



# Unequal from the start? Social inequality, gender, home learning activities and cognitive outcomes among children in Ireland

Frances McGinnity<sup>1</sup>, Helen Russell<sup>1</sup>, Emer Smyth<sup>1</sup>,  
Aisling Murray<sup>1</sup> and Patricia McMullin<sup>2</sup>

<sup>1</sup>ESRI/TCD and <sup>2</sup>University of Turku, Finland

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# Introduction/Motivation

- Early skill gaps may have profound and long-term consequences for individuals (Ermisch et al 2012)
- A large body of research has found cognitive/educational differences by social origin (Duncan et al 2007)
- Recent decades have also seen higher levels of educational achievement among women (DiPrete and Buchmann, 2013; Smyth 2007)
- Fewer studies have looked at both, that is the interaction between class and gender, a key focus of this paper

# What is 'Intersectionality'?

- Intersectionality – first discussed by Crenshaw (1989)
- Using English data, Strand 2014 finds that SES differences in performance are much larger than gender differences; gender and ethnicity interact in complex ways
- Zucotti and O'Reilly 2019 find that the risk of being NEET in the UK depends on gender, family background and ethnicity
- H1 class differences in cognitive outcomes will not be the same for boys and girls, with boys from working-class/never employed households expected to have the poorest outcomes

# The home learning environment

- On-going debate on whether what matters is ‘who parents are’ (class or education) or ‘what parents do’ (home learning environment)
- Middle-class/highly educated parents engage in more stimulating activities (e.g. reading) with their children and this enhances child’s learning (Melhuish 2020; McMullin et al. 2020)
- But structural inequalities persist over and above HLE (Sullivan et al. 2013; Hartas 2014)
- HLE activities are also found to be gendered and are reflected in later engagement in cultural activities (e.g. reading) (Smyth 2016)
- H2a Home learning activities will vary by class and gender
- H2b Home learning activities/environment will help explain some of the class and gender differences found

# Early Care/Education and Cognitive Development

Kulic et al (2019) – well-targeted high-quality ECE can help reduce educational inequality, but greater access to ECE among more advantaged groups in many systems may offset this effect

- H3 Participation in ECE at 3 will have a positive effect on cognitive outcomes and may help explain class (but not gender) diffs

Paper uses 3 waves of Growing up in Ireland data to investigate social class and gender gaps at age 9 and between 5 and 9 using an intersectional approach & exploring the role of home learning environment and early care and education in understanding gaps

