

**PARENTING AND ITS CONTEXTS:
THE IMPACT ON CHILDHOOD
ANTISOCIAL BEHAVIOUR**

**A thesis submitted to the University of London for the degree of
Doctor of Philosophy**

Julia Morgan

**Centre for the Analysis of Social Exclusion
Department of Social Policy
London School of Economics**

October 2006

UMI Number: U615883

All rights reserved

INFORMATION TO ALL USERS

The quality of this reproduction is dependent upon the quality of the copy submitted.

In the unlikely event that the author did not send a complete manuscript and there are missing pages, these will be noted. Also, if material had to be removed, a note will indicate the deletion.



UMI U615883

Published by ProQuest LLC 2014. Copyright in the Dissertation held by the Author.
Microform Edition © ProQuest LLC.

All rights reserved. This work is protected against
unauthorized copying under Title 17, United States Code.



ProQuest LLC
789 East Eisenhower Parkway
P.O. Box 1346
Ann Arbor, MI 48106-1346

THESES

F

8740



Bib 1125069

ABSTRACT

This research provides a quantitative analysis of data collected by the MRC funded 'Twins Early Development Study - Environment' also known as the E-Risk study. The E-Risk study is a national sample of 1116 families with twin children who were born in 1994-95. The families were home-visited in 1999-2000 when the children were 5 years old.

Using a multi-disciplinary approach the research aims to build knowledge about risk factors and protective factors for childhood antisocial behaviour. Our analysis is four-fold. First, we examine how far distinct measures of parenting behaviour and maternal attitude impact on child antisocial behavioural outcomes. We define parenting behaviour as parental discipline, and measure it by our variable frequency of smacking¹. Maternal attitude is measured by four variables which assess maternal expressed emotion: maternal warmth, maternal positive comments, maternal negative comments and maternal negativity. Parenting behaviour and maternal attitude are examined from a 'between' family perspective. Second, we extend our analysis beyond the parent-child dyad and examine how far the wider context within which the child develops (Bronfenbrenner 1979), for example, family structure, marital conflict, poverty, and parental antisocial behaviour, impact on child antisocial behaviour outcomes. Third, we introduce our statistically significant parenting and contextual variables into a model to identify some of the key risk factors for antisocial behaviour in children aged 5 years old.

¹ Frequency of Smacking relates to both parents smacking of children, whilst maternal attitude measures the mother's attitude only.

Lastly, we examine how far our four contextual factors impact on parenting practices. We continue by examining to what extent parenting behaviour and maternal attitude mediates the effect of these contextual factors on child antisocial behaviour at age 5 years old. Our research utilises the E-Risk sampling frame which oversampled younger mothers and we examine the results in terms of a weighted sample which is representative of all mothers and is referred to as 'all' mothers, a younger mother sample and an older mother sample.

TABLE OF CONTENTS

	Page
ABSTRACT	2
TABLE OF CONTENTS	4
LIST OF TABLES AND FIGURES	14
ACKNOWLEDGEMENTS	21
ABBREVIATIONS	22
1. ANTISOCIAL BEHAVIOUR: DEFINITIONS, THEORY AND POLICY ...23	
1.1: Background Introduction.....	23
1.2: What is Antisocial Behaviour?.....	24
1.3: Childhood Antisocial Behaviour.....	31
1.4: Theories of Antisocial Behaviour.....	33
1.4.1: The Moral Underclass Discourse.....	34
1.4.2: Social Control Theory.....	37
1.4.3: Coercion Theory.....	38
1.4.4: Social Development Theory.....	39
1.4.5: Interactional Perspective.....	41
1.4.6: Ecological Theory.....	41
1.4.7: Family Stress Model.....	43
1.4.8: Genetic Explanations.....	45
1.4.9: Summary.....	47
1.5: Government Policy on Antisocial Behaviour.....	48
1.6: Government Policy on Children and Families.....	54
1.7: The Wider Context, the Family, and Government Policy.....	60
1.8: Vulnerable Families and Government Policy.....	63
2. RISK FACTORS FOR CHILD ANTISOCIAL BEHAVIOUR67	
2.1: Introduction.....	67

2.2: Risk Factors for Antisocial Behaviour.....	68
2.2.1: Child Risk Factors.....	68
2.2.2: Social and Family Risk Factors.....	70
2.3: Parenting and Antisocial Behaviour.....	73
2.4: Parenting, the Wider Context and Antisocial Behaviour.....	76
2.5: Parenting Interventions and Antisocial Behaviour.....	78
2.6: Protective Factors for Child Antisocial Behaviour.....	81
3. PROPOSED RESEARCH AND RESEARCH QUESTIONS.....	84
3.1: Introduction.....	84
3.2: Research Questions.....	90
3.3: The Role of the Author in the Work Described in this Thesis.....	94
3.4: Publications from Work Described in this Thesis.....	94
3.5: Content of Chapters.....	95
4. DATA SET AND METHODOLOGY.....	97
4.1: Sampling Frame.....	97
4.2: Sample Demographics.....	101
4.3: Data Collection.....	102
4.4: Data Set Construction.....	103
4.5: Missing Data.....	104
4.6: Research Methodology.....	111
4.6.1: Sample Groups.....	111
4.6.2: Sample Weights.....	112
4.6.3: Violation of the Assumption of Independence.....	113
4.6.4: Categorical Data.....	113
4.6.5: Statistical Analysis.....	114
4.6.6: Causal or Correlational?.....	114
4.7: Ethics.....	116
4.8: Twin Designs.....	118

5. VARIABLES AND SAMPLE DEMOGRAPHICS.....	120
5.1: Child Antisocial Behaviour.....	120
5.1.1: Mother’s Report on Child Antisocial Behaviour.....	121
5.1.2: Teacher’s Report on Child Antisocial Behaviour.....	122
5.1.3: Correlations Mother/Teacher Report on Child ASB.....	124
5.2: Parental Antisocial Behaviour	125
5.2.1: Mother's Antisocial Behaviour.....	128
5.2.2: Father's Antisocial Behaviour.....	129
5.3: Parenting	132
5.3.1: Frequency of Smacking.....	133
5.3.2: Expressed Emotion.....	134
5.3.2.1: Maternal Positive Comments.....	137
5.3.2.2: Maternal Negative Comments.....	138
5.3.2.3: Maternal Negativity.....	140
5.3.2.4: Maternal Warmth.....	142
5.3.2.5: How Correlated are the Parenting Variables?.....	144
5.4: Family Structure.....	144
5.5: Marital Conflict.....	147
5.5.1: Disagreement about Childrearing.....	148
5.5.2: Parental Quarrelling.....	149
5.5.3: Domestic Violence.....	150
5.5.4: Marital Conflict.....	151
5.6: Poverty.....	152
5.6.1: Unemployment.....	152
5.6.2: Income.....	153
5.6.3: Number of Benefits Claimed in the Last Year.....	154
5.6.4: Housing Tenure.....	155
5.6.5: Car Ownership.....	155
5.6.6: Poverty.....	156
5.7: Validity and Reliability of Variables.....	156
5.8: Sample Variables According to the Mothers Age at First Birth.....	160

6.	PARENTING BEHAVIOUR, MATERNAL ATTITUDE AND CHILD ANTISOCIAL BEHAVIOUR.....	166
6.1:	Introduction.....	166
6.2:	Research Questions.....	168
6.3:	Results.....	170
6.3.1:	Bivariate Analysis: Parenting as a Risk Factor.....	171
6.3.1.1:	Frequency of Discipline.....	171
6.3.1.2:	Maternal Positive Comments.....	173
6.3.1.3:	Maternal Negative Comments.....	174
6.3.1.4:	Maternal Warmth.....	175
6.3.1.5:	Maternal Negativity.....	176
6.3.1.6:	Summary of Bivariate Analysis.....	177
6.3.2:	Multivariate Analysis: Parenting as a Risk Factor.....	178
6.3.2.1:	Summary of Multivariate Analysis.....	187
6.3.3:	Frequency of Smacking as a Protective Factor.....	188
6.4:	Discussion.....	197
6.5:	Conclusions.....	200
7.	FAMILY STRUCTURE, MARITAL CONFLICT AND CHILD ANTISOCIAL BEHAVIOUR.....	203
7.1:	Introduction.....	203
7.1.1:	Family Structure.....	204
7.1.2:	Marital Conflict.....	205
7.1.3:	Marital Conflict, Family Structure and Child Antisocial Behaviour.....	206
7.1.4:	Research Questions.....	207
7.2:	Results.....	208
7.2.1:	To what extent is Family Structure associated with Child Antisocial Behaviour?.....	208
7.2.2:	To what extent is Disagreement about Childrearing associated with Child Antisocial Behaviour?.....	209

7.2.3:	To what extent is Parental Quarrelling associated with Child Antisocial Behaviour?.....	212
7.2.4:	To what extent is Domestic Violence associated with Child Antisocial Behaviour?.....	213
7.2.5:	Does Disagreement about Childrearing have a stronger association with Child Antisocial Behaviour than Parental Quarrelling or Domestic Violence?.....	214
7.2.6:	Family Structure, Marital Conflict and Child Antisocial Behaviour.....	216
7.3:	Discussion.....	219
7.4:	Conclusions.....	222
8.	SOCIAL EXCLUSION AND CHILD ANTISOCIAL BEHAVIOUR.....	226
8.1:	Introduction.....	226
8.1.1:	What is Social Exclusion?.....	227
8.1.2:	Poverty.....	229
8.1.3:	Parental Antisocial Behaviour.....	231
8.1.4:	Teenage Mothers.....	233
8.2:	Research Questions.....	234
8.3:	Results.....	235
8.3.1:	Poverty Indicators and Child Antisocial Behaviour.....	235
8.3.2:	Child Antisocial Behaviour and Poverty.....	238
8.3.3:	Child Antisocial Behaviour and the Mother's Antisocial Behaviour.....	240
8.3.4:	Child Antisocial Behaviour and the Biological Father's Antisocial Behaviour.....	241
8.3.5:	Child Antisocial Behaviour and Parental Antisocial Behaviour.....	243
8.3.6:	Poverty and Parental Antisocial Behaviour.....	244
8.3.7:	Younger Mothers, Maternal Antisocial Behaviour and Multiple Risk Factors.....	245
8.4:	Discussion.....	251
8.5:	Conclusions.....	254

9. PARENTING AND THE PARENTING CONTEXT: RISK FACTORS FOR CHILD ANTISOCIAL BEHAVIOUR AT AGE 5 YEARS OLD.....	257
9.1: Introduction.....	257
9.2: Research Questions	259
9.3: Results.....	260
9.3.1: Risk Factors for Child Antisocial Behaviour at age 5 years old as reported by the mother.....	260
9.3.2: Risk Factors for Child Antisocial Behaviour at age 5 years old as reported by the Teacher.....	275
9.3.3: How far does Frequency of Smacking act as a Protective Factor Moderating the effects of Marital Conflict, and Parental Antisocial Behaviour on Child Antisocial Behaviour?.....	276
9.4: Discussion.....	284
9.5: Conclusions.....	289
10. PARENTING BEHAVIOUR, MATERNAL ATTITUDE AND THE PARENTING CONTEXT.....	292
10.1: Introduction.....	292
10.1.1: Marital Conflict and Parenting Behaviour and Maternal Attitude.....	294
10.1.2: Poverty and Parenting Behaviour and Maternal Attitude.....	295
10.1.3: Family Structure and Parenting Behaviour and Maternal Attitude.....	295
10.1.4: Parental Antisocial Behaviour and Parenting Behaviour and Maternal Attitude.....	297
10.2: Research Questions.....	298
10.3: Results.....	300
10.3.1: Parenting Behaviour, Maternal Attitude and Marital Conflict.....	300
10.3.1.1: Disagreement about Childrearing.....	301
10.3.1.2: Parental Quarrelling.....	305

