

# Centre of Research Excellence in Child Language

The Social Communication Intervention Project:  
An intervention to promote pragmatic language  
skills in middle childhood –  
and its potential implications for behaviour

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# Aims of the session

- To describe the SCIP trial and its results
- To consider the trial with the context of recent findings about the mediational role of pragmatics in the social disadvantage/behaviour link
- To put the trial within the context of the UK's Better Communication Research Programme (BCRP)

# some other examples from:-

Law, J., Lee,W., Roulstone, S., Wren, Y., Zeng, B. & Lindsay, G. ( 2012) What works : Interventions for children with speech language and communication needs Nottingham: DFE.

- **Social Communication Intervention Programme**
- Social Stories
- Social Thinking
- Social Use of Language Programme
- Socially Speaking

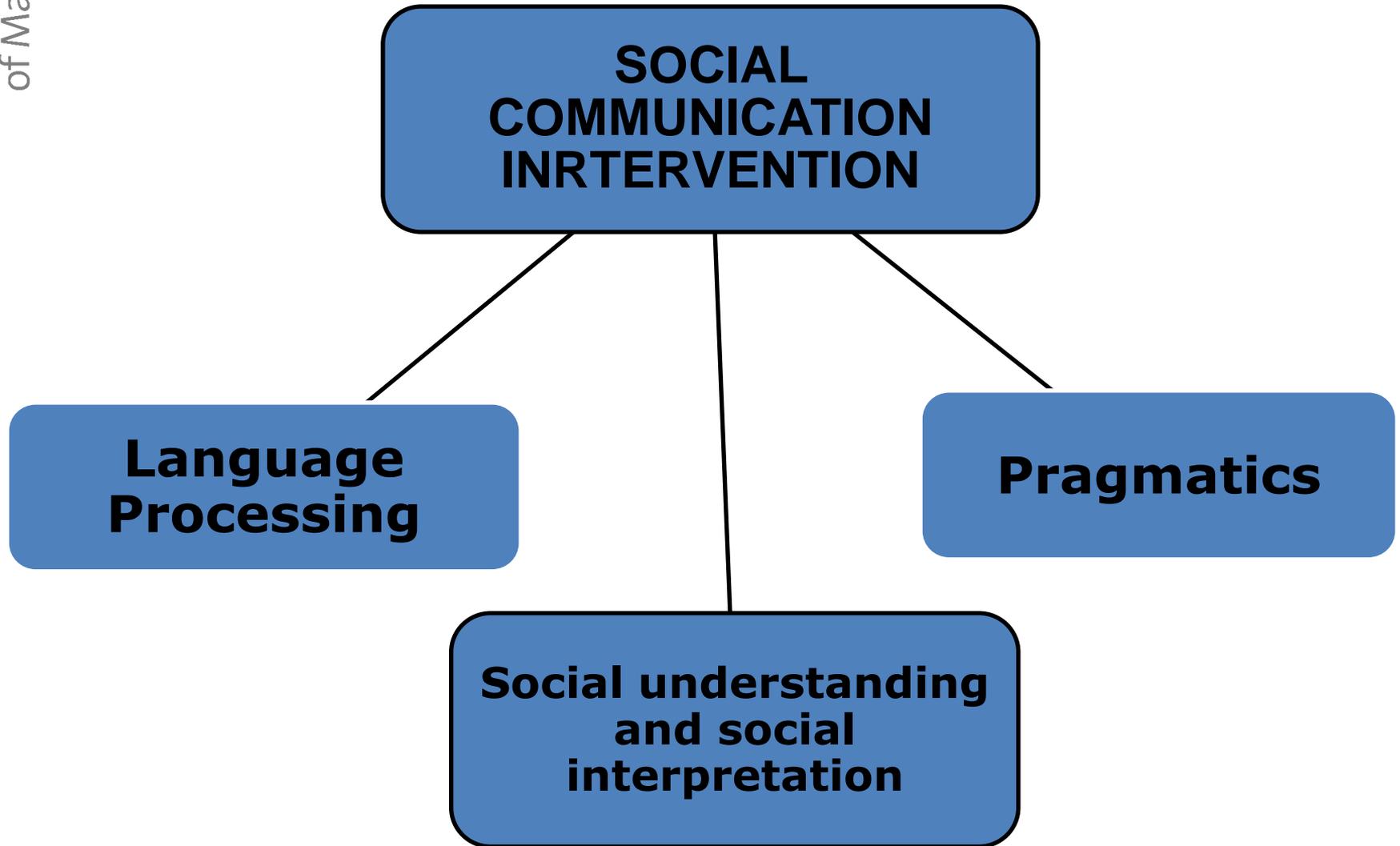
# The SCIP trial

“The Social Communication Intervention Project: a randomised controlled trial of the effectiveness of speech and language therapy for school-age children who have pragmatic and social communication problems with or without autism spectrum disorder”

Adams, C., Lockton, E., Freed, J., Gaile, J., Earl, G., McBean, K., Nash, M., Green, J., Vail, A. & Law, J.

