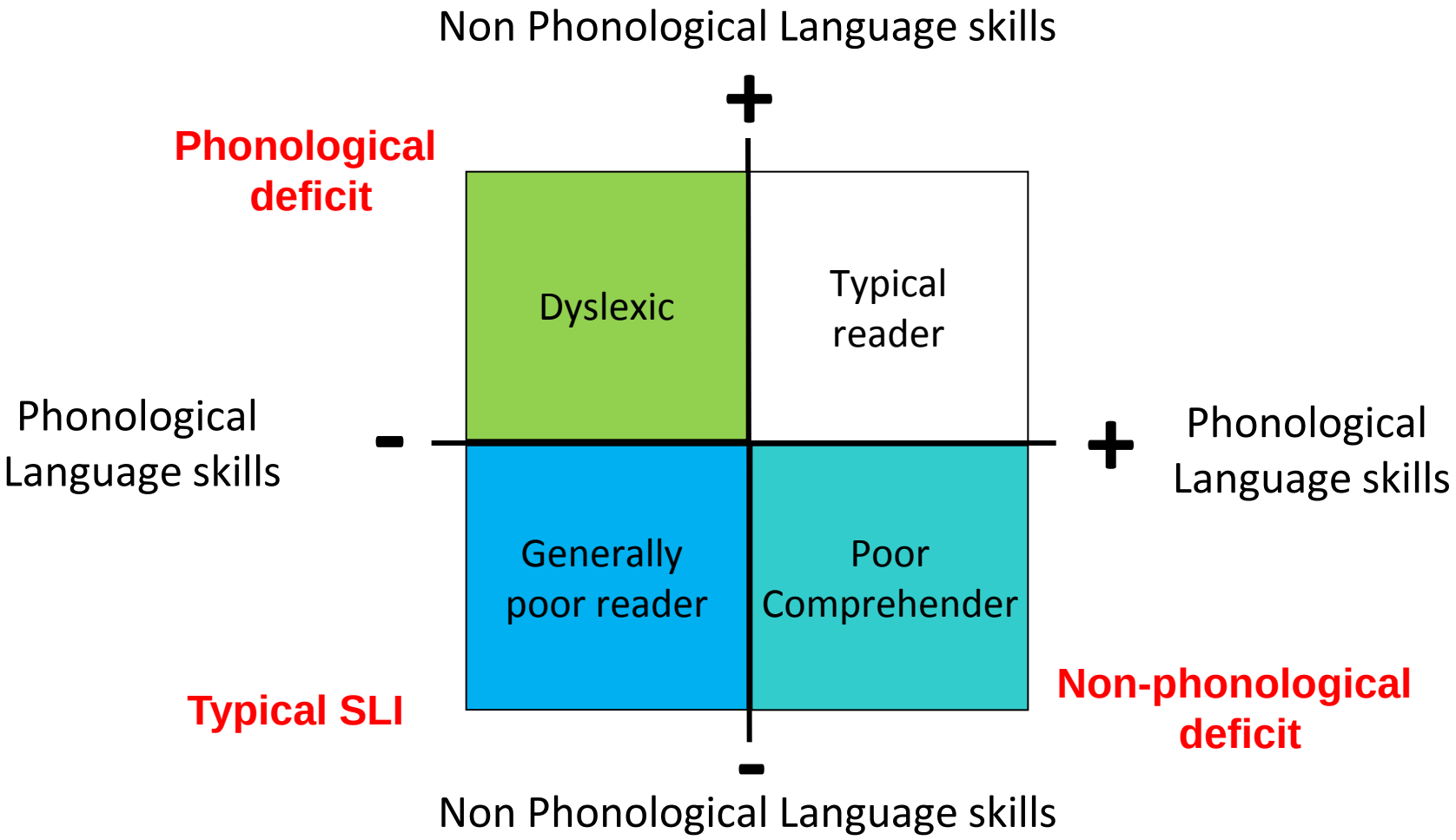

Multiple deficits

Pennington 2006

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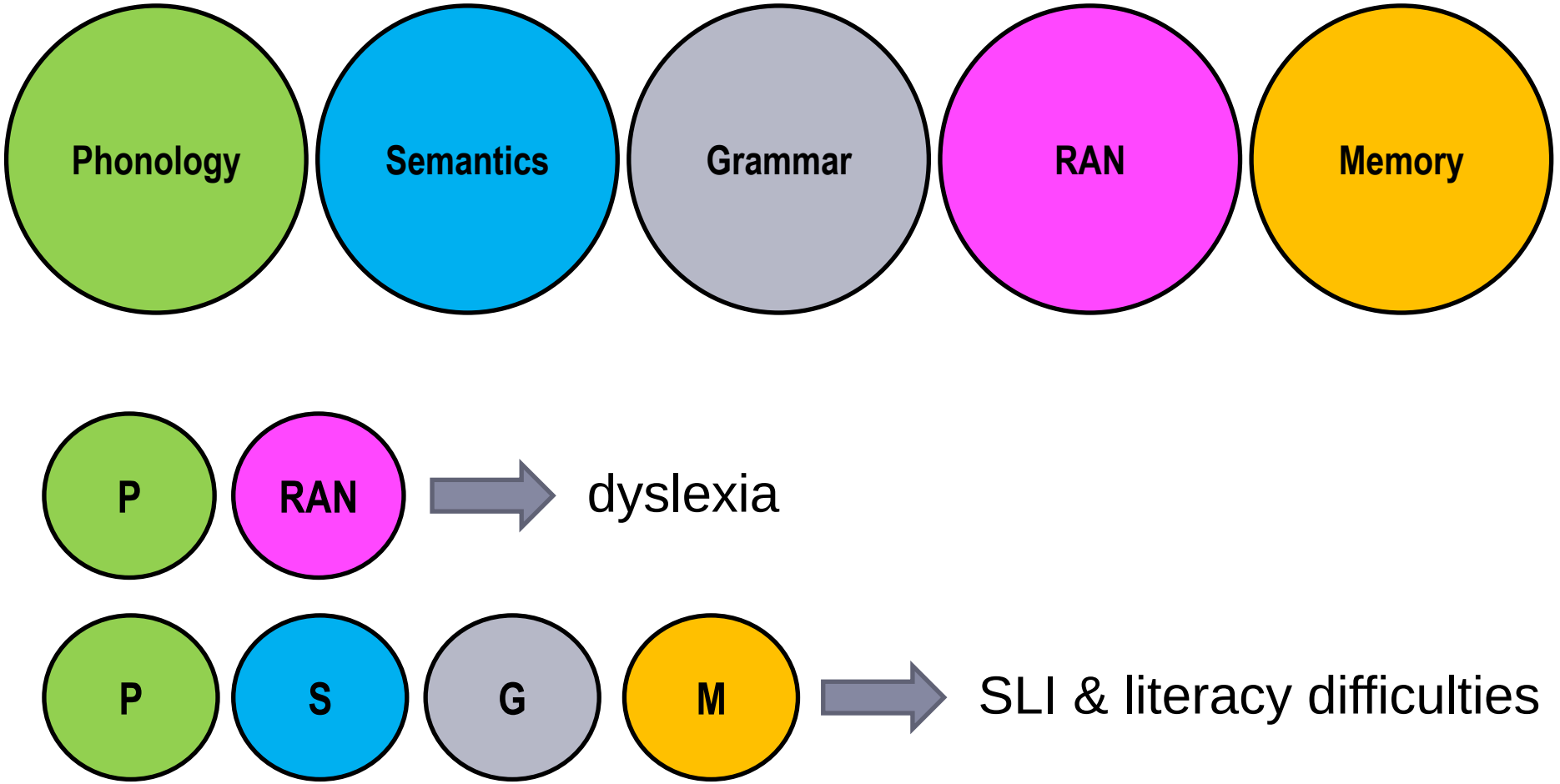