10.3.1.3: Domestic Violence.....	308
10.3.2: Poverty, Parenting Behaviour and Maternal Attitude	311
10.3.3: Family Structure, Parenting Behaviour and Maternal Attitude	314
10.3.4: Parenting Behaviour, Maternal Attitude and Parental Antisocial Behaviour.....	319
10.3.5: Parenting Practices as a Mediator of the Effects of Marital Conflict, Poverty, Family Structure and Parental Antisocial Behaviour on Child Antisocial Behaviour.....	327
10.3.5.1: Parenting Practices as a Mediator of the effects of Marital Conflict on Child Antisocial Behaviour.....	329
10.3.5.2: Parenting Practices as a Mediator of the effects of Poverty on Child Antisocial Behaviour	331
10.3.5.3: Parenting Practices as a Mediator of the effects of Family Structure on Child Antisocial Behaviour	332
10.3.5.4: Parenting Practices as a Mediator of the effects of Parental Antisocial Behaviour on Child Antisocial Behaviour.....	334
10.4: Discussion.....	336
10.5: Conclusions.....	340
11. CONCLUSIONS.....	343
11.1: Introduction.....	343
11.2: Research Questions.....	346
11.3: Summary of Findings and Conclusions.....	348
11.3.1: Parenting Behaviour, Maternal Attitude and Child Antisocial Behaviour.....	349
11.3.2: Family Structure, Marital Conflict and Child Antisocial Behaviour.....	353
11.3.3: Social Exclusion , and Child Antisocial Behaviour.....	357
11.3.4: Risk Factors for Child Antisocial Behaviour at Age 5 years old.....	361

11.3.5: Parenting Behaviour, Maternal Attitude and the Parenting Context.....	366
11.3.6: Parenting Behaviour and Maternal Attitude as a Mediator of the effects of other Risk Factors on Child Antisocial Behaviour.....	369
11.3.7: Younger Mothers and Multiple Risk Factors.....	370
11.3.8: Summary of Key Findings.....	372
11.4: Theoretical Implications.....	377
11.5: Implications for Interventions.....	387
11.6: Policy Implications.....	389
11.7: Strengths of Research.....	392
11.8: Limitations of Research.....	393
11.9: Future Research on Child Antisocial Behaviour.....	396
11.10: Concluding Comments.....	401
12. APPENDIXES.....	404
Appendix 1: Caspi, A., et al (2004), Maternal Expressed Emotion Predicts Children’s Antisocial Behaviour Problems: Using Monozygotic-Twin Differences to Identify Environmental Effects on Behavioural Development. Developmental Psychology, 40 (2), 149-161.....	404
Appendix 2: Familyid 5602.....	417
Appendix 3: TEDS E-Risk Expressed Emotion Coding Sheet.....	418
Appendix 4: Life History Calendar.....	419
Appendix 5: Correlation Matrix for Parenting Variables.....	420

Appendix 6:	Correlation Matrix for Marital Conflict Variables.....	421
Appendix 7:	Correlation Matrix for Poverty Variables	422
Appendix 8:	Descriptive Statistics for Teacher Reports on Child Antisocial Behaviour and Parenting Risk Factors for Weighted Sample.....	423
Appendix 9:	Descriptive Statistics for Teacher Reports on Child Antisocial Behaviour and Parenting Risk Factors for Sample According to Age of Mother at First Birth.....	424
Appendix 10:	Final ordered logistic model for the teachers report on child antisocial behaviour according to parenting risk factors (weighted sample).	427
Appendix 11:	Descriptive Statistics for Child Antisocial Behaviour (Teacher) according to Family Structure.....	428
Appendix 12:	Descriptive Statistics for Marital Conflict Variables and Child Antisocial Behaviour (Teacher).....	429
Appendix 13:	Coefficients for Marital Conflict Variables, Family Structure and Child Antisocial Behaviour (Teacher).....	431
Appendix 14:	Descriptive Statistics for our Poverty Indicators and Child Antisocial Behaviour (Teacher) – Weighted Sample.....	432
Appendix 15:	Descriptive Statistics for our Poverty Indicators and Child Antisocial Behaviour (Teacher) – Younger and Older Mother Sample.....	433
Appendix 16:	Descriptive Statistics for Child Antisocial Behaviour (Teacher) and Poverty.....	435
Appendix 17:	Descriptive Statistics for Child Antisocial Behaviour (Teacher) according to the Mothers Antisocial Behaviour.....	436
Appendix 18:	Final Model for the Teacher's Report on Child Antisocial Behaviour (Weighted Sample)._.....	438
Appendix 19:	Models to Test for the Mediatory Effect of Parenting Behaviour	

	and Maternal Attitude upon the association between Poverty and Child Antisocial Behaviour (Teacher).....	439
Appendix 20:	Distribution of Child Antisocial Behaviour Scores as Reported by the Teacher.....	441
13.	BIBLIOGRAPHY.....	442

LIST OF TABLES AND FIGURES

List of Tables

		<u>Page</u>
4.1:	E-Risk Sample According to the Mother’s Age at First Birth.....	100
4.2:	Child’s Ethnicity and Main Language Spoken to Child at Home.....	101
4.3:	Gender of Children.....	102
4.4:	Missing Data.....	105
4.5:	Number of Missing Cases according to the Mother’s Age at First Birth.....	108
4.6:	Sample Groups.....	112
5.1:	Descriptive Statistics for the Mother’s Report on Child Antisocial Behaviour.....	122
5.2:	Descriptive Statistics for the Teacher’s Report on Child Antisocial Behaviour.....	124
5.3:	Correlations between Teacher/Mother Report on Child Antisocial Behaviour.....	125
5.4:	Descriptive Statistics for the Mother’s Antisocial Behaviour.....	129
5.5:	Descriptive Statistics for the Biological Father’s Antisocial Behaviour (All Father’s).....	131
5.6:	Descriptive Statistics for the Biological Father’s Antisocial Behaviour (Resident all of the Twin’s Life).....	131
5.7:	Comparison of Summary Statistics for Mother and Father’s Antisocial Behaviour.....	132
5.8:	Descriptive Statistics for Frequency of Smacking.....	134
5.9	Descriptive Statistics for the Number of Maternal Positive Comments.....	138
5.10:	Descriptive Statistics for the Number of Maternal Negative Comments (1).....	139
5.11:	Descriptive Statistics for the Number of Maternal Negative	

Comments (2).....	140
5.12: Descriptive Statistics for Maternal Negativity.....	141
5.13: Descriptive Statistics for Maternal Warmth.....	143
5.14: Descriptive Statistics for One Parent vs. Two Parent Families.....	145
5.15: Descriptive Statistics for Family Structure.....	147
5.16: Descriptive Statistics for Disagreement about Child-Rearing.....	149
5.17: Descriptive Statistics for Parental Quarrelling.....	150
5.18: Descriptive Statistics for Domestic Violence.....	151
5.19: Descriptive Statistics for Combined Marital Conflict.....	152
5.20: Descriptive Statistics for Mother's Unemployment.....	153
5.21: Descriptive Statistics for All Partner's Unemployment.....	153
5.22: Descriptive Statistics for Income.....	154
5.23: Descriptive Statistics for Number of Benefits Claimed.....	155
5.24: Descriptive Statistics for Housing Tenure.....	155
5.25: Descriptive Statistics for Car Ownership.....	156
5.26: Descriptive Statistics for Combined Poverty Measure.....	156
5.27: Sample Descriptives according to the Mother's Age at First Birth.....	161
6.1: Descriptive Statistics for Child Antisocial Behaviour (ASB) according to Frequency of Smacking.....	172
6.2: Descriptive Statistics for Child Antisocial Behaviour according to Frequency of Maternal Positive Comments.....	174
6.3: Descriptive Statistics for Child Antisocial Behaviour according to Frequency of Maternal Negative Comments.....	175
6.4: Descriptive Statistics for Child Antisocial Behaviour according to Maternal Warmth.....	176
6.5: Descriptive Statistics for Child Antisocial Behaviour according to Maternal Negativity.....	177
6.6: Change in Log Likelihood Ratios for Omitted Category of Parenting Variables for Child Antisocial Behaviour.....	179
6.7: Significant Parenting Variables for Child Antisocial Behaviour according to Sample Group.....	181

6.8:	Final Ordered Logistic Model for Child Antisocial Behaviour according to Parenting Behaviour and Maternal Attitude (Weighted ‘all’ mother sample).....	181
6.9 :	Final Ordered Logistic Model for Child Antisocial Behaviour according to Parenting Behaviour and Maternal Attitude (Younger mother sample).....	182
6.10:	Final Ordered Logistic Model for Child Antisocial Behaviour according to Parenting Behaviour and Maternal Attitude (Older mother sample).....	183
6.11:	Predicted Probabilities for Child Antisocial Behaviour and Parenting Risk Factors.....	186
6.12:	Predicted Probabilities for Child Antisocial Behaviour and Frequency of Smacking according to levels of Maternal Warmth (Weighted ‘all’ mother sample).....	191
6.13:	Predicted Probabilities for Child Antisocial Behaviour and Frequency of Smacking according to levels of Maternal Warmth (Younger mother sample).....	193
6.14:	Predicted Probabilities for Child Antisocial Behaviour and Frequency of Smacking according to levels of Maternal Warmth (Older mother sample).....	193
6.15:	Predicted Probabilities for Child Antisocial Behaviour and Frequency of Smacking according to levels of Maternal Negativity (Weighted ‘all’ mother sample).....	195
6.16:	Predicted Probabilities for Child Antisocial Behaviour and Frequency of Smacking according to levels of Maternal Negativity (Younger mother sample).....	196
6.17:	Predicted Probabilities for Child Antisocial Behaviour and Frequency of Smacking according to levels of Maternal Negativity (Older mother sample).....	196
7.1:	Descriptive Statistics for Child Antisocial Behaviour according to Family Structure.....	211

7.2:	Descriptive Statistics for Disagreement about Childrearing and Child Antisocial Behaviour.....	212
7.3:	Descriptive Statistics for Parental Quarrelling and Child Antisocial Behaviour.....	213
7.4:	Descriptive Statistics for Domestic Violence and Child Antisocial Behaviour.....	214
7.5:	Coefficients for Marital Conflict Variables and Child Antisocial Behaviour.....	216
7.6:	Multivariate Model for Family Structure , Marital Conflict and Child Antisocial Behaviour (Weighted ‘all’ mother sample).....	217
7.7:	Multivariate Model for Family Structure , Marital Conflict and Child Antisocial Behaviour (Younger mother sample).....	218
7.8:	Multivariate Model for Family Structure , Marital Conflict and Child Antisocial Behaviour (Older mother sample).....	218
8.1:	Descriptive Statistics for Poverty Indicators and Child Antisocial Behaviour.....	236
8.2:	Descriptive Statistics for Child Antisocial Behaviour and Poverty.....	239
8.3:	Descriptive Statistics for Child Antisocial Behaviour according to the Mother’s Antisocial Behaviour.....	241
8.4:	Descriptive Statistics for Child Antisocial Behaviour according to the Biological Father’s Antisocial Behaviour.....	242
8.5:	Ordered Logistic Model for Parental Antisocial Behaviour and Child Antisocial Behaviour.....	243
8.6:	Ordered Logistic Model for Parental Antisocial Behaviour, Poverty and Child Antisocial Behaviour.....	245
8.7:	Descriptive Statistics for Maternal Antisocial Behaviour, Child Antisocial Behaviour and the Mother’s Age at First Birth.....	247
8.8:	Descriptive Statistics for Multiple Risk Factors, Mother’s Antisocial Behaviour and Mother’s Age at First Birth.....	248
8.9:	Relative Risk Ratios showing the difference in levels of Multiple Risk Factors according to Age at First Birth and Levels of Maternal Antisocial	

Behaviour.....	250
9.1: Change in Log Likelihood Ratios for Omitted Variables for Child Antisocial Behaviour.....	261
9.2: Significant Variables for Child Antisocial Behaviour according to Sample Group.....	262
9.3: Final Ordered Logistic Model for Child Antisocial Behaviour (Weighted ‘All’ Mother Sample).....	263
9.4: Final Ordered Logistic Model for Child Antisocial Behaviour (Younger Mother Sample).....	264
9.5: Final Ordered Logistic Model for Child Antisocial Behaviour (Older Mother Sample).....	265
9.6: Predicted Probabilities for Child Antisocial Behaviour according to Sample Group.....	271
9.7: Predicted Probabilities for Child Antisocial Behaviour and Frequency of Smacking according to levels of Maternal Antisocial Behaviour (All Samples).....	278
9.8: Predicted Probabilities for Child Antisocial Behaviour and Frequency of Smacking according to levels of the Biological Father’s Antisocial Behaviour (All Samples).....	281
9.9: Predicted Probabilities for Child Antisocial Behaviour and Frequency of Smacking according to levels of Disagreement about Childrearing (All Samples).....	283
10.1: Descriptive Statistics for Parenting Behaviour, Maternal Attitude and Disagreement about Childrearing.....	301
10.2: Relative Risk Ratios For Parenting Behaviour, Maternal Attitude and Disagreement about Childrearing.....	304
10.3: Descriptive Statistics for Parenting Behaviour, Maternal Attitude and Parental Quarrelling.....	305
10.4: Relative Risk Ratios for Parenting Behaviour, Maternal Attitude and Parental Quarrelling.....	307
10.5: Descriptive Statistics for Parenting Behaviour, Maternal Attitude and	