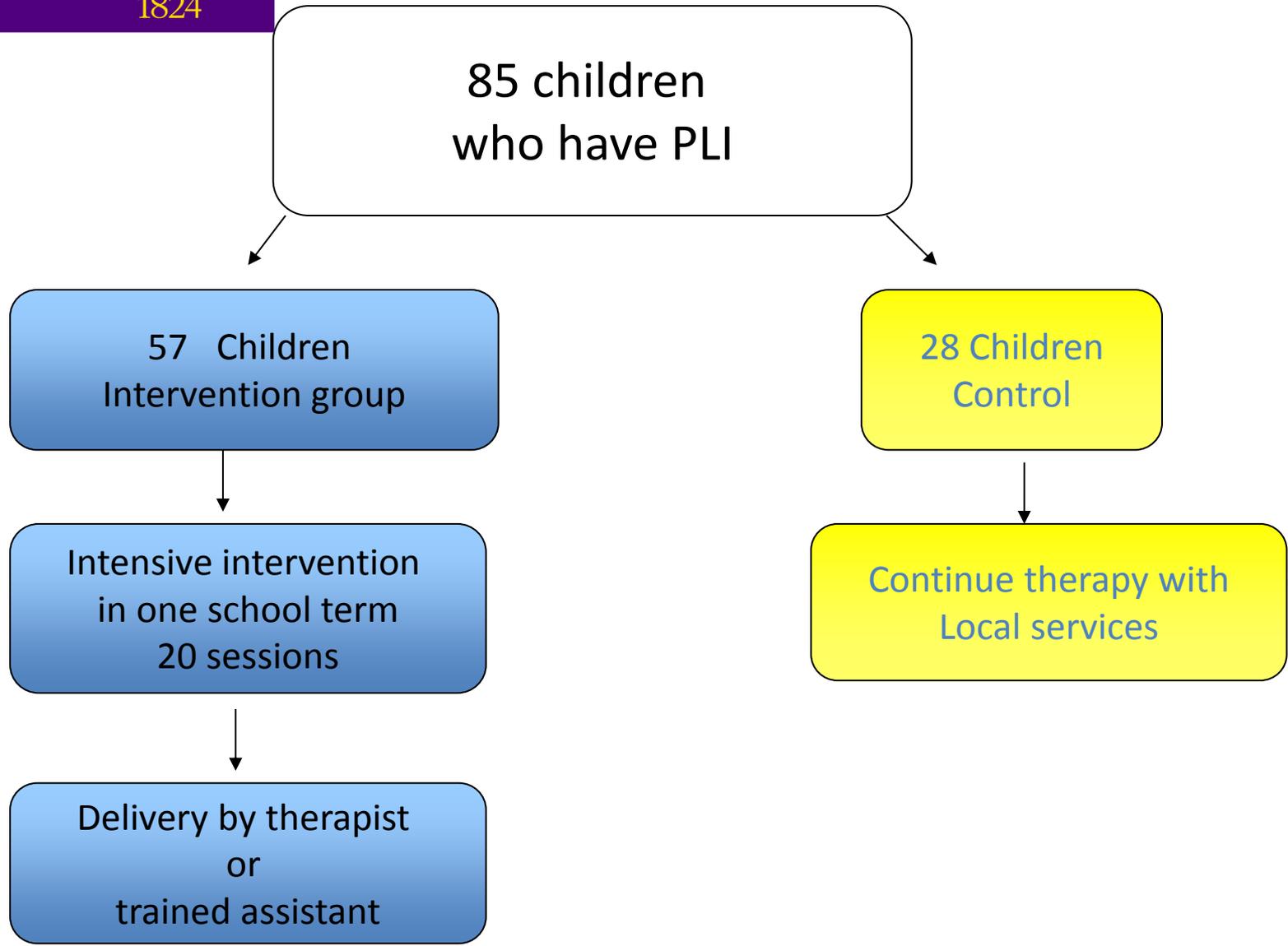
Funded by the Nuffield Foundation

# SCIP intervention framework



# SCIP intervention

- Up to three, one-hour therapy sessions per week (up to a maximum of 20 sessions)
- Delivered in school by specialist therapist or trained assistant
- One-to-one sessions, provision of whole class and home based activities
- Parent/teacher/LSA attendance and input solicited throughout