Early literacy outcomes

based on T1 (3 ½ years) groups

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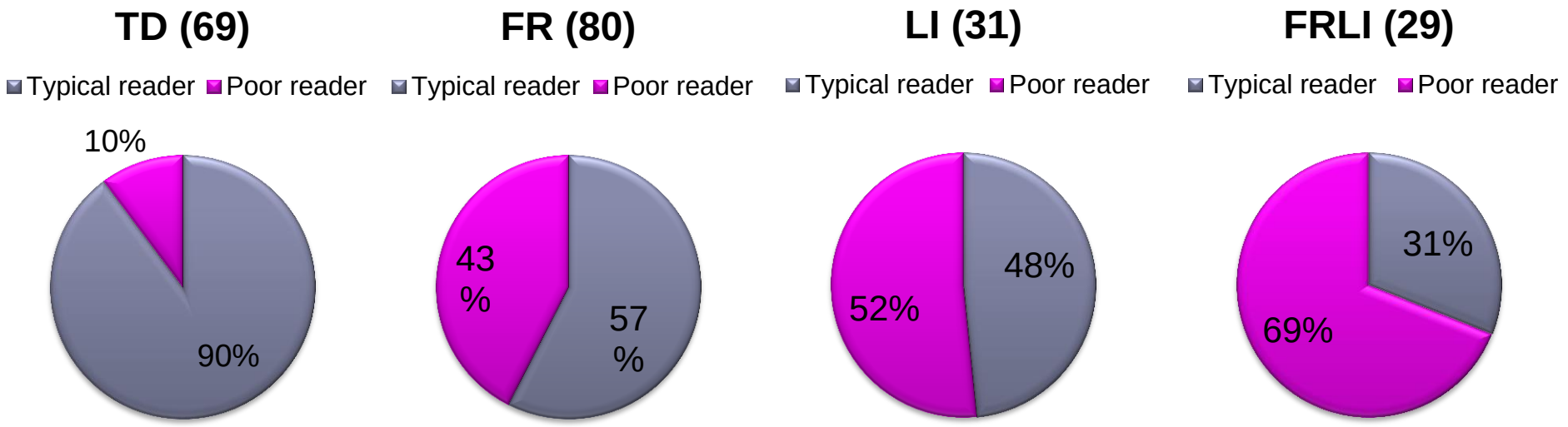