	Domestic Violence.....	308
10.6:	Relative Risk Ratios for Parenting Behaviour, Maternal Attitude and Domestic Violence.....	310
10.7:	Descriptive Statistics for Parenting Behaviour, Maternal Attitude and Poverty.....	311
10.8:	Risk Ratios for Poverty, Parenting Behaviour and Maternal Attitude.....	313
10.9:	Descriptive Statistics for Parenting Behaviour, Maternal Attitude and Family Structure.....	315
10.10:	Relative Risk Ratios for Family Structure and Parenting Behaviour and Maternal Attitude.....	318
10.11:	Descriptive Statistics for Parenting Behaviour, Maternal Attitude and the Mother's Antisocial Behaviour.....	320
10.12:	Relative Risk Ratios for the Mother's Antisocial Behaviour and Parenting Behaviour and Maternal Attitude.....	322
10.13:	Descriptive Statistics for Parenting Behaviour, Maternal Attitude and the Biological Father's Antisocial Behaviour.....	324
10.14:	Relative Risk Ratios for the Biological Father's Antisocial behaviour and Parenting Behaviour and Maternal Attitude.....	326
10.15:	Tests for Mediatory Effect of Parenting Behaviour and Maternal Attitude upon the association between Marital Conflict and Child Antisocial Behaviour.....	330
10.16:	Tests for Mediatory Effect of Parenting Behaviour and Maternal Attitude upon the association between Poverty and Child Antisocial Behaviour.....	332
10.17:	Tests for Mediatory Effect of Parenting Behaviour and Maternal Attitude upon the association between Family Structure and Child Antisocial Behaviour.....	333
10.18:	Tests for Mediatory Effect of Parenting Behaviour and Maternal Attitude upon the association between the Mother's Antisocial Behaviour and Child Antisocial Behaviour.....	335
10.19:	Tests for Mediatory Effect of Parenting Behaviour and Maternal Attitude	

	upon the association between the Biological Father’s Antisocial Behaviour and Child Antisocial Behaviour.....	336
11.1:	Significant variables for child antisocial behaviour (mother) according to sample group.....	363
11.2:	Significant variables for child antisocial behaviour (teacher) according to sample group.....	363
11.3:	Does parenting behaviour/attitude mediate the effects of other factors on child antisocial behaviour.....	370

List of Figures

3.1:	Research Questions in Diagrammatical Form.....	92
4.1:	E-Risk Sampling Frame.....	98
4.2:	Distribution of Child Antisocial Behaviour Scores as Reported by the Mother	115
10.1:	Mediation Model.....	329
11.1:	Research Findings in Diagrammatical Form.....	374

ACKNOWLEDGEMENTS

First and foremost, I would like to thank the families and children who participated in the E-Risk Study for their time, hospitality and trust in sharing their personal experiences.

My heartfelt thanks go to my supervisor, Kathleen Kiernan, for her patience, advice, guidance and support. Thank you so much for all that you have taught me, and for the excellent advice you have given me.

I am incredibly grateful to Temi Moffitt and Avshalom Caspi who allowed me to use such a wonderful data-set for my thesis. Thank you both for your time, and friendship over the past five years.

Thanks also to Amani Siyam for her sound and unfailing statistical advice, and to my examiners for their helpful and insightful comments.

I would like to thank the Economic and Social Research Council (ESRC) for funding my PhD over the last three years (ESRC Grant Number R42200124418) as well as the London School of Economics, through the Titmuss Fund, for funding my PhD in the first year. I am very grateful to both.

Finally, I would like to thank my five year old daughter, Olivia, for being so understanding, loving and patient with me over the last four years.

ABBREVIATIONS USED IN THIS THESIS

ASB	Antisocial Behaviour
CAF	Common Assessment Framework
CI	Confidence Interval
DZ	Dyzygotic Twins
EE	Expressed Emotion
E-Risk	Environmental Risk Study
ESRC	Economic and Social Research Council
LGA	Local Government Association
LHC	Life History Calendar
MRC	Medical Research Council
MZ	Monozygotic Twins
NCH	National Children's Home
NSPCC	National Society for the Prevention of Cruelty to Children
ONS	Office of National Statistics
OR	Odds Ratio
RRR	Relative Risk Ratio
TEDS	Twins Early Development Study
YOT	Youth Offending Team

CHAPTER 1

ANTISOCIAL BEHAVIOUR: DEFINITIONS,

THEORY AND POLICY

1.1: BACKGROUND INTRODUCTION

In recent years, antisocial behaviour has become the focus of much legislation and policy (Home Office 2006, 2003) and this has led to the Government introducing a number of measures to reduce antisocial behaviour such as antisocial behaviour orders (ASBOs) or fixed penalty fines which compel individuals to behave in a more pro-social way. Critics, however, have argued that these measures act as sanctions and do not deal with preventing antisocial behaviour occurring in the first place (NCH 2005; LGA 2004), preventative measures for reducing anti-social behaviour would involve, they argue, addressing the 'risk factors' that predict likelihood of involvement in anti-social behaviour (NCH 2005; LGA 2004).

One important risk factor, which has been identified, for later antisocial behaviour is childhood antisocial behaviour. Previous research has shown that child antisocial behaviour is one of the strongest predictors of adult antisocial behaviour and crime (Loeber and Dishion 1983; Scott 1998) and predicts adverse economic, social, educational, psychological and physical health problems in adulthood (Pugh 1998; Rutter et al 1998, Scott 1998). An examination of child antisocial behaviour is important for two reasons. First, an analysis of child antisocial behaviour may lead to an improved understanding of the causes of both child antisocial behaviour itself and of later

antisocial behaviour. Second, an examination of child antisocial behaviour may also identify factors which protect an individual from engaging in antisocial behaviour in the first place. The identification of these factors may well lead to improved interventions for antisocial behaviour as well as provide evidence to support possible preventative policies and strategies.

1.2: WHAT IS ANTISOCIAL BEHAVIOUR?

Antisocial behaviour, in general, is 'heterogeneous with respect to severity and to pattern' (Rutter, Giller, & Hagell 1998:95). There is, therefore, no distinct type of antisocial behaviour and as a result, the term can be difficult to define. The Crime and Disorder Act (Home Office 1998) defines antisocial behaviour as 'acting in a manner that causes or was likely to cause harassment, alarm or distress to one or more persons not of the same household'. This can include speeding, cars parked inconveniently or illegally, dropping rubbish or litter, vandalism and graffiti, teenagers hanging around, drug use, people being drunk or rowdy, abandoned cars, people being insulted, pestered, intimidated or assaulted, noisy neighbours, racial attacks, disputes between neighbours, and people sleeping rough. The term antisocial behaviour, therefore, according to the Crime and Disorder Act (1998), covers a wide range of problems ranging from the misuse of public space, to environmental damage, to disregard for the community to acts directed at individuals. Furthermore, it is evident that the Crime and Disorder Act definition of antisocial behaviour includes misbehaviours which range from relatively

minor (i.e. in that they would not merit intervention by the authorities) to those that are so serious as to merit criminal prosecution.

The Government's definition of what constitutes antisocial behaviour, therefore, could be said to be problematic in that it covers such a wide range of behaviours. Furthermore, it has been argued that the Home Office has tended to avoid an examination of the conceptual definition of antisocial behaviour and simply implies that it is obvious what antisocial behaviour or 'yob behaviour' is (Millie et al 2005). This is unhelpful, and conceptual clarity on what constitutes antisocial behaviour is needed for the following reasons (Millie et al 2005). First, and most problematically, the Home Office's definition of antisocial behaviour could apply to just about any form of behaviour. Second, measures such as antisocial behaviour orders (ASBO's), which have been introduced to deal with antisocial behaviour, can seriously interfere with the freedom of those of whom they are imposed and can allow people to be imprisoned for non-criminal offences² (Millie et al 2005). This is a serious problem considering the subjective nature of the Government's notion of antisocial behaviour. Third, it has been argued that tackling antisocial behaviour effectively means tackling multiple problems and as a result requires multi-agency working (Millie et al 2005). The agencies involved, therefore, need clarity on what they are dealing with. The Crime and Disorder Act definition is so broad and includes many acts which do not require intervention by any agency.

² ASBO's themselves are not penalties for criminal offences, but breaching an ASBO is a criminal offence.

Millie et al (2005) have attempted to overcome this conceptual difficulty and have developed a working definition of antisocial behaviour. They define antisocial behaviour as:

- that which causes harassment, alarm or distress
- to individuals not of the same household
- which requires interventions from the relevant authorities **but**
- criminal prosecution and punishment may be inappropriate
- Because the individual components of the behaviour:
 - 1) are not prohibited by the criminal law **or**
 - 2) In isolation, constitute relatively minor offences.

This definition of antisocial behaviour recognises that antisocial behaviour causes harassment, alarm or distress as a result of the cumulative impact of repeated incidents which in isolation may not be of a serious nature. Furthermore, it explicitly states that antisocial behaviour is that which requires interventions from a relevant authority. However, this definition does not take into account the subjective nature of antisocial behaviour and it has been argued that what constitutes antisocial behaviour can be determined by a series of factors including context, location, community tolerance and quality of life experiences (Nixon et al 2003). As a result, what may be considered antisocial behaviour to one person may be seen as acceptable behaviour to another. The subjective nature of the concept, therefore, makes it more difficult to identify a single definition of antisocial behaviour. Furthermore, there is a difficulty in measuring antisocial behaviour as it is subjective and context-specific which means that counting

incidents is problematic (unlike crime which has a clear legal definition). In addition, the way in which particular types of behaviour affect people, for example vandalism, means a single incident may have some effect on many people. A count of a single incident may be inappropriate for understanding the impact of antisocial behaviour in this case.

There is also considerable variation between geographical areas and between social groups in the levels and types of antisocial behaviour perceived. Those living in hard-pressed areas had odds of perceiving levels of antisocial behaviour that were four times higher than those in wealthy areas (Wood 2004). Levels of antisocial behaviour tend to be higher in inner cities and low income areas and it is been argued that this is the result of these neighbourhoods being the worst affected by the decline in the industrial and manufacturing base in the 1970's/1980's and worst affected by housing policies which tended to concentrate large numbers of socially excluded families in the same areas (Thorpe and Wood 2004).

The Government's definition of antisocial behaviour, therefore, is problematic in that it doesn't take into account the subjective nature of antisocial behaviour. Researchers, however, have attempted to develop a valid classificatory system for antisocial behaviour. The available evidence points to the importance of the following factors in differentiating between types of antisocial behaviour. First, whether or not the antisocial behaviour is associated with hyperactivity and attention deficits. Antisocial behaviour which is associated with hyperactivity and/or inattention can be differentiated from other

types of antisocial behaviour in that it has an onset in early or middle childhood, there is a strong association with poor peer relationships, a high likelihood of persistence into adult life, and an association with cognitive impairment (Rutter, Giller & Hagell 1998:96). Second, antisocial behaviour may be differentiated according to age of onset. Moffitt (1993) proposes a taxonomy which identifies two primary types of antisocial behaviour. The first group is the adolescence-limited who, it is suggested, limit their antisocial behaviour to the adolescent development period occurring alongside puberty. Moffitt argues that adolescence-limited antisocial behaviour is typically social and takes on a group-oriented nature that is characterized by involvement in relatively minor and status oriented acts. Importantly she suggests that because their antisocial behaviour is part of adolescence, and is therefore normal, this group is able to desist from antisocial behaviour when they reach adulthood. In contrast, the life course persistent group begins their antisocial behaviour early in life, and commits a range of antisocial behaviour including acts of violence. Much of the antisocial behaviour committed by the life-course persistent group tends to be committed without the assistance of others. According to this taxonomy, the child's risk for life-course persistent antisocial behaviour emerges from inherited or acquired neuro-psychological variation such as cognitive deficits, difficult temperament or hyperactivity. The environment the child is reared in is also important and factors such as inadequate parenting, and poverty tend to exacerbate the difficulties. Third, theorists have attempted to determine how far violent antisocial behaviour differs from non-violent behaviour. However, this line of enquiry is problematic in that the greater the number of antisocial acts a person commits, the greater the likelihood that at least one will involve violence. As a consequence, those individuals

who are persistent delinquents are more likely to have committed a violent offence (Rutter, Giller & Hagell 1998). Fourth, antisocial behaviour can be differentiated along the lines of association with psychiatric disorders such as psychopathy, conduct disorder, or serious psychiatric disorders such as psychosis (Rutter, Giller & Hagell 1998).