# Outcome measures

- CELF 4 = standardised language test, receptive and expressive language
- Targeted Observation of Pragmatics in Children's Conversation (TOPICC)
- Pragmatics and Autism Communication lists from Children's Communication Checklist CCC-2
- SCIP Parent ratings of social communication
- SCIP Teacher ratings of classroom listening and communication

# Parent reported outcomes

- Likely to have overall perspective of social functioning and social communication
- Functional participation level rather than impairment focus
- Reflected in the increased emphasis on patient reported outcomes or PROMS in UK NHS
- Have already parent reported data in the CCC-2 at Time 1 and Time 3

# Development of the TOPICC

Take aspects shown to be important in previous studies

Each aspect coded in real time from video by trained observer and reliability coder

- **Reciprocity**
- **Listener Knowledge**
- **Verbosity**
- **Topic Management**
- **Discourse style**
- **Response Problems**

Rating scale:

3 = marked evidence of that behaviour across conversation; makes a marked impact on the interaction

2 = makes a moderate but still significant impact on the interaction

1 = is noticeable occasionally but makes only a slight impact on the interaction

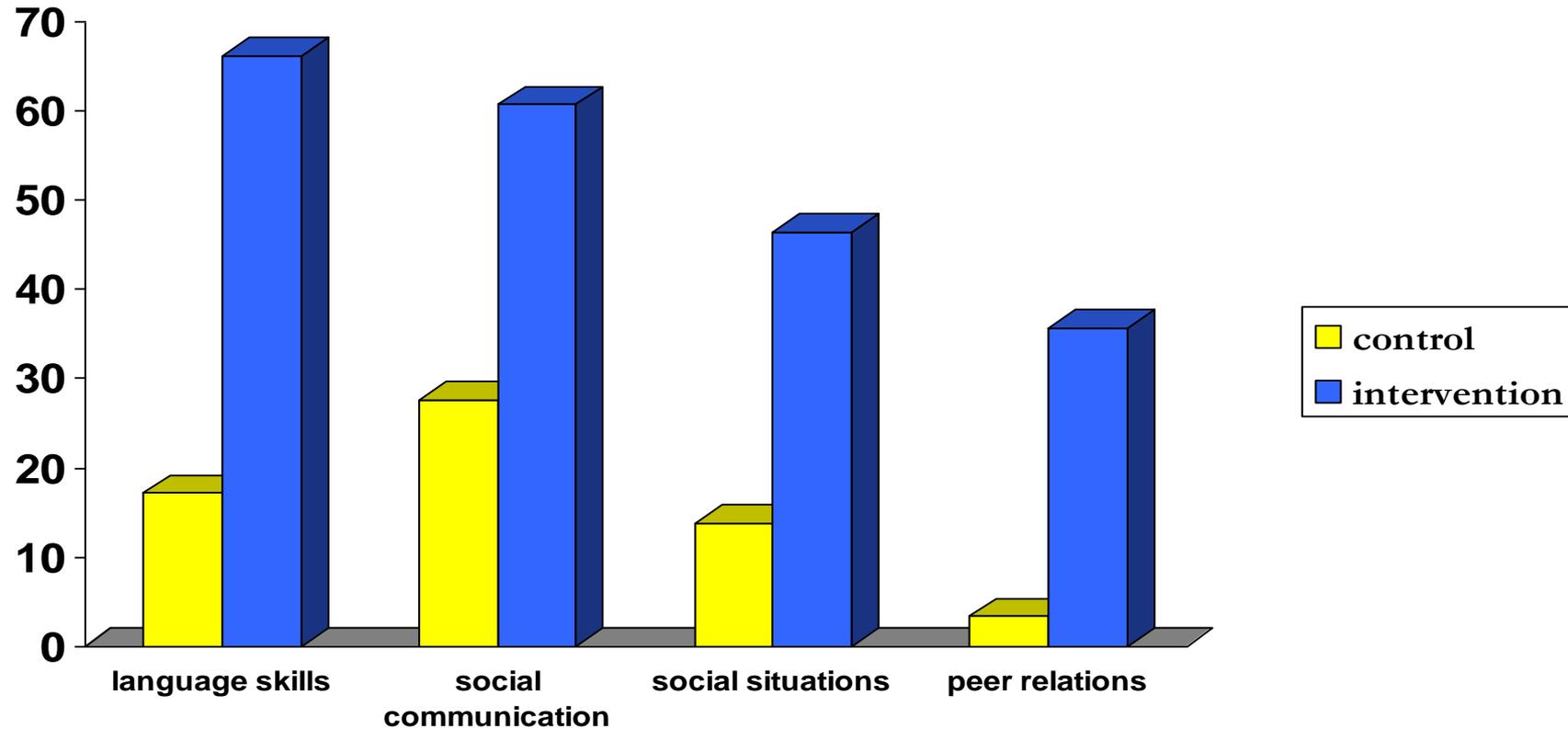
0 = is never observed and the behaviour is typical of mature interaction style