Persistence of SLI

at T3 5 ½ years

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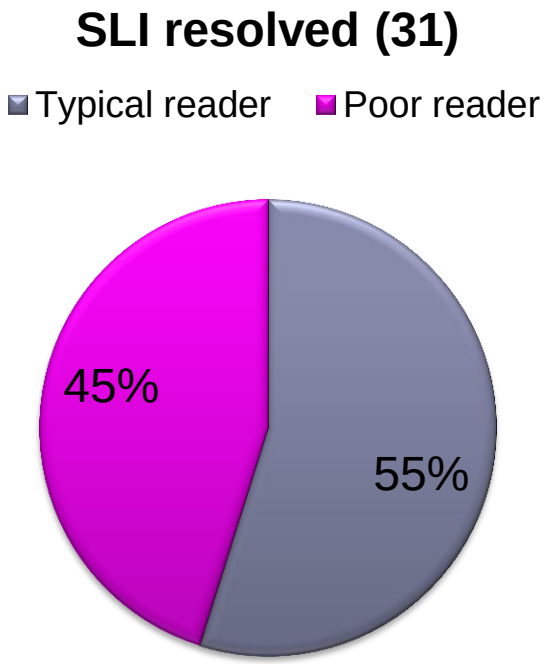

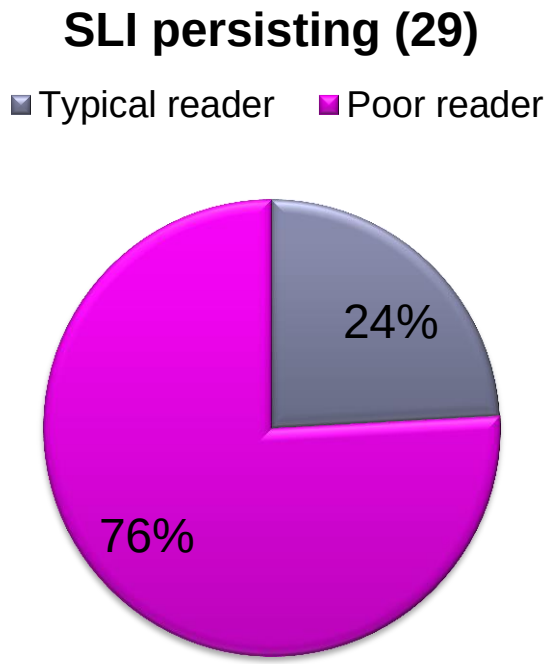

Group → Individual

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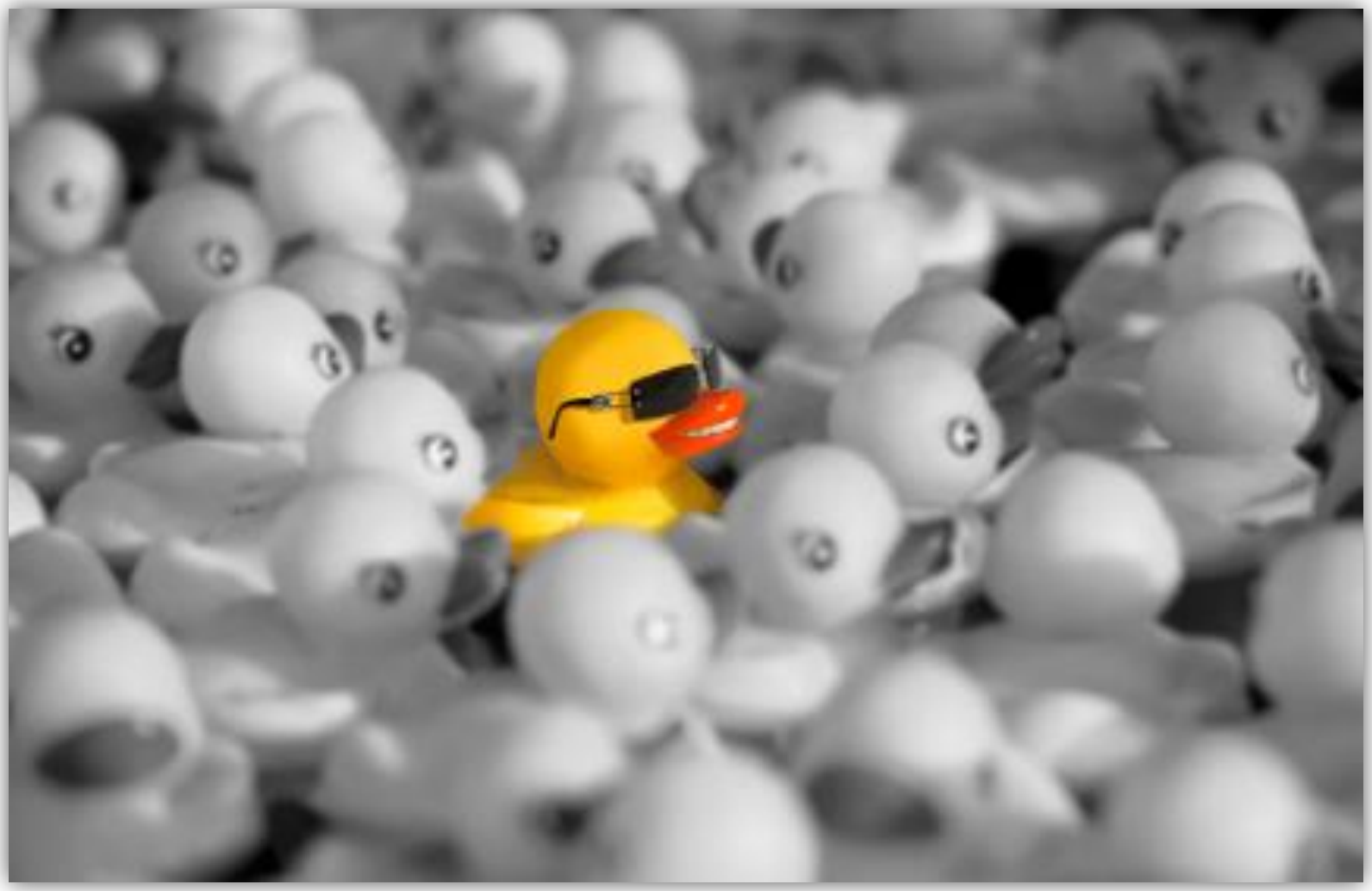

Individual deficits

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Pennington & colleagues (2012) used a multiple case study approach to test single Vs multiple deficit models of dyslexia

- 3 deficits – PA, RAN, Language
- Reading – word and nonword reading speed

Compared single (PA or RAN or Language) deficit to multiple deficit (PA + RAN, PA + Language) to hybrid (any deficit or combination)

Most common single deficit was PA 43% children

However, the hybrid model (any deficit or combination) accounted for the most children (68%)

Model 1: Phonological deficit

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At the group level:
Phonological skills at T2 predicted 45% of the variance in reading at T4

At the individual level

	Typical reader	Poor reader
No deficit	85	17
Deficit	47	60
		78%

Model 2: Phonological deficit + broader oral language

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	Typical reader	Poor reader
Typical oral language	94	28
Poor oral language	38	**49**
		64%

	Typical reader	Poor reader
Typical	77	15
Poor phonology	17	13
Poor broader oral language	8	2
Both	30	**47**

However, a similar number had both, so are they separable risk factors?

Phonology R =.667, R^2 = .445