Other studies have distinguished between unsocialised aggression and socialised delinquency (Henn, Bardwell & Jenkins 1980; Hewitt and Jenkins 1946). Unsocialised aggression generally involves unpopularity, teasing, quarrelsome behaviour, aggression and is more likely to be recidivist. Socialised delinquency, however, refers to a form of delinquency with stealing, truancy, staying out late at night, running away from home and gang activities but with adequate peer relationships. Socialised delinquency has much in common with adolescence-limited antisocial behaviour, and Achenbach's delinquency measures (see Chapter 5), whilst unsocialised aggression can be seen as related to life-course persistent behaviour and Achenbach's aggression measures (see Chapter 5).

Other researchers, however, have focused on 'antisocial propensity' (Gottfredson & Hirschi 1990). Antisocial propensity is often inferred from antisocial behaviour itself, but it has been argued that it must be defined independently of the behaviour that it explains (Farrington 1991; 1995). For Gottfredson & Hirschi (1990) antisocial propensity can be characterised by self control and is the difference in the extent to which people are vulnerable to temptation. Individuals who are low in self control tend to be impulsive, insensitive, physical, risk taking, short-sighted, and non-verbal and are

more likely to engage in problem behaviour early in their lives. Lahey & Waldman (2003), however, suggest that the key elements of antisocial propensity are a person's temperament and cognitive ability which interact with social and situational influences to increase the likelihood that antisocial behaviour may occur. They identify three dimensions of temperament which may contribute to antisocial propensity: prosociality, daring and negative emotionality (Lahey & Waldman 2003). Prosociality is defined as concern for the feelings of others. Several studies have shown that sympathy and concern for others is inversely correlated with antisocial behaviour (Cohen & Strayer 1996; Graziano 1994). The second hypothesized dimension 'daring' is defined by adventurousness, and the likelihood of taking part in risky activities (Lahey & Waldman 2003). Research has shown that children rated 'daring' were much more likely to be antisocial than those who were not rated as such (Farrington & West 1993). Lastly, the dimension labelled negative emotionality is characterised by children who experience negative emotions more frequently, more intensely and out of proportion to the circumstances. These children are, therefore, hypothesized to be more likely to react to situations negatively. Cognitive abilities, particularly verbal abilities, are also implicated in antisocial propensity, and it has been hypothesized that lower cognitive ability and slow language development increase the risk of antisocial behaviour (Lahey & Waldman 2003).

1.3: CHILDHOOD ANTISOCIAL BEHAVIOUR

Antisocial behaviour problems in childhood is said to comprise of two general domains of behaviour - aggression and delinquency (Achenbach 1991), and affects between 4 per cent to 20 per cent of the population depending on age (Costello 1989, Meltzer et al 2000). On average, boys show higher levels of externalising behaviours than girls (Zahn-Waxler 1993). Childhood antisocial behaviour can be measured reliably as early as age 3 (Campbell et al 1996), and thereafter not only shows continuity over time (Caspi et al 1996a) but can lead to life-course persistent antisocial behaviour (Moffitt 1993). Eron et al (1991) have argued that without early family treatment conduct problems in children 'crystallise' by the age of 8, making future learning and behavioural problems less responsive to treatment and more likely to become chronic. Furthermore, there is strong evidence that the younger the child is when conduct disorders begin, the more likely it is that these problems will continue on into adulthood. Loeber et al (2000) found that young children who have conduct disorders are three times more likely to have serious and chronic violent careers as opposed to those who begin antisocial behaviour later.

Childhood disruptive behaviour is defined by the American Psychiatric Association (1994) as a recurrent pattern of negative, defiant, disobedient, and hostile behaviour toward authority figures lasting at least 6 months. Children and young people with conduct problems show a variety of behaviours that are disliked by both adults and other children. In early and middle childhood, these problems could include frequent tantrums, arguing with adults, persistent defiance, and frequent vindictive behaviour. Later on

these behaviours may consist of stealing, destructiveness, bullying, fighting, cruelty, setting fires, truancy, running away from home, and alcohol abuse (Loeber & Farrington 2001; Loeber and Hay 1994). It is important to bear in mind, however, that many children will show one or two of these problems at some time or another without this implying any behavioural difficulty. However, when the range or persistence of this type of behaviour increases, the implications for children are more serious.

Children who exhibit early antisocial behaviour are more likely to fail at both social relations and academic endeavours. Patterson et al (Patterson, Capaldi, & Bank 1991) suggest that, at young ages, antisocial children lack social skills and that this deficiency, in turn, leads to peer rejection. Rejection of young people by their peers has important consequences for children and poor peer relationships are associated with a variety of negative outcomes such as increased risk of depression and self image, substance abuse, delinquent behaviour and early pregnancy (Asher, Erdley and Gabriel 1994). The academic arena is especially problematic for antisocial children, and it has long been debated whether antisocial behaviour in children may lead to academic failure or vice versa. Moreover, previous research has shown that there is considerable overlap between the risks for antisocial behaviour and the risks for educational failure (Maughan et al 1996).

Antisocial children are not only more likely to fail academically and have poor peer relations they are also more likely to become later offenders. Loeber and Farrington (2001) have argued that children who show persistent disruptive behaviour before the age

of seven are more likely to become child delinquents (aged 7-12) who in turn have a two to three fold increased risk of later serious, violent and chronic offending. Longitudinal studies have shown that one quarter to one half of disruptive children are at risk of becoming child delinquents (Farrington 1991; Loeber and Dishion 1983) and about one third to two thirds of child delinquents become serious, violent and chronic offenders (Blumstein, Farrington and Moitra 1985; Lipsey and Derzon 1998). Furthermore, in the Dunedin Multidisciplinary Health and Development Study (Silva 1990) externalising behaviours measured at age 3 were significantly associated with antisocial disorders at age 11 and 15 whilst the Cambridge Study in Delinquent Development (Farrington 1978) found that boys who were aggressive at age 8-10 had an increased risk of non-violent crime as well as violent crime, but associations were stronger with the latter. Lastly, Olweus (1979) showed that on average the correlation between early aggression in childhood or adolescence and later aggression was .63 which is as high as the stability of intelligence over time. On the whole, therefore, research indicates that adult antisocial behaviour is usually preceded by juvenile delinquency and by other types of childhood disruptive behaviour.

1.4: THEORIES OF ANTISOCIAL BEHAVIOUR

Researchers have put forward many theories to explain the origins of antisocial behaviour ranging from genetic explanations to moral explanations to social explanations. The next section will briefly examine the main theories of the origins of antisocial behaviour.

1.4.1: The Moral Underclass Discourse

The moral underclass discourse is normally associated with explanations of social exclusion and emphasises the moral and cultural causes of social exclusion. However, this discourse can also be used to examine antisocial behaviour and much of the rhetoric around the underclass is concerned with its antisocial nature (Murray 1990). Dahrendorf (1985), for example, states that the underclass 'is the group which combines desolate living conditions and the lack of traditional bonds....with low skills and hopeless employment prospects. The result is cynicism towards the official values of a society bent on work and order' (The Times July 1985). The underclass, therefore, are not simply the poorest members of society but are those individuals whose lifestyles involve a particular 'type of poverty' (Murray 1990). This type of poverty involves an unwillingness to take jobs, an increase in antisocial behaviour and crime and having illegitimate children (Murray 1990). It is, therefore, the values and behaviour of the underclass which are seen as the root cause of their poverty and antisocial behaviour and not vice versa (Murray 1990).

The use of the term underclass became popular in the 1980's and is primarily associated with use in the United States. However, Charles Murray (1990; 1999) has suggested that an underclass is growing in the United Kingdom and will continue to do so through the intergenerational transmission of the values and morals of the underclass. The underclass, according to Murray, reject both the work and family ethic which is the ethos of the mainstream society and Murray lays the blame for this rejection firmly at the feet

of the welfare system. Murray argues that the welfare system encourages the decline of the family by giving welfare benefits to single mothers and as a result undermines both marriage and work. This, he argues, has encouraged a "counter-culture" which devalues work and marriage, and as a result encourages antisocial behaviour, and dependency on benefits. A vicious circle of high unemployment, crime, antisocial behaviour, illegitimacy and dependency sets in. These factors, Murray argues, interact to produce communities in which the socialisation of children is poor and results in the values of the underclass being transmitted from parent to child.

The moral underclass discourse, therefore, focuses on values and attitudes and as a result could be useful, for two reasons, in understanding the origins of antisocial behaviour. First, it could be argued that individuals who engage in antisocial behaviour have differing values and norms than those who do not and this is the stance taken in the Government's Respect Action Plan (Home Office 2006). Tony Blair states in the forward to the Action Plan that there are 'problems with the behaviour of some individuals and families' and that 'what lies at the heart of this [problem] behaviour is a lack of respect for values that almost everyone in this country shares'. He continues by saying that 'some individuals are not learning these values or choose to disregard them. Where that happens, their sense of what behaviour is acceptable or unacceptable disappears' (2006). Second, it may also be the case that antisocial behaviour is transmitted from parent to child, not as a result of a genetic liability, but because antisocial values and attitudes are transmitted from one generation to another. Again, this is a stance taken by the present Labour Government in the Respect Action Plan

which states that we must 'ensure that we all pass on decent values and standards of behaviour to our children' (2006). However, the moral underclass discourse is problematic and has become unpopular with many researchers because of its association with Murray's rhetoric of pathological communities and individual moral inferiority. First, it has been argued that Murray's 'blame the victim' rhetoric diverts attention from the wider social, economic and political causes of both social exclusion and antisocial behaviour (Walker 1990). Second, it has been argued that many members of the 'underclass' have conventional attitudes and values, and that it is not their values which are preventing them from achieving their aims, but a lack of opportunity (Walker 1990). Third, Murray's association between single-parenthood and the underclass has also been challenged. First, researchers have argued that marriage is declining across all levels of society and is not only a feature of the 'underclass' (Brown 1990). Second, it has been argued that long-term single mothers are often divorced as opposed to never married young mothers (Brown 1990) and as a result may not have rejected the values of marriage. However, whilst these criticisms of Murray are valid, it may still be the case that some individuals, as a result of structural inequality and vulnerability, are socially excluded to such an extent, that the values and attitudes which they hold make it more likely that they will engage in antisocial behavior.

1.4.2: Social Control Theory

Social control theory is concerned with why people conform to society's norms and values and is important in understanding antisocial behaviour (Hirschi 1969). Conformity to society's norms and rules arises, this theory suggests, from four types of social control. First, strong social attachments encourage conformity whilst weak social attachments within the family, peer group school, or society may encourage antisocial behaviour. Second, individuals who can see legitimate opportunity for success are more likely to see the advantages of conformity. In contrast someone with little opportunity for future success may be more likely to engage in antisocial behaviour. Third, the opportunity to take part in legitimate activities, such as having a job, going to school or pursuing hobbies, can reduce antisocial behaviour. People with few such activities will be more likely to engage in antisocial behaviour. Fourth, individuals who have strong beliefs in conventional morality and respect for authority figures are more likely to refrain from antisocial behaviour. Hirschi (1969) argues, therefore, that antisocial behaviour results when an individual's bond to society is weak or broken. The more likely an individual can take part in mainstream society, for example in any of the four ways above, the less likely they are to behave antisocially. As a result not having a stake in society, being socially excluded or a weak parent-child attachment could increase the likelihood of antisocial behaviour.