# TOPICC as a individual observational profile ?

- Prompts broad observation of key characteristics of conversation likely to be of interest
- Can do it in real time
- Variability in normative data
- Possibility of over-pathologising immature behaviours
- Even with skilled observers measuring pragmatics and social communication is challenging

	<b>Intervention<sup>1</sup></b>	<b>Control<sup>1</sup></b>	<b>Effect<sup>2</sup> (95% CI)</b>	<b><i>p</i></b>
CCC-2 PRAG (n=55)	27.9 (12.9)	33.5 (9)	5.5 (.04 to 10.9)	.049
CCC-2 AUT (n=57)	24.3 (11.4)	24.1 (9.6)	.13 (-4.8 to 5.1)	.96
TOPICC (n=78)	22 (43.1)	5 (18.5)	.3 (.1 to .9)	.04
ERRNI-I (n=85)	97.2 (14.8)	100.8 (13.8)	3.3 (-2.5 to 9.1)	.27
ERRNI-R (n=85)	93.7 (20.9)	93.5 (23.2)	.58 (-8.7 to 9.9)	.90
ERRNI-C (n=85)	91.6 (14.5)	93.4 (15.5)	1.4 (-4.7 to 7.5)	.64
PRO-LS (n=54)	26 (68.4)	7 (43.8)	2.9 (.9 to 9.9)	.09
PRO-SC (n=54)	28 (73.7)	4 (25)	8 (2.1 to 31.1)	.003
PRO-SS (n=53)	24 (63.2)	3 (20)	7.4 (1.7 to 31.8)	.007
PRO-PR (n=52)	24 (63.2)	7 (50)	1.6 (.5 to 5.7)	.46
TRO-CLS (n=58)	30 (75)	8 (44.4)	3.7 (1.2 to 12.1)	.03

# Parent perceptions of changes for the better



SCIP outcomes summary	Masked or not masked?	Intervention effect?
Standardised language test CELF-4	Masked	No
Ratings of conversational skills change TOPICC	Masked	Yes
Parent ratings of pragmatic skills CCC-2 lists	Not masked	Yes
Parent perceptions of improvements in social communication and related skills	Not masked	Yes
Teacher perceptions of change in classroom listening skills	Not masked	Yes

And the link to behaviour?

## And the link to intervention

“If we fail to identify mediators, we are likely to make faulty assumptions about the design of improved treatments.”

Rutter 2009 p.48.

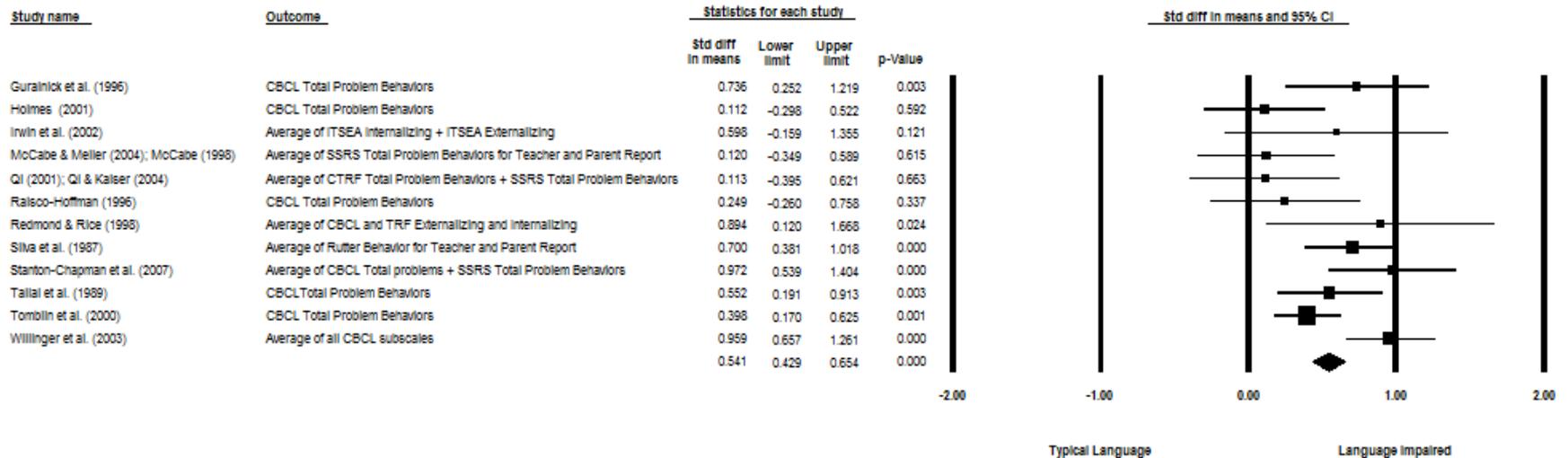
# a word on mediators and moderators..