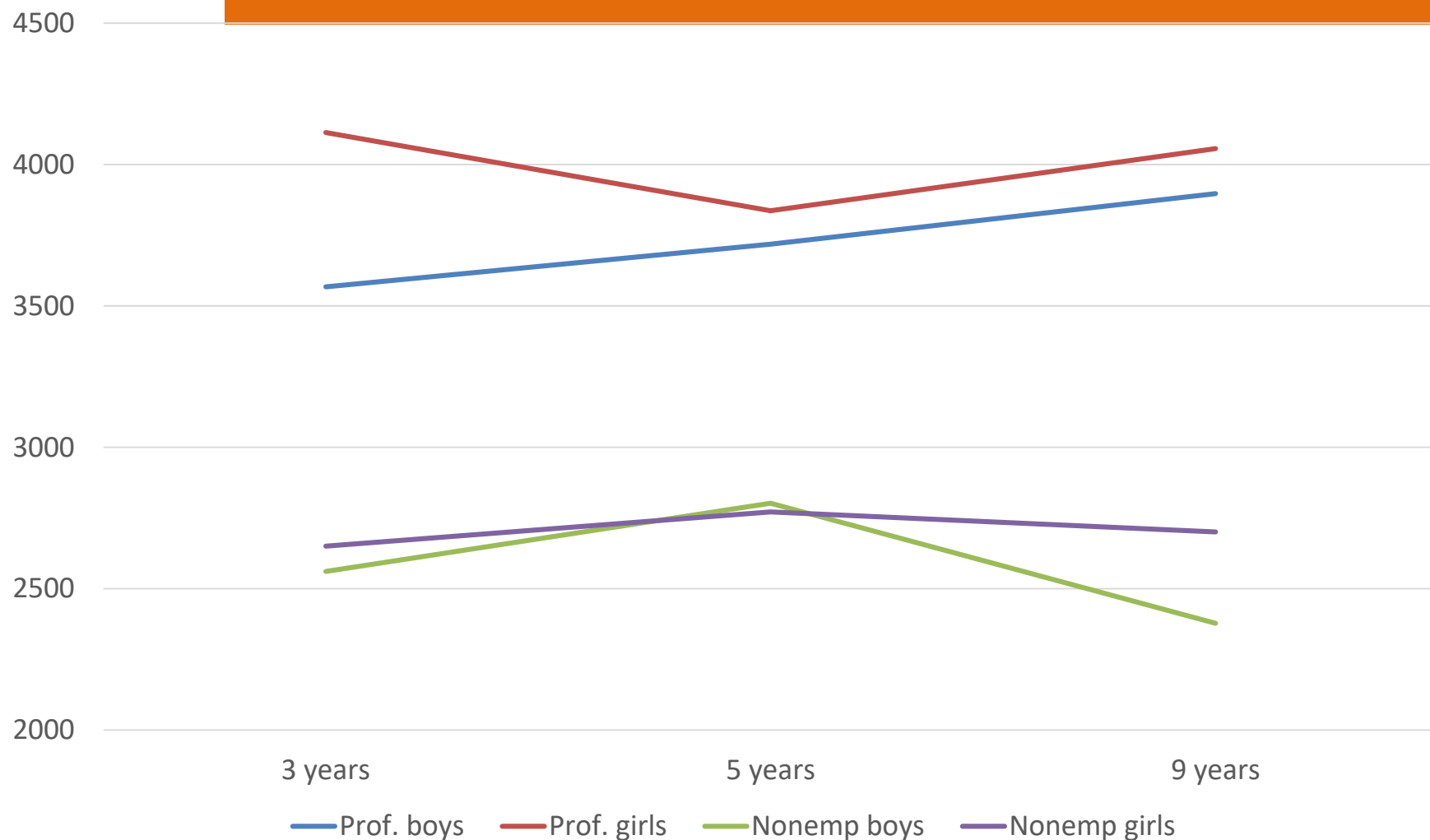
Change over time - Mathew effect: advantage begets advantage

- H4a Gap will widen between class/gender groups between 5-9
- H4b Gap will remain consistent between groups between 5-9