1.4.3: Coercion Theory

Social Learning Theory (Bandura 1969; 1977; Bandura and Walters 1959) posits that antisocial behaviour is modelled from others and is, therefore, learned behaviour. Previous research, for example, has indicated that individuals are more likely to engage in antisocial actions when this behaviour is modelled, and reinforced by others in their social group (Aker 1998). Patterson's (1982) model of coercion applies the principles from Social Learning Theory and suggests that behavioural problems in young children are the result of negative coercive behaviour and interactions within the parent/child relationship. The use of negative and coercive parenting, Patterson suggests, is important as these forms of interaction tend to escalate into 'coercive cycles' of interaction which then forms the basis of the parent/child relationship. It is the use of coercive cycles of interactions, therefore, which are implicated in the origins of child behavioural problems. In a coercive cycle, therefore, the parent will respond to the child's behaviour in a negative way, for example, the use of a threat. This behaviour from the parent may then have two outcomes. First, the child may continue with the behaviour, which results in the parent using more coercive behaviour, for example, shouting, to stop the behaviour. If the child complies, the parent's coercive behaviour is reinforced, and the parent is more likely to use this behaviour again. Second, the parent's use of threats and shouting may lead to the child 'upping the anti' by increasing their own coercive behaviour. This increase in the child's coercive behaviour eventually results in the parent not following through with the threat in an attempt to end the child's increased negative behaviour. The child has, therefore, coerced the parent into giving in, and the

parent by giving in has positively reinforced the child's behaviour. Patterson suggests that normal 'coercive' behaviour can continue after infancy because it proves to be effective and the child eventually learns that if their behaviour is bad enough they will get their own way. Aversive exchanges in coercive families, it has been suggested, may occur many times during a day and in at least half of these coercive interactions the parent backs down (Patterson et al 1992). As a result of these coercive interactions, the child fails to learn prosocial behaviour and instead learns to use anger and defiance as a way of solving problems and getting their own way³. Patterson's coercion theory, therefore, directly implicates negative interactions within the family unit as being crucial in the onset of child antisocial behaviour. Furthermore, this model also suggests that particular individuals, for example, those with high antisocial behaviour, may be more likely to use coercive forms of interaction within the family (Patterson et al 1992). As a result, the intergenerational transmission of antisocial behaviour may occur because antisocial individuals are more likely to use coercive ineffectual parenting with their children (Patterson et al 1992). Coercion Theory, therefore, identifies ineffectual and negative parenting as crucial to the development of behavioural problems in children and in the transmission of antisocial behaviour from parent to child.

1.4.4: Social Development Model

The Social Development Model (Catalano & Hawkins 1996; Farrington & Hawkins 1991) integrates ideas from Social Control Theory, Social Learning Theory and

³ The child will then use these strategies in their interactions with friends which results in them being rejected by their non-aggressive peers and more likely to interact with other coercive children which may

Differential Association Theory⁴ (Bandura 1971; Cressey 1953; Sutherland 1947). The Social Development Model hypothesizes that all behaviour is learnt. Children, it is argued, are socialised through four processes: first, perceived opportunities for involvement in activities and interaction with others; second, the degree of involvement and interaction; third, the skill to participate in these involvements and interactions, and fourth, the reinforcement they perceive from these involvements and interactions. When opportunities, involvement and skills are equal and they are positively rewarded, a social bond develops between these individuals and the socialising unit or group. The social bond consists of attachment and commitment to the group. It is hypothesized that an individual's behaviour will be prosocial or antisocial depending on the predominant behaviours, norms and values held by those to whom the individual is bonded. The Social Development Model emphasizes a developmental perspective by placing social development within specific stages and individuals learn patterns of behaviour, whether prosocial or antisocial, in different socialising units or groups that change as the individual develops. In early years they learn this behaviour from family, in middle years from peers and the community and in later years from partners, work, and the community. The Social Development Model, therefore, hypothesizes, for example, that children who develop strong bonds to their school will conform to the norms and values that their school promotes, thereby reducing the probability of antisocial behaviour.

then lead to the formation of deviant peer groups (Patterson et al 1992).

1.4.5: Interactional Perspective

Interactional theory (Thornberry 1987) argues that what differentiates early onset antisocial behaviour from later onset antisocial behaviour is the level of structural, psychological and social difficulties experienced by individuals and their families. There is, therefore, a strong emphasis on the broader social context and interactional theory concerns itself with structural adversity⁵. Structural adversity, it is argued, increases parental stress, reduces social capital, and increases negative temperamental qualities in children, all of which increase poor family management skills and ineffective parenting. Very early onset antisocial behaviour, therefore, is brought about by the combination and interaction of structural, individual and parental influences. Extreme social adversity as a result contributes to both parenting deficits and negative temperamental qualities in the child.

1.4.6: Ecological Theory

Ecological theory (Bronfenbrenner 1979) focuses on the social contexts and environments in which children live and the people who influence their development. Bronfenbrenner defines four complex “layers” of environment, each having an effect on a child’s development. They are:

- the microsystem - such as a family, school or neighbourhood

⁴ This theory hypothesizes that antisocial behaviour is learned in interaction with other people in a process of communication within intimate personal groups (i.e. peer groups).

⁵ Defined as the position in the social structure that leads to accumulated disadvantage.

- the mesosystem - which is two microsystems interacting, such as the connection between a child's home and school,
- the exosystem - which is an environment in which an individual is not involved, which is external to his or her experience, but nonetheless affects him or her anyway. An example of an exosystem is the child's parent's workplace.
- the macrosystem - or the larger cultural or subcultural context including belief systems, resources, hazards, lifestyles, opportunity structures, and life course options.

The main points of Ecological Theory are as follows: First, Ecological Theory puts the child at the centre of the development process and acknowledges that a child will affect as well as be affected by the settings in which they spend time. Second, the model identifies the family as being the most important setting for a young child and suggests that a young child's development will be influenced by the experiences they have within the family unit. Third, the model recognises that children's development will also be affected by the wider context in which they live, and fourth, the model suggests that different settings or layers may affect each other; for example, the parent's lifestyle outside the home may impact on experiences that the child has inside the home.

Ecological Theory, therefore, may be useful in providing a framework for understanding the origins of antisocial behaviour in children as it highlights the importance of family members and caregivers on a child's development, but also emphasises the importance of schools, neighbourhoods, communities, cultures, lifestyles, values and beliefs on

development. Children, therefore, according to Ecological Theory, do not develop in a vacuum but are influenced by their environment both in and outside of the home and by the values/attitudes of those around them. As a result, children may develop antisocial behaviour as a consequence of parenting difficulties, marital conflict, poverty, parental values, and/ or the cultural context within which they live. Furthermore, the model is important as it suggests that different factors or settings may influence each other and provide particular experiences for children. As a result, poverty or parental attitudes, for example, could impact on parenting practices and affect child behaviour.

1.4.7: Family Stress Model⁶

The Family Stress Model (Conger et al 2000; Conger & Elder 1994; Elder & Caspi 1988; McLoyd 1989) is useful in understanding how factors such as poverty may effect children's development. The Family Stress Model suggests that risk factors such as poverty⁷ may affect child development, for example, the development of antisocial behaviour, because poverty affects a parent's well-being and leads to increases in parental stress. This increase in levels of parental stress, it is suggested, then results in strain being put on spousal relationships which, in turn, lead to increases in marital conflict and negative parental interactions (Conger et al 2000). Furthermore, it is hypothesised, that increased parental stress makes it more likely that parents will become depressed (Conger et al 2000). This deterioration in the quality of the parents relationship and their mental health, due to long-term poverty, according to the Family

⁶ See Chapter 2 for more discussion of the Family Stress Model.

Stress Model, results in the parent being less able to parent effectively and more likely to use hostile harsh discipline with their children (Smith & Brooks-Gunn 1997; McLoyd et al 1994; Sampson & Laub 1994). The Family Stress Model is important, therefore, as it recognises that poverty may affect child outcomes as a result of poverty increasing stress levels within the family unit which then impacts on the parenting that a child receives. The effect of poverty, therefore, on child outcomes may be indirect through the effect of poverty on parenting practices.

An alternative explanation⁸, however, for how poverty may affect child development focuses on how income enables parents to purchase services and lifestyles which increase the human capital of their children (Becker 1981; Becker & Thomas 1986). According to this theory, therefore, poverty affects child development, not because of its effect on parental well-being, level of parental stress or parenting, but because parents who are poor are unable to provide quality home environments, and quality learning environments for their children. Poverty, therefore, is postulated to have a direct effect on children's outcomes, and research has shown, for example, that children from poor environments are more likely to live in worse conditions, have less stimulating toys, and be less likely to take part in outside school activities (Mayer 1997). However, although this may be the case, it may also be the case that an inability to buy material goods and living in low-quality housing or high-crime areas, for example, increases parental stress, and the parent's ability to parent effectively.

⁷ Poverty, according to the Family Stress Model (Conger et al 2000), consists of low income, economic pressure and the difficulties created by lack of money, for example, debt.

⁸ A number of terms for this perspective exist including 'human capital, financial resources, investment model or resource model (Becker & Thomas 1986; Haveman & Wolfe 1994; Mayer 1997).

1.4.8: Genetic Explanations

Research has shown that antisocial behaviour tends to run in families (Farrington et al 1996) and behavioural genetics research has indicated that approximately 50 per cent of the inter-generational continuity of antisocial behaviour may be the result of genetic factors (Miles & Carey 1997; Carey 1994). This has led to researchers suggesting that environmental influences do not seem to account for the similarity among siblings growing up in the same family (Rowe 1994), and that problem behaviour may co-exist in a family because of genes (Scarr 1992). As a result, the intergenerational transmission of antisocial behaviour may be a result of parents passing on particular genes from one generation to another. Furthermore, it has also been suggested that parents' heritable traits may also influence the environments that they provide for their children (Plomin 1994). For example, heritable traits such as aggression or impulsivity may make it more likely that a parent repeatedly loses their job and as a result the family's income is reduced. As a result, there may be genetic influences directly on children through the transmission of particular genes as well as genetic influences on the environment that the child inhabits as a result of their parents genetic make-up.

However, Plomin (1994) has argued that genetics alone cannot explain behaviour and instead he focuses on the way genes interact with the environment. Gene-environment interactions refer to 'genetic differences in sensitivity to experiences' (Plomin and Rutter 1998). As a result, a risk factor, such as poverty, may have a greater effect on an individual who is at genetic risk. Plomin using the example of the gene DRD4 and

Attention Deficit Hyperactive Disorder (ADHD) suggests that environmental risks such as a chaotic home or unruly peers may be more likely to lead to ADHD in children who have long-repeat DRD4 allele. These children, therefore, may be at greater risk of ADHD as a result of the co-existence of a genetic vulnerability (i.e. having the long repeat allele) and an environment risk factor such as a chaotic home. Furthermore, Caspi et al (2002) in their study of the link between MAOA⁹ and antisocial behaviour found that children with low levels of MAOA activity were more likely to exhibit antisocial behaviour. However, these children were only more likely to exhibit high antisocial behaviour if they had been maltreated and abused as children. Those children with low MAOA who had not been abused were less likely to be antisocial as were the control groups with high MAOA. Caspi suggests, therefore, that there is an interaction between the presence of low MAOA (i.e. genetic risk) and an environmental risk factor such as child maltreatment which increases the likelihood of antisocial behaviour.

There are a number of issues, however, which relate to genetic findings on antisocial behaviour. First, critics have argued that estimates from twin studies overestimate the genetic contribution to a trait because identical twins have far more similar environments than non-identical twins. For example, studies have shown that identical twins are treated more similarly than non-identical twins by their parents (Dunn & Plomin 1986) and as a result it may be environment effects as opposed to genetic effects which explain the similarity in behaviour (Rutter, Giller & Hagell 1998). Second, many quantitative genetic studies which have examined the effects of environmental factors have done so without saying which environmental influence have been measured. For example, many

⁹ Monoamine Oxidase A (MAOA) is an enzyme whose activity is controlled by genes.

quantitative genetic studies state that the variation in antisocial behaviour can be separated into genetic (G) and environmental (E) components that together along with error add up to explain 100% of the variance. Geneticists then subtract heritability from 100% to give an estimate of the contribution of the environment. As a result, the environment is not directly measured or studied. This is extremely problematic and critics have argued that it is not valid to estimate environmental effects without measuring them (Stoolmiller 1999). Third, traditional behavioural genetic models have placed interactions between genes and environment within the genetic variance component and as a result the effects of the environment may actually be stronger than first thought (Rutter 2002). However, although the critiques of behavioural genetics research are valid, the research findings from genetic studies indicate that there may be a significant genetic component to antisocial behaviour.

1.4.9: Summary

It is evident from the above section that there are many different theories to explain the origins of antisocial behaviour. These range from Patterson's Coercion Theory (1982), which identifies negative and ineffective parenting as a key factor in the onset of antisocial behaviour to theories which emphasize the importance of genetics, individual values and attitudes, a lack of opportunity and social adversity. All of these theories, however, have one point in common in that they identify the family as crucial in the origins of antisocial behaviour. For example, it has been hypothesized that social adversity may not only have a direct effect on antisocial behaviour but may also have an

indirect effect by impacting on the parenting that a child receives (Thornberry 1987). Furthermore, the ‘underclass’ discourse emphasises the importance of the socialisation of children, whilst geneticists have begun to focus on the interaction between genetics and environmental factors such as parenting. The family and parenting are, therefore, crucial to many theories on the origins of antisocial behaviour.