- a **moderator** is a qualitative (e.g., sex, race, class) or quantitative (e.g., level of reward) variable that affects the direction and/or strength of the relation between an independent or predictor variable and a dependent or criterion variable;
- In general, a given variable may be said to function as a **mediator** to the extent that it accounts for the relation between the predictor and the outcome. Mediators explain how external physical events take on internal psychological significance.
- Whereas moderator variables specify when certain effects will hold, mediators speak to how or why such effects occur.

Baron, R. M., & Kenny, D. A. (1986). The moderator-mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of Personality and Social Psychology*, 51, 1173-1182.

# Children with Low Language Have More Problem Behaviors [Kaiser and Roberts]

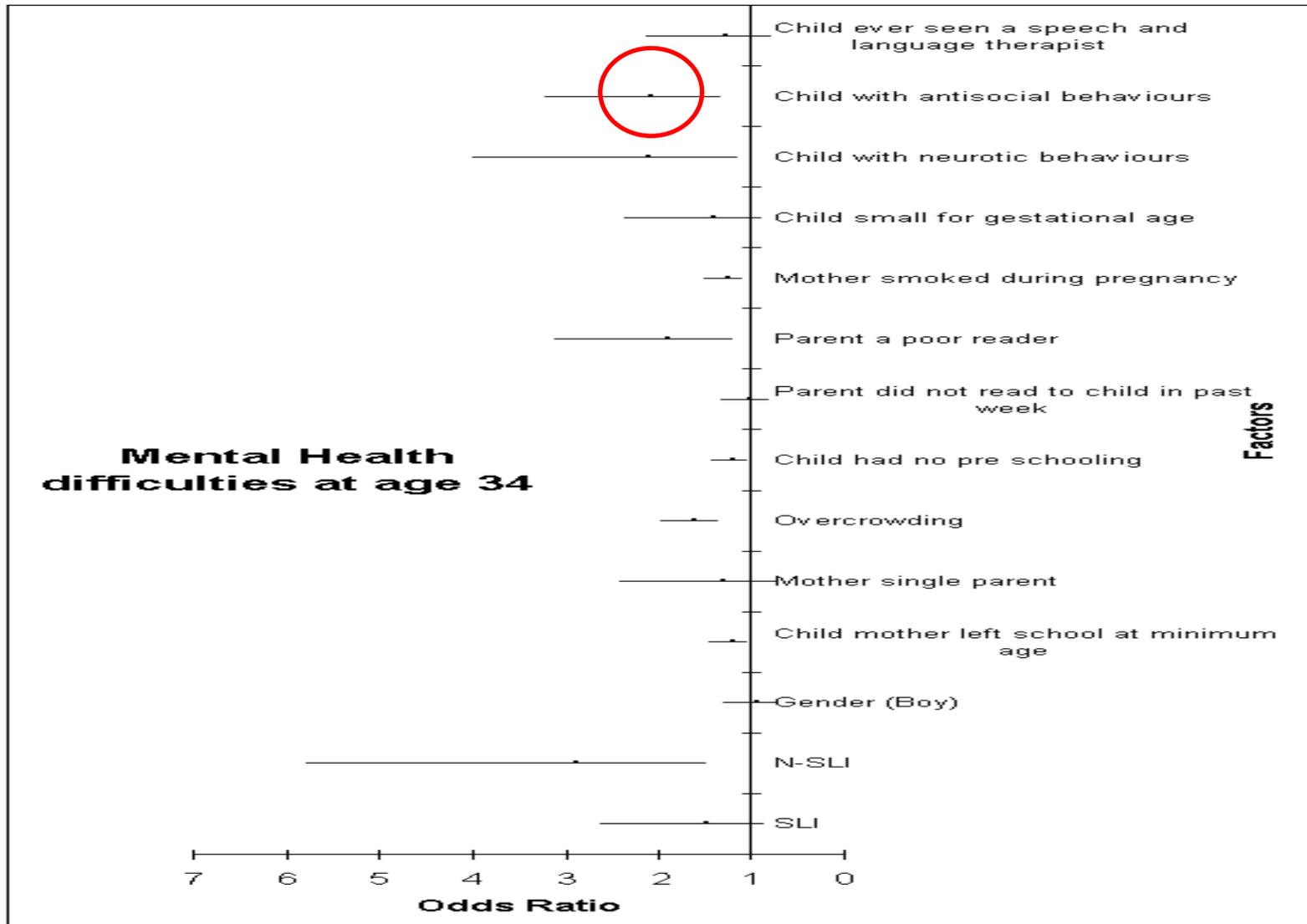
- 12 studies, 2201 participants
- ES = .533, CI = .347-.719, p=.000