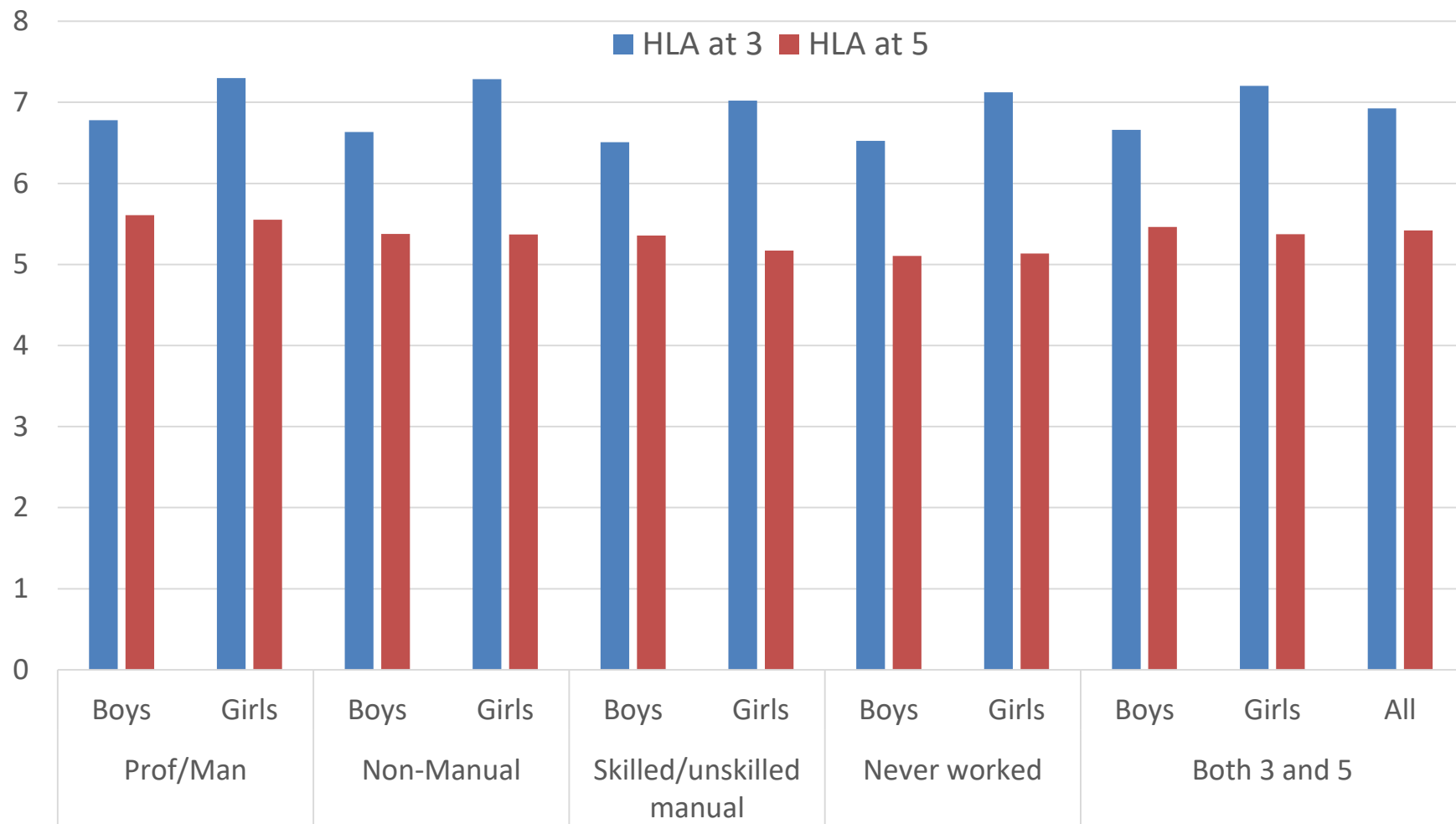
# Measures used

- **Cognitive Ability:** Age 9 Drumcondra Reading test- based on the national curriculum/year group at school and involved multiple choice items (mean 100, SD 15)
  - Cognitive ability at Age 5 (British Ability Scales (Early Years)) - Naming vocabulary. Range 20-80, Mean score 55.4 (SD=12). Standardised t-scores
- **Social Origin** – social origin/gender measures (at aged 3):
  - Social class (family): professional, managerial & technical (46% of children); non-manual (20%); skilled manual and semi/unskilled manual (28%); never employed (14%) – split by gender
- **Home Learning**
  - Activities at 3 (scale of six items); Activities at age 5 (scale of five items); Number of (children's) books in the home at age 5 (pre-coded)
- **Centre based care at 3** (before FPSY)

# Figure 1: Rank score in vocabulary at ages 3, 5 and age for the prof/man and never employed groups by gender



# Figure 2 Home learning activities (HLA) by class and gender





# Table 1 Reading Score at 9 (OLS model)

		Model 1
	(Constant)	105.06***
Language (ref: English first language)	English is second language	-7.82***
Social class/gender subgroups (ref: Professional/girls)	Professional/boys	-1.03*
	Non-manual/girls	-2.90***
	Nonmanual/boys	-3.10***
	Skilled-unskilled/girls	-3.48***
	Skilled-unskilled/boys	-4.47***
	Never employed/girls	-6.77***
	Never employed/boys	-10.00***
Primary Caregiver education (ref: degree or higher)	Lower secondary	-8.83***
	Upper secondary	-4.96***
	Cert/Diploma	-2.71***
Family structure (ref: two-parent)	One-parent family	-1.03*
Financial stress (ref: 'some diffs/ easier')	Financial difficulty	-1.80***
Child's school year-group (ref: 3 <sup>rd</sup> class)	2 <sup>nd</sup> class year-group	-4.09***
	4 <sup>th</sup> class year-group	2.42***