1.5: GOVERNMENT POLICY ON ANTISOCIAL BEHAVIOUR

The Labour Government has stated that ‘tackling antisocial behaviour is a major priority..... We know that too many communities are still blighted by the mindless behaviour of a few jobs, which can ruin the quality of life for everyone’ (Charles Clarke, Home-Office Website 1st March 2005). Tackling antisocial behaviour, therefore, is high on the Labour Government’s agenda and this can be seen by the central place it was given in the 2004-2008 Home Office Strategic Plan (Home Office 2004), the introduction of the Home Office’s TOGETHER¹⁰ campaign, the On Track programme¹¹, plus a wide range of new powers for responding to antisocial behaviour through a series of Acts of Parliament.

¹⁰ The TOGETHER Campaign was launched in 2003 by the Prime Minister, the Home Secretary and Hazel Blears MP, and is ‘a campaign across England and Wales that takes a stand against antisocial behaviour and puts the needs of the local community first’ (www.together.gov.uk). The Home Secretary David Blunkett says that ‘the impetus behind the TOGETHER campaign has not come from Whitehall, but from the public. More and more, people around the country are saying “we don’t have to tolerate this”, and are no longer putting up with yobbish behaviour, graffiti or vandalism. They are taking back control from the loutish minority, and putting it back where it belongs – in the hands of the law abiding majority’. (Rt. Hon. David Blunkett MP Home Secretary).

¹¹ On Track is a research-based preventative crime reduction programme aimed at developing multi-agency partnerships and delivering a range of services to children aged between 4-12 years. It was established within the Home Office Crime Reduction Programme.

Government policy on antisocial behaviour could be said to be influenced by three factors. First, there are undercurrents of the moral underclass discourse (see Section 1.4.1 above) in government policy documents and antisocial individuals are seen as 'yobs', 'louts', 'dysfunctional' and 'neighbourhood terrorists'. As a result antisocial individuals are seen as morally deficit and in contrast to the moral majority. This can be seen in the discussion of the strategy of 'naming and shaming' as part of the conditions of an ASBO. Home Secretary Charles Clarke argues 'yobs will see their names in the papers.....their offences will be publicised and their picture will stare out at them from posters in shop windows' (Daily Mirror, 2 March 2005). Furthermore, it can be seen in Tony Blair's comments in the Foreword to the Respect Action Plan 'we will take action so that the majority of law-abiding decent people no longer have to tolerate the behaviour of the few individuals and families that think they do not have to show respect to others' (2006:1).

Second, there is a strong emphasis in government policy on antisocial behaviour on sanctions and enforcement as opposed to an understanding of the risk factors, effective prevention and rehabilitation. This is evident in the Crime and Disorder Act 1998 which introduced the concepts of Antisocial Behaviour Order's (ASBO's¹²), parenting orders¹³, child curfews¹⁴, and child safety orders¹⁵ to tackle antisocial behaviour. ASBO's, for example, are designed as a sanction to stop an individual from carrying out specific acts

¹² ASBO's are civil orders issued by magistrates which prohibit offenders (over the age of 10 years old) from carrying out specific acts or entering specific areas. The breach of an ASBO is a criminal offence.

¹³ Parenting orders aim to help reinforce and support parental responsibility. A parenting order is made by a criminal court, family court or a magistrate's court acting under civil jurisdiction.

¹⁴ These apply to unsupervised children under the age of ten, prohibiting them from specified public places between 9pm and 6pm.

which are seen as antisocial. ASBO's do not address the root cause of the antisocial behaviour but are concerned with stopping the antisocial behaviour. This idea of enforcement continues in the White Paper 'Respect and Responsibility (Home Office 2003) which states that 'we must be tougher about forcing people not to behave anti-socially. When people break the rules, there must be consequences for them.....where families and parents are failing to meet their responsibilities to their communities; we will work with them until they do'. This includes using Parenting Orders¹⁶ to 're-enforce the responsibilities of parents' to address young peoples offending and antisocial behaviour.

Third, it has been argued that New Labour policy on antisocial behaviour is influenced by the public's perception and fear of antisocial behaviour¹⁷ (Squires 2006) and what is known as the 'justice gap'¹⁸ (Home Office 2002). Critics have, therefore, argued that being seen to do 'justice for victims has become a higher priority (for the Government) than doing justice to offenders' (Squires 2006:151). Furthermore, it has been suggested that the Government's current emphasis on antisocial behaviour may become problematic in that 'by making antisocial behaviour into a major social policy problem, and giving it sustained high visibility attention, Labour has made a small problem larger,

¹⁵ These orders are used to protect children under ten who are at risk of becoming involved in crime. The Order puts the child under the supervision of a social worker or the Youth Offending Team (YOT).

¹⁶ Under section 8 of the Crime and Disorder Act courts have the powers to impose a parenting order which consist of two elements – a core one and a discretionary one. The core element imposes a requirement on the parent to attend counselling or guidance sessions. The discretionary element consists of requirements on the parent to exercise control over their child's behaviour. Youth Offending Teams (YOT's) have either established or commissioned parenting programmes to support court orders or have worked with parents on a voluntary basis.

¹⁷ Antisocial behaviour, it is argued, has become the number one concern of the British people (Wintour 2004)

¹⁸ The 'justice gap' refers to the public perception of a lack of official response to antisocial behaviour combined with the perception that victims of antisocial behaviour have very little redress (Squires 2006).

thereby making people more aware of it and less satisfied with their lives and their government' (Tonry 2004:57).

There are certain problems associated with the Government's over-emphasis on sanctions for antisocial behaviour. First, ASBOs, for example, have been used against vulnerable people such as children, drug users, prostitutes and the mentally ill. Research has shown, for example, that 58 per cent of ASBO's were made on persons aged under 18 years old, and a further 16 per cent on those aged 18 to 21 years old (Campbell 2002). Furthermore, there are a number of well-documented stories in the press about inappropriate use of ASBOs: including alcoholics told not to drink (ASBO Concern 2005), a suicidal woman whose ASBO required her to keep away from bridges, railway lines or rivers (ASBO Concern 2005); and a child with Tourette's being told not to swear (Guardian August 10th 2005). This is problematic in that if an individual is acting in an antisocial manner due to factors such as drug misuse, mental illness, learning difficulties or alcohol misuse, it is highly unlikely that ordering them to stop doing something will be successful. As a result sanctions may have little effect on reducing antisocial behaviour for the more vulnerable. Second, an emphasis on enforcement means that there is little room for an understanding of the possible causes of antisocial behaviour and instead blame is targeted at the individual or family unit.

Antisocial behaviour, however, is more complex than government policy allows and involves complex issues that may require multi agency interventions or preventative work as opposed to sanctions and blame. Research has shown that individuals who

engage in serious antisocial behaviour cases often have multiple problems. These include mental health issues, special needs and high levels of poverty (Hunter, Nixon & Shayer 2000). Furthermore, a report by the Youth Justice Board on Intensive Supervision and Surveillance Programmes (ISSP¹⁹) (2004) showed that nearly half of the young people involved in the ISSP were from deprived households, 9% had attempted suicide, 15% were self-harming, a third were thought to have experienced abuse in the past, and almost 60% of the ISSP sample had been involved with social services departments as a child (n=2,108). The report concludes that many of the young people referred on to the ISSP had been disadvantaged by their early life experiences and some showed evidence of mental health problems and considerable vulnerability. Therefore, in a high percentage of cases there were underlying problems that may have caused the behaviour, and prohibitive measures, such as ASBOs, may not be an appropriate form of intervention. Enforcement and sanctions, therefore, may not be the answer and a balance needs to exist between longer term preventative measures and intervention and short term sanctions.

The Government has recently taken this criticism on board and has published its Respect Action Plan (Home Office 2006). This plan explicitly states that its focus is on the causes of antisocial behaviour and it is evident from the Respect Action Plan that the Government sees the causes of antisocial behaviour as lying within the family and classroom. As a result, the Government proposes to invest resources in a programme

¹⁹ The Intensive Supervision and Surveillance Programme (ISSP0), introduced in 2001 by the Youth Justice Board, is a community based programme available for persistent and serious young offenders. As well as surveillance, the programme offers core modules in education and training, offending behaviour,

of change to improve parenting provision nationally, to pilot new school based outreach advisors, to establish a Parenting Academy²⁰, to focus help on parents who need it most, to introduce incentives for teenage parents to attend parenting classes, to expand the use of parenting orders so that schools can issue them, to expand mentoring programmes, to tackle truancy, to increase youth volunteering, and to expand sports activities for young people. The Government also proposes to establish a national network of intensive family support schemes and all Local Authorities²¹ will have to ensure that intensive family support projects and antisocial behaviour work is in place.

The Respect Action Plan also focuses on what it calls ‘problem families’ and there is an acknowledgement that these families may have multiple problems such as mental health illnesses, alcohol, drugs, domestic violence, poor school attendance, poverty and unemployment. These problems, it is stated, cannot be solved through short-lived action from single local agencies. Instead, the Plan proposes that professionals undertake assessments to identify the underlying problems which the family face before a package of multi-agency support is put in place. However, although the Respect Action Plan does emphasise the importance of understanding the causes of antisocial behaviour, it also reinforces the concept of enforcement and states that it will ‘challenge them [problem families] to accept support to change their behaviour, backed up by enforcement measures’ (2006:3).

interpersonal skills, family support, counselling, mental health, drug or alcohol work, and accommodation work.

²⁰ Parenting Academies will deliver and support the training of staff from a range of professions to ensure that they have the skills necessary to deliver high quality parenting support.

1.6: GOVERNMENT POLICY ON CHILDREN AND FAMILIES

Government policy on antisocial behaviour, therefore, is predominately one of enforcement and sanction as opposed to a focus on early intervention and prevention. However, examining Government policy on supporting families and children shows that these policies have at their heart a commitment to early intervention, and prevention as well as a focus on identifying the causes of social exclusion and as a result antisocial behaviour²². The Government's Green Paper 'Every Child Matters' (2003), which was published alongside the Government's response to Lord Laming's Report into the death of Victoria Climbié, proposes many measures to reform and improve care for all children and sets out the Government's long term goal to integrate key services for children. The Children Act²³ (2004) provides the legislative framework for the implementation of the recommendations of the Green Paper, and the primary vehicle for integration of services will be Children's Trusts. The aim of the Green Paper is to maximise the opportunities open to all young people to improve their life chances and fulfil their potential. The Green Paper, therefore, has important implications for the prevention and early identification of early-onset antisocial behaviour.

The Government's aim in 'Every Child Matters' is for every child, whatever their background or circumstances, to have the support they need to:

²¹ From April 2007 all Local Education Authorities (LEA's) will have Local Area Agreement's (LAA) which must all include extensive family support and Antisocial Behaviour Work.

²² The Government explicitly states in 'Every Child Matters' that one of its objectives is to reduce the number of children engaged in antisocial behaviour.

²³ Children Act 2004 brought in a duty to co-operate between agencies and localities.

- Be healthy²⁴
- Stay safe²⁵
- Enjoy and achieve²⁶
- Make a positive contribution²⁷
- Achieve economic well-being²⁸

The Green Paper proposes Children's Centres²⁹ in the most deprived neighbourhoods, Children's Trusts³⁰, Extended Schools³¹, more activities for children out-of-school, increases in Child and Adolescent Mental Health Services and Speech and Language Therapy and reforms to the Youth Justice System, including extending the Intensive Supervision and Surveillance Programme. 'Every Child Matters' identifies four main areas for action:

First, supporting parents and carers and improving parenting and family support. This will be achieved by offering a three tier system of family support:

- Universal services: offered by schools, health, social services and childcare facilities.

²⁴ Enjoy good physical and mental health and live a healthy lifestyle.

²⁵ Be protected from harm and neglect.

²⁶ Getting the most out of life and developing skills for adulthood.

²⁷ Being involved with the community and society and not engaged in antisocial or offending behaviour

²⁸ Not being prevented by economic disadvantage from achieving their full potential in life.

²⁹ Sure Start Children's Centres are places where children under 5 years old and their families can receive holistic integrated services and information, and where they can access help from multi-disciplinary teams of professionals. Sure Start is the cornerstone of the Government's drive to tackle child poverty and social exclusion.

³⁰ Children's Trusts are the key organisational vehicle to achieve the key five outcomes for children identified in Every Child Matters. Children's Trusts bring together all those who provide services for children and families in each local area and provide an opportunity for them to work in an integrated way with other organisations to plan, commission and deliver services for children and young people. The Duty to Co-operate (Children Act 2004) will be implemented through Children's Trusts.

³¹ Extended schools aim to provide a focus for a range of family and community services such as childcare, health and social services, adult education and family learning and study support around Local Authority schools.