# Long term outcomes

- British Cohort Study (BCS70), one of Britain's richest research resources for the study of human development;
- Over 18,000 persons living in Great Britain who were born in one week in April 1970;
- Data available about the cohort members at birth, 5, 10, 16, 26, 30 and most recently in 2004 when aged 34 years;
- Wide range of information collected from parent's report, school report, tests and medical examinations;
- Excluded children whose first language was not English and whose ethnicity was not white European.

# Mental health at 34 years



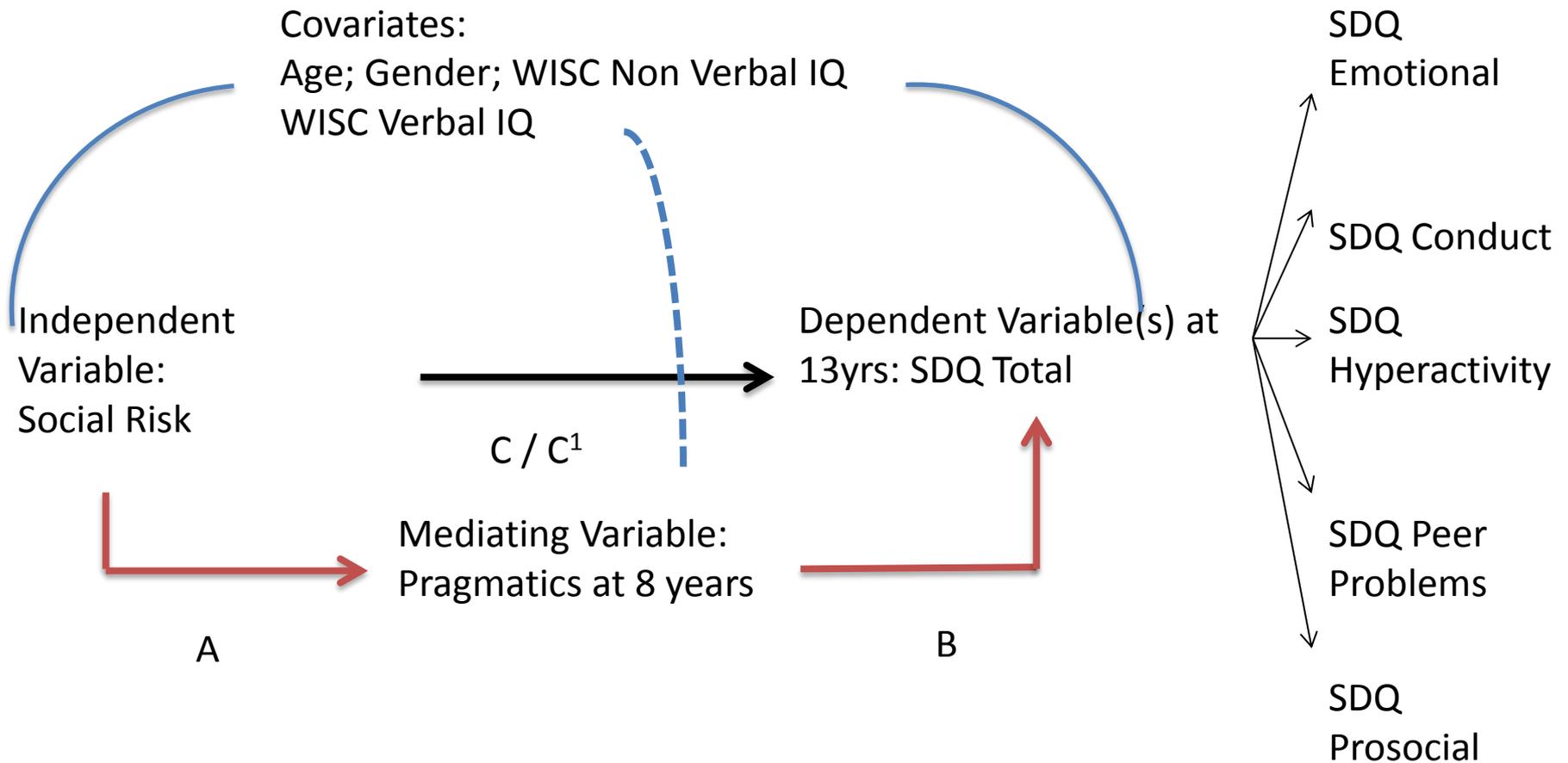
# The ALSPAC Cohort

- Avon Longitudinal Study of Parents and Children (ALSPAC)
- a prospective population-based cohort study of children born to mothers in the west of England in the early 1990s.