Language R = .671, R^2 =.451, R^2 change = .006, *ns*

Model 2: Phonological deficit + RAN

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	Typical reader	Poor reader
Typical RAN	112	32
Poor RAN	20	45
		58%

	Typical reader	Poor reader
Typical	73	12
Poor phonology	12	20
Poor RAN	39	**5**
Both	8	40

However, many of these children had both, so are they are partially separable risk factors?

Phonology R =.667, R^2 = .445

RAN R = .714, R^2 =.509, ***R^2* change = .064, *p=.000***

Model 3: Hybrid

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All 4 predictors account for 52% of the variance in T4 reading

	Typical reader	Poor reader
Typical RAN	66	11
Poor RAN	66	66
		86%

Which children go on to have early reading difficulties?

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- At the group level
  - Children with preschool language impairment that persists to the point of formal literacy instruction
  - Some family risk children (those with a phonological deficit?)
  - Over a two year time span 4 factors known to predict early reading in TD samples accounted for 52% variance in our sample
- At the individual level
  - The most common single deficit was phonological, 78% of poor readers (higher than Pennington)
  - RAN but not broader oral language skills appears to be a separate risk factor for some children (V-V mapping)
  - A hybrid model was a marginally better fit (86%) than the phonological deficit model (6 additional poor readers)

THANK YOU FOR LISTENING

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