- Targeted and specialist services: available for parents who need additional help.
- Compulsory action: parenting orders as a last resort where parents fail to control truancy or antisocial behaviour.

Second, early intervention and effective protection. One of the key priorities of 'Every Child Matters' is to improve the co-ordination of services for children and young people at risk, and the Green Paper is very much concerned with the fragmented nature of children's services. This includes:

- Information not being shared between agencies and concerns not being passed on.
- Children receiving assessments from different agencies which duplicate rather than complement each other leading to wasted time, and feelings of alienation on the part of the families who have to repeat their story.
- Organisations working to different protocols and standards making it difficult for agencies to work together.
- Not focusing on the child's needs early enough
- Several professionals being in contact with a child over time but no single person providing continuity or co-ordinating services.
- Several agencies spending more money on the child as opposed to one agency spending an appropriate amount on a co-ordinated package of support.

As a result of these concerns, the Green Paper puts emphasis on information sharing between agencies so that problems or difficulties can be picked up early. This includes the use of the Common Assessment Framework (CAF) which enables information to follow a child, thereby reducing the need for duplication. CAF is intended to provide a method of assessment to support earlier intervention and to improve joint working and

communication between practitioners. It is also intended to enable a picture of a child or young person's needs to be built up over time and, with consent, shared among professionals. A Lead Professional would be responsible for co-ordinating a package of care for children known to more than one agency. As well as CAF, the Green Paper also introduced the idea of an Identification, Referral and Tracking database to include all children. This would incorporate a system of flagging up cause for concern so as to aid information sharing across disciplines and localities. As well as the sharing of information, the Green Paper also puts emphasis on professionals working in multi-agency teams which would be based around schools or Children Centres. There is, therefore, much emphasis in the Green Paper on multi-agency working, early intervention and information sharing³². However, some agencies have expressed concern about information sharing and these concerns range from contraindications with the Human Rights Act 1998³³ to the fear that the amount of information known about a family may alienate those with the most needs making them less likely to seek support (NSPCC 2004).

Third, accountability and integration. The Green Paper aims to break down 'organisational boundaries' and has created the post of Director of Children's Services for each Local Authority. This person is accountable for all Local Authority Education

³² Child Concern Pathways have been introduced by some Local Authorities, for example Devon. Child Concern Pathways are a model which seek to identify and address the needs of Children and Young People via universal, early intervention and targeted services. The Pathway aims to establish identification, assessment and referral routes for Children and Young People who are causing ongoing concerns to professionals working in universal settings such as schools. Referral to a multi agency panel would take place after assessment and if needed referral to more specialised services.

³³ Articles 6 and 8 of the ECHR are concerned with respect for family life. Information sharing could lead to intrusiveness into family life as agencies may know everything about a family even that which has no relevance to child protection.

and Children's Social Services and key services for children and young people will eventually become integrated as part of Children's Trusts. As a result the boundary lines between Education and Social Services will become, they hope, blurred and accountability will rest with Children's Services³⁴ as opposed to a number of different agencies.

Fourth, workforce reform. The Green Paper identified concerns about staffing and human resources. These included difficulties in recruitment and retention of qualified and skilled staff, inadequate training of staff, and poor management and support for frontline staff. The Government, subsequently, established a Children's Workforce Unit in the Department for Education and Skills which published the Children's Workforce Strategy in April 2005. This strategy sets out four strategic challenges: recruitment of high quality staff, retention of staff and improved development/career progression, strengthening multi-agency working, and promotion of stronger leadership and management. Furthermore, processes, such as the Common Core of Skills and Knowledge for the Children's Workforce, were introduced which sets out areas of expertise that everyone working with Children, Young People and Families should have. To summarise, therefore, the Government envisages its programme of change as a four-staged process. First, inter-agency governance which would include Local Safeguarding Children Boards³⁵, a new Minister for Children, Young People and Families³⁶, a

³⁴ Education and Social Services are now known as Children and Young People's Services.

³⁵ Replacing Area Child Protection Committees.

³⁶ Beverley Hughes MP replaced Margaret Hodge MP in 2005.

Children's Commissioner³⁷, Directors of Children's Services, Annual Priority Meetings, and Integrated Inspections of Children's Services³⁸. Second, integrated strategy which would include a Children's and Young Person's Plan³⁹ for each Local Authority, joint commissioning of services between Education, Health and Social Services, and pooled budgets⁴⁰. Third, integrated processes and tools including information sharing, common skills for professionals, and the Common Assessment Framework. Fourth, integrated front-line delivery including co-located services i.e. Children's Centres, Extended Schools, multi-agency working and a lead professional who would be accountable for co-ordinating services.

The co-ordination of services and multi-agency working, therefore, is the key to the Government's strategy to improve outcomes for all children. The aim is to ensure that all children receive co-ordinated services at the onset of any difficulty, for example behavioural problems, so as to maximise their life opportunities and prevent the behavioural problems, for example, becoming entrenched. The Government, therefore, in the words of Margaret Hodge the then Minister for Children, Young People and Families, want to 'build services around the needs of children and young people – and shift to an approach that focuses on prevention rather than simply addressing the

³⁷ The Children's Commissioner promotes awareness of the views and interests of Children and Young People, and has a duty to take into account the United Nations Convention on the Rights of the Child. Professor Al Aynsley-Green was appointed as England's first Children's Commissioner in March 2005.

³⁸ The Commission for Social Care Inspection, the Commission for Healthcare Audit and Inspection, the Audit Commission, the Office For Standards in Education and other relevant Inspectorates will work together to develop the Framework for Integrated Inspection of Children's Services and carry out Joint Area Reviews of these services.

³⁹ Children and Young People's Plan is a single statutory plan for how integrated services will be provided for Children and Young People in each Local Authority.

⁴⁰ Joint Commissioning refers to working across agency boundaries to identify need, services that are needed and the provision of these services for Children and Young People. The Children Act 2004 gave statutory services powers to pool their budgets to improve services for Children and Young People.

damaging effects when things go wrong' (2004). This, we believe, has important implications for children with behavioural problems.

1.7: THE WIDER CONTEXT, THE FAMILY AND GOVERNMENT POLICY

The Government has also focused on the wider social context in its aim to improve outcomes for all children. This is important as an ecological framework of children's development views a child's development as not only being influenced by the personal characteristics of the child but also by their family, school, peer group, neighbourhood, and the community contexts in which they live (Bronfenbrenner 1979). Within an ecological framework, therefore, interventions and policy should be targeted at all levels of the system, not just at the family level.

In *Breaking the Cycle* (Home Office 2004), the Government states 'that joined up solutions are needed for joined up problems' and as a result of this thinking have introduced numerous initiatives and policies to tackle the drivers of social exclusion and antisocial behaviour. Many of these policies are designed to improve child outcomes by focusing on the wider context within which children live. One such context is child poverty and the Government's anti-poverty strategy is dominated by its emphasis on reducing child poverty. 'Child Poverty is a scar on Britain's soul.....we will not rest until we have banished child poverty from the face of Britain' (Brown 1999:8). The Treasury, therefore, has set out objectives to eradicate child poverty by 2020⁴¹, to halve

⁴¹ The Government has now changed this to the goal of achieving one of the lowest child poverty levels in Europe.

it by 2010, and to make a substantial progress towards eliminating child poverty by reducing the numbers of children in poverty by at least a quarter by 2004⁴². To this end, the Government has introduced a number of initiatives to encourage employment, improve childcare, and increase income. For example, the introduction of initiatives such as the New Deal Programme aims to help disadvantaged groups, for example lone parents, back into work via support and improved access to training. Coupled with this initiative is an expansion in nursery education and childcare services via Sure Start Local Programmes to enable lone parents, for example, to take up employment. Working tax credits for low income families, the National Minimum Wage, increases in child benefit and child tax credits have also been introduced. All of these initiatives aim to increase both employment and income for families and as a result reduce child poverty, and the Government has had success in reducing child poverty (Brewer et al 2002; Sutherland et al 2003). However, it has been argued that the Government policies on reducing child poverty have been less successful for those most in need (Save the Children 2004) and that there has been little or no improvement in the percentage of children living in severe poverty in Britain⁴³.

The Government has also attempted to target the problems associated with disadvantaged areas in its focus on improving social exclusion and child outcomes. These problems include high crime, poor housing, educational underachievement, and poor health. Numerous initiatives have been introduced by the Government to address these problems

⁴² Now been changed to reduce the number of children in low-income household by at least a quarter by 2004.

such as The National Strategy for Neighbourhood Renewal⁴⁴, The New Deal for Communities⁴⁵, Crime Reduction and Disorder Partnerships, Excellence in Cities⁴⁶ and Health Action Zones.

Furthermore, there has also been a concerted effort, by the Government, to reduce teenage pregnancy including the setting up of a Teenage Pregnancy Unit within the Department for Education and Skills and the introduction of the Teenage Pregnancy Strategy (Social Exclusion Unit 1999) which sets out 'an integrated strategy to cut rates of teenage parenthood.....and propose(s) better solutions to combat the risk of social exclusion for vulnerable teenage parents and their children (Social Exclusion Unit 1999:2). The action plan for the Teenage Pregnancy Strategy includes four goals: 1) a national campaign to improve understanding and change behaviour, 2) joined up action at both national and local levels, 3) better prevention of the causes of teenage pregnancy including improved education, access to contraception and the targeting of groups deemed at risk, 4) better support for pregnant teenagers and teenage parents with a focus on a return to education. Initiatives to combat teenage pregnancy and to support teenage parents are, we suggest, important in tackling possible causes of antisocial behaviour (see chapter 2).

⁴³ Workless households, for example, make up only 17 per cent of all types of employment circumstance, but contain 53 per cent of all children in poverty (Nickell 2003). It has been argued that Government reforms do not elevate poverty in these families (Warren House Group at Dartington 2004).

⁴⁴ Initiative to tackle the common characteristics of the most deprived neighbourhoods including poor housing, poor health, poor education, few job opportunities and high crime rates.

⁴⁵ Key themes to be tackled are poor job prospects, high levels of crime, educational underachievement, poor health, and problems with housing and the physical environment.

1.8: VULNERABLE FAMILIES AND GOVERNMENT POLICY

The Labour Government, therefore, has since 1997 introduced a range of policies and programmes intended to improve outcomes for children, young people and families. These include, to name but a few, Quality Protects⁴⁷, Surestart, the Children's Fund⁴⁸, initiatives to end child poverty, the National Service Framework⁴⁹, and On Track programmes. The 'Every Child Matters' agenda also aims to improve outcomes for children and young people, and puts emphasis on early intervention. There has, therefore, been a concerted effort by the Government to reduce social exclusion and increase opportunities for children and families. The Government's initiatives to reduce social exclusion are, we suggest, crucial in tackling antisocial behaviour as the risk factors for social exclusion are very often the same risk factors for antisocial behaviour (see Chapter 2). Furthermore, initiatives such as 'The Every Child Matters' agenda are important as they focus on providing co-ordinated intervention at the first sign of any difficulty and as a result children with early onset behavioural problems should be able to access services more quickly and more effectively.

⁴⁶ The Excellence in Cities programme was introduced in 2000 to provide additional funds to schools for specific approaches to improve exam results and tackle pupil disaffection. It was extended in December 2003 to cover all primary schools with more than 35% of pupils on free school meals.

⁴⁷ Five year programme aimed at improving the management and delivery of Children's Social Services such as increasing the number of 'Looked After Children' with 5A-C GCSE's, and an increase in the number of adoptions.

⁴⁸ Children's Fund supports voluntary organisations working with 5-13 year olds to prevent social exclusion.

⁴⁹ Published by the Department of Health and Department for Education and Skills in 2004. States that everyone delivering services for children and young people has a role in improving outcomes. The scope of the NSF is wide with implications for the NHS, social care, schools, the Youth Justice Board and anyone contracted by the NHS to provided services for children.

However, although the Government has introduced numerous initiatives to tackle social exclusion, this does not necessarily mean that the most disadvantaged people will use the service (Breaking the Cycle 2004). This is evident in the New Deal employment programmes, where people with the most disadvantages were least likely to participate or to get jobs as a result (Social Exclusion Unit 2004). It has, therefore, been suggested that policy and delivery changes may be needed to reach all those in need (Doherty et al 2003)

Policy and research reports have identified a number of groups for which policies and services delivery is less effective. In 'Breaking the Cycle' these groups included:

- People with physical or mental health problems
- Those who lack skills or qualifications and life skills
- People from some ethnic minority groups, including asylum seekers and refugees.