Notes: \*p<.05, \*\*p<.01, \*\*\*p<.001 N of cases=7164

Adj r2= 0.12

# Table 2 Reading Score at 9 (role of home learning & centre-based childcare)

		Model 2
	(Constant)	99.98***
Language (ref: English first language)	English is second language	-6.51***
Social class/gender subgroups (ref: Professional/girls)	Professional/boys	-0.70
	Non-manual/girls	-2.61***
	Nonmanual/boys	-2.34***
	Skilled-unskilled/girls	-2.84***
	Skilled-unskilled/boys	-3.56***
	Never employed/girls	-5.55***
	<b>Never employed/boys</b>	<b>-8.28***</b>
Primary Caregiver education (ref: degree or higher)	Lower secondary	-7.25***
	Upper secondary	-3.99***
	Cert/Diploma	-2.37***
Family structure (ref: two-parent)	One-parent family	-0.94
Financial stress (ref: 'some diffs/ easier')	Financial difficulty	-1.67**
Child's school year-group (ref: 3 <sup>rd</sup> class)	2 <sup>nd</sup> class year-group	-4.06***
	4 <sup>th</sup> class year-group	2.51***
Books in the home (ref: more than 30)	<10 books	-6.31***
	10-20 books	-4.39***
	21-30 books	-1.40**
HLE age 3	HLE Index Score age 3	0.43***
HLE age 5	HLE Index Score age 5	0.33**
Childcare age 3 (ref: not centre-based)	Centre-based care at age 3	0.60

Notes:  
 \*p<.05,  
 \*\*p<.01,  
 \*\*\*p<.001  
 N=7164  
 Adj r2=  
 0.14

# Table 3 Does the class/gender gap widen? Reading score, Change between 5-9

		Model 3
	(Constant)	76.65***
Language (ref: English first language)	English is second language	1.02
Social class/gender subgroups (ref: Professional/girls)	Professional/boys	-0.53
	Non-manual/girls	-2.45***
	Nonmanual/boys	-1.37*
	Skilled-unskilled/girls	-2.07***
	Skilled-unskilled/boys	-2.26***
	Never employed/girls	-3.87***
	Never employed/boys	-6.57***
Primary Caregiver education (ref: degree or higher)	Lower secondary	-6.84***
	Upper secondary	-3.62***
	Cert/Diploma	-2.48***
Family structure (ref: two-parent)	One-parent family	-0.78
Financial stress (ref: 'some diffs/easier')	Financial difficulty	-1.53**
Child's school year-group (ref: 3 <sup>rd</sup> class)	2 <sup>nd</sup> class year-group	-3.71***
	4 <sup>th</sup> class year-group	2.41***
Books in the home (ref: more than 30)	<10 books	-3.89***
	10-20 books	-2.92***
	21-30 books	-1.09*
HLE age 3	HLE Index Score age 3	0.25**
HLE age 5	HLE Index Score age 5	0.23*
Childcare age 3 (ref: not centre-based)	Centre-based care at age 3	0.80*
Vocabulary age 5	T-score Naming Vocabulary age 5	0.43 ***

Notes:

\*p<.05,

\*\*p<.01,

\*\*\*p<.001

N=7164

Adj r2=

0.24

# Do effects of learning environments vary by gender? (Results from interaction models)

- Boys benefited more than girls from greater frequency of HLA at age 3, both reading scores at 9 and cognitive development from 5-9
- No evidence of a gender difference in effect of HLA at 5 on later cognitive development
- Similarly, comparing reading scores at 9, it appears boys benefit more than girls from centre-based care at age 3
- Longer exposure to formal education (i.e. starting school earlier) seems to also benefit boys more than girls

# Key Findings: Summary

- We find a clear social class gradient at 9, and for professional and never employed group boys perform significantly worse than girls, though gender gap largest for most disadvantaged
- Adding home learning activities and centre-based care at 3 reduces the gender differences so only most disadvantaged boys now have lower scores than girls in their social class
- However, differences in scores by social class are not fully explained by any variation in home learning or childcare participation
- In terms of cognitive development between 5 and 9, we see a positive effect of learning activities both within and outside the home in facilitating development
- We also see evidence of the most disadvantaged boys falling further behind

# Limitations and policy implications

- Note we have no indicators of the quality of centre-based care in the GUI data, though shown to be important (Kulic et al 2019)
- Home learning activities measure may be affected by social desirability bias, though using both books in the home and activities may help mitigate this
- Home learning and formal learning seem to benefit boys more than girls though this requires further analysis
- Findings suggest that for policymakers, measures to support parents to enrich learning potential of their homes and read to both boys and girls (consistent with First Five policy aims)
- Though there is a limit to the extent that this will reduce the gap, given clear social origin gaps in cognitive development remain

*Thanks for listening!*

*This is work in progress – comments & suggestions welcome*