- 14,000 in original sample
- Complete data were available from the 2915 children for whom data for all variables were available.

# Predictors of teenage behaviour

	<b>B</b>	<b>Std. Error</b>	<b>p</b>	<b>Lower Bound</b>	<b>Upper Bound</b>
Gender	-.720	.120	.000	-.955	-.484
Age	-.056	.020	.005	-.095	-.017
Birth weight	-.062	.109	.571	-.275	.152
Social risk	-.728	.048	.000	-.822	-.634
CCC – Pragmatics	-.331	.007	.000	-.345	-.316
WISC - verbal IQ	-.070	.005	.000	-.079	-.061
WISC – non-verbal IQ	-.079	.006	.000	-.090	-.068

# Pragmatics as a potential mediator of the social risk/behaviour relationship



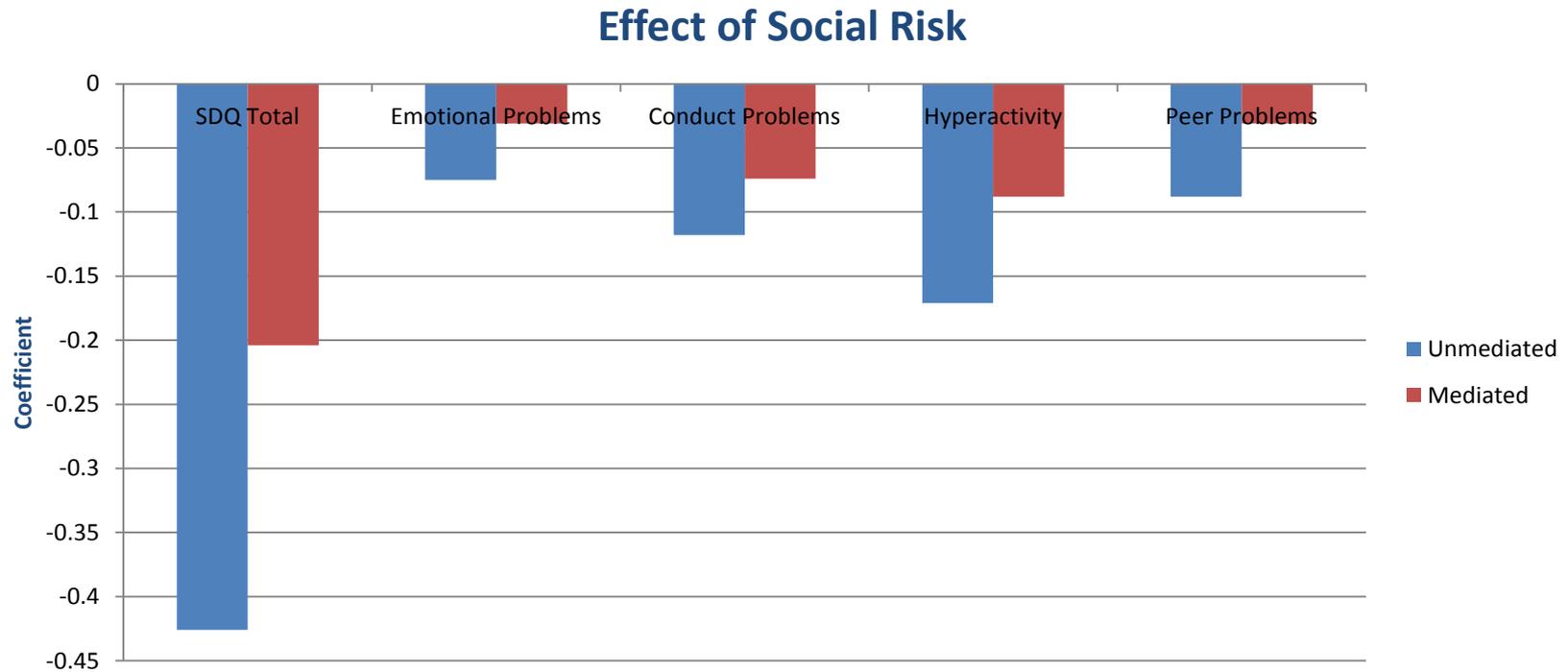
# SDQ Behaviour Total at 13 years as the outcome