These groups are often referred to as 'the hard to reach'⁵⁰. In a study on delivering services to 'hard-to-reach' families in On Track Areas (Doherty et al 2003), three types of 'hard to reach' groups were identified:

- Minority groups i.e. ethnic minorities, travellers and asylum seekers or under represented groups i.e. the economically disadvantaged or socially excluded.
- The overlooked or invisible or those unable to articulate their needs, i.e. the learning disabled.

⁵⁰ The term 'hard to reach' was first coined by Mori (www.mori.com/localgov/reach/php) who noted that traditional methods of researching the general public were not appropriate for particular groups of people, for example, Black Minority Ethnic (BME) groups, young people, refugees and asylum seekers, people with learning difficulties, and deprived communities.

- The service resistant or those unwilling to engage with service providers, i.e. the suspicious, the over-targeted, or the disaffected.

Doherty et al (2003) also identified sub-groups within the groups above. These sub-groups included men, families in need, and families engaged in criminal activities or antisocial behaviour. It was evident, from the On Track research that risk factors associated with criminal activity, drug use or antisocial behaviour were emerging as barriers to engagement with families.

Previous research has identified a number of reasons why the 'hard to reach' disadvantaged groups may not take up services. Ghate and Hazel (2002), for example, found in their study of parenting in poor environments that support and staff attitudes were not always seen in a positive light. Parents, they suggest, want quality services which do not stigmatise or blame those who attended and allowed them to feel 'in control'. This idea of services stigmatising those who use them has been found in other research (Barrett 2003). Whilst others have found that by reducing the perceived distance between the service user and provider leads to increased take-up amongst the 'hard to reach' and that voluntary providers were reported as less distant and more in tune with local populations and their needs (Doherty et al 2003).

Previous research on the 'hard to reach' has important implications for Government policy on antisocial behaviour. As shown earlier, research has shown that individuals who are engaged in antisocial behaviour tend not to take up services (Doherty et al 2003). Government policy, however, on antisocial behaviour tends to focus on sanctions

and enforcement to ensure take-up of services, i.e. parenting orders, ASBO's, and child curfews. Coupled with this is a focus in Government policy on antisocial behaviour on blame and stigma. This approach contradicts previous research findings which suggest that 'hard to reach' families value services which allow them to feel in control and which do not stigmatise. The Government's focus on blame and stigma can be seen by contrasting the language used in Government policies on antisocial behaviour with the language used in Government policies on the socially excluded (Social Exclusion Unit 2004). This difference in language is somewhat surprising as previous research has shown that in many antisocial behaviour cases, the individuals involved were very likely to have multiple problems and backgrounds (Social Exclusion Unit 2000; Brown 2004; Hunter, Nixon & Shayer 2000). In other words they were the socially excluded. There is, therefore, a contradiction at the heart of Government policy on the socially excluded and those with antisocial behaviour; resulting in the Government holding individuals and communities responsible for the latter and social processes and structural inequalities responsible for the former. The use of terms and statements such as 'yobs', 'problem families', 'naming and shaming' and 'parents failing to meet their responsibility' could, therefore, be seen as unhelpful in encouraging take-up of services for a group which has already been identified as 'hard to reach' and who have been identified as having multiple disadvantages (Social Exclusion Unit 2000; Brown 2004; Hunter, Nixon & Shayer 2000). It could be argued, therefore, that policy on antisocial behaviour should not be alienated from policy on social exclusion; as risk factors for social exclusion are very often the same risk factors for antisocial behaviour.

CHAPTER 2

RISK FACTORS FOR ANTISOCIAL BEHAVIOUR

2.1: INTRODUCTION

Researchers, have to date, identified a wide range of environmental risk factors implicated in the origins of both adult and childhood antisocial behaviour. However, although previous research has identified a number of risk factors for antisocial behaviour in children, it is also evident from previous research that no single risk factor can explain antisocial behaviour in either children or adults. Rather the previous research suggests that the higher the number of risk factors a child/adult encounters the greater the likelihood of developing antisocial behaviour (Loeber and Farrington 1998; Farrington 1991; Rutter et al 1975). In the Isle of Wight Longitudinal Study (1975) Rutter found that the number of stressors was a critical component, and increased the likelihood of child behaviour problems two to four times. In the Christchurch Health and Development Study (Fergusson & Lynskey 1996) it was found that children living in families with the most severe risk index had odds of developing multiple problem behaviours during adolescence that were more than 100 times greater than those of children in the most advantaged 50 per cent of the sample. It is, therefore, imperative in any study of antisocial behaviour to examine risk factors in a multivariate format. Behavioural problems in children, it is argued, can better be predicted by combinations of risk factors rather than by single risk factors (Sameroff et al 1993).

2.2 RISK FACTORS FOR ANTISOCIAL BEHAVIOUR

The risk factors for antisocial behaviour can be broadly divided into two groups: child risk factors and social/family risk factors.

2.2.1: Child Risk Factors

A number of child factors have been identified as risk factors for the onset of antisocial behaviour. First, an individual's temperament or personality (Thomas and Chess 1977; Caspi et al 1994; Krueger et al 1994). Research has indicated that there is an association between particular personality or temperament traits and antisocial behaviour. For example, mothers who report a child who is difficult at age six months and one year were more likely to have a child with externalising problems at age eight years old (Bates et al 1991). Furthermore, research has shown that individuals who engage in antisocial or criminal behaviour are more likely to display impulsive traits and be more likely to experience negative emotions such as anger (Caspi et al 1995). Second, cognitive and social skills deficits. Research suggests that many children with behaviour disorders may misread their peer's social cues and as a result of this attribute hostile intentions to innocent situations (Milich and Dodge 1984). However, it is unclear how far this inadequate processing of social information is a result of organic factors or the result of negative interactions with parents. Third, low academic achievement is a risk factor for childhood antisocial behaviour, especially reading difficulties (Kazdin 1987; Sturge 1982). The relationship between poor academic performance and conduct

disorder, however, is complicated and it is not clear whether disruptive behaviour precedes or follows academic difficulties. Fourth, as stated in Chapter 1, research has identified a possible genetic contribution to antisocial behaviour. Twin studies have shown a greater concordance of antisocial behaviour among monozygotic twins as opposed to dizygotic twins, and adoption research has indicated that children separated from parents who exhibit deviant behaviour are still at greater risk of developing similar behaviour (Kazdin 1987). However, this association is not clear-cut and it could be that monozygotic twins are more similar in terms of behaviour as a result of people being more likely to treat them in a similar fashion. Furthermore, it could also be argued that children who have been adopted may show similar behaviour patterns to their biological parents as a result of their early life experiences with their biological parents. Fifth, there are significant differences in child antisocial behaviour according to gender (Rutter 1975). Boys are significantly more likely than girls to develop aggressive behaviour problems (Patterson 1975) and almost twice as likely to develop any behaviour problem (Graham et al 1982). Sixth, research has indicated that the propensity of young people and children to commit antisocial acts might have a biological or physiological basis. For example, it has been shown that a lowered heart rate (Mezzacappa et al 1997) and enhanced serotonin and lowered dopamine activity (Pine et al 1997; Limson et al 1991) are associated with increased antisocial behaviour; these results are, however, tentative. Seventh, research has shown that there is an association between attention deficit hyperactivity disorder (ADHD) and antisocial behaviour (Mannuzza et al 1991). However, it is not clear whether ADHD acts as a predictor risk factor or a moderator of another factor (Moffitt 1990). Lastly, several prenatal factors have been associated with

increased antisocial behaviour. These include smoking and alcohol/drug use during pregnancy (Delaney-Black et al 2000; Weissman et al 1999, Olson et al 1997). However, these results are problematic in that the association between smoking and antisocial behaviour, for example, may be a marker for other factors such as a parent's behaviour, and/or poverty.

2.2.2: Social and Family Risk Factors

Previous research has identified numerous social and family risk factors for child antisocial behaviour and this section gives an overview of some of the more important risk factors for antisocial behaviour. First, research has shown that maternal depression is linked with both parents and teacher reports of behavioural problems (Williams et al 1990). Moreover, maternal depression has also been found to impact on parenting behaviour and studies have shown that mothers who are depressed not only increase the frequency of commands in response to a child's defiance (McMahon & Forehand 1988) but also are more likely to be highly critical of their children and as a result reinforce poor behaviour (Webster-Stratton & Herbert 1994). Second, social isolation has been identified as a risk factor for antisocial behaviour. Maternal insularity⁵¹ has been shown to be directly associated with child conduct problem and mothers who are insular have been found to use more aversive behaviour with their children (Wahler & Dumas 1985). Third, research has indicated that peer groups are an important risk factor for antisocial behaviour and pressure from peers may encourage young people to act in an antisocial way. However, other research has also suggested that the reason antisocial young

people may gravitate to other antisocial young people (Farrington 1996; Patterson & Yoerger 1997), is as a result of them being rejected by their non-antisocial peer group (Coie et al 1995). Fourth, research has shown that children's behaviour is affected by the characteristics of the areas in which they live, and by the broader community (Gorman-Smith & Tolan 1998; Sampson & Groves 1989). Children who live in deteriorating neighbourhoods with higher crime rates and lower community cohesion are more likely to be at risk of antisocial behaviour (Farrington 1991).

Fifth, previous research in the UK has identified teenage parenthood as a risk factor for antisocial behaviour, and research has shown that children born to teenage mothers are more likely to engage in delinquency and to become teenage parents themselves (Manlove 1997, Morash & Rucker 1989, Social Exclusion Unit 1999). Furthermore, Moffitt et al (2002), using the E-Risk data set used in this thesis, showed that younger mothers were more likely than older mothers to have significantly less human and social capital, and experience more mental health difficulties. The children of younger mothers were more likely to suffer emotional and behavioural problems, and showed higher rates of illnesses, accidents and injuries. Sixth, research has indicated that parental antisocial behaviour is a risk factor for childhood antisocial behaviour (Farrington 1995) and the Cambridge Study, for example, showed that over 60 per cent of boys whose fathers had been convicted of offences were eventually convicted themselves (Farrington et al 1996). Furthermore, a study which examined official crime records indicated that over 50 per cent of the offences committed were concentrated in 5 per cent of families (Farrington, Barnes & Lambert 1996).

⁵¹ Characterised by a negative perception of social interchanges (Wahler and Dumas 1984).

Seventh, a substantial body of literature documents the detrimental effects of poverty on children's development and research has shown that children who live in poverty are more likely to have problematic behaviour (Seccombe 2000; Conger, Conger & Elder 1997; Conger et al 1993; 1992; Farrington 1991)⁵². However, not all research has found a strong association between poverty and child behaviour problems, and it has been suggested that family income is a weak indicator of poverty, and is mildly associated with behaviour problems (Blau 1999; Duncan et al 1997). As a result, researchers are keen to develop measures of multiple deprivation which go beyond income (Hills 2001).

Eighth, research has found that children raised in families with high marital conflict⁵³ are at increased risk of problem behaviour (Loeber 1987), and studies have indicated that domestic violence, for example, has a more detrimental effect on children's outcomes than parental quarrelling or other forms of verbal violence (Grych & Fincham 1990).

Ninth, research has documented associations between particular family structures and child antisocial behaviour. For example, research has indicated that children from single-parent households are at increased risk of poor behavioural outcomes, and that this association still holds even when poverty is controlled for (McLanahan & Booth, 1989; Sampson 1987). However, the association between family structure and child behavioural problems could be for a number of reasons. For example, research suggests that single mothers report more mental health problems (Guttentag, Salasin & Belle 1980), report higher marital conflict and have higher levels of residential mobility (McLanahan & Booth 1989). The association, therefore, between family structure and

⁵² Poverty as a risk factor for antisocial behaviour is discussed in more depth in Chapter 8.

⁵³ Marital conflict has a risk factor for antisocial behaviour will be discussed in more depth in Chapter 7.

behavioural problems could be the result of a third factor such as mental health or marital conflict.

2.3: PARENTING AND ANTISOCIAL BEHAVIOUR

One of the most robust risk factors which has been identified for child antisocial behaviour is parenting. However, before discussing the research on parenting as a risk factor for child antisocial behaviour, it is worthwhile to examine what is meant by the term parenting. Baumrind (1971) suggests that parenting styles consist of two elements: responsiveness or warmth and control or discipline (1971; 1989), and identified four types of parenting styles. First, authoritative parenting which, according to Baumrind, is characterised by high control (i.e. discipline) and high responsiveness (i.e. warmth). The authoritative parent tends to be rational, encourages verbal expression, self-will and autonomy (Baumrind 1971) and as a