Step	Path	Estimate (SE)	95% CI		Indirect effect (SE)
			Lower	Upper	
1	C	-0.426*** (0.076)	-0.592	-0.314	
2	A	0.697*** (0.112)	0.489	0.885	
3	B	-0.318*** (0.011)	-0.342	-0.300	
4	C'	-0.204** (0.068)	-0.337	-0.071	<b>-0.222*** (0.043)</b>
WISC Verbal IQ		-0.004 (0.007)	-0.017	0.010	
WISC Non-verbal IQ		-0.025** (0.021)	-0.040	-0.010	
Age		-0.023 (0.021)	-0.064	0.018	
Gender		-0.203 (0.155)	-0.508	0.101	
	R <sup>2</sup>	0.261			
	sample size	2915			

# Pragmatics as a potential mediator of the social risk/behaviour relationship

	path	SE	Upper	Lower	
<b>Emotional problems</b>	C'	-0.031 (0.027)	-0.083	0.021	-0.044*** (0.009)
<b>Conduct problems</b>	C'	-0.074** (0.021)	-0.116	-0.033	-0.044*** (0.009)
<b>Hyperactivity</b>	C'	-0.088** (0.031)	-0.149	-0.027	-0.082*** (0.016)
<b>Peer problems</b>	C'	-0.031 (0.024)	-0.077	0.015	-0.057*** (0.011)

# Pragmatics as a potential mediator of the social risk/behaviour relationship



# In conclusion

- The relationship between social communication and behaviour is becoming clearer;
- For many children it almost appears to be one and the same thing with, from these data at least, mediating effects over time;
- Suggests causation and this, in turn, highlights the role of social communication interventions like SCIP;
- We need to know much more about the potential impacts of these interventions both on social communication outcomes BUT more importantly on behaviour itself;
- This poses an important challenge for education, CAMHS and speech and language therapy services (some of whom explicitly exclude children with mental health difficulties).

# Thanks to:-

For the SCIP trial in the North West of England and the  
South East of Scotland

Adams, C., Lockton, E., Freed, J., Gaile, J., Earl, G.,  
McBean, K., Nash, M., Green, J., Vail, A.

For the ALSPAC analysis

Rush, R. Clegg, J. Peters, T. Roulstone, S.

- Adams, C., Lockton, E., Gaile, J., Freed, J., Earl, G., McBean, K., Nash, M., Green, J., & **Law, J.** (2012) The Social Communication Intervention Project: a randomised controlled trial of speech and language therapy for school-age children who have pragmatic communication impairment with or without autism spectrum disorder *International Journal of Language and Communication Disorders*. 47, 233–244.
- Law, J., Rush, R., Parsons, S. & Schoon, I. (2009) Modelling developmental language difficulties from school entry into adulthood: Literacy, mental health and employment outcomes. *Journal of Speech, Language and Hearing Research* 52, 1401-1416.
- Law, J., Plunkett, C., Stringer, H. (2011) The interaction between behaviour and speech and language difficulties: does intervention for one affect outcomes in the other? *Child Language Teaching and Therapy* 28, 7-25.
- Law, J., Roulstone, S., Lee, W., Wren, Y., Zeng, B. & Lindsay, G. (2012) What works : Interventions for children with speech language and communication needs Nottingham: DFE.
- Law, J., Rush, R., Clegg, J., Peters, T & Roulstone, S. (in preparation) The role of pragmatics in mediating the relationship between social disadvantage and behaviour: an analysis of data from the ALSPAC birth cohort.

# SCIP

Includes details of trial, intervention and how to get the manual:-

[http:// www.psych-sci.manchester.ac.uk/scip/](http://www.psych-sci.manchester.ac.uk/scip/)

# And the “What works” (WW) for children with speech and language needs report

- Law, J., Roulstone, S., Lee, W., Wren, Y., Zeng, B. & Lindsay, G. (2012) *What works : Interventions for children with speech language and communication needs* Nottingham: DfE
- All the other Better Communication Research Programme reports:
- <http://www.education.gov.uk/researchandstatistics/research/better>
- and the WW interactive website:-
- [www.thecommunicationtrust.org.uk/schools/what-works](http://www.thecommunicationtrust.org.uk/schools/what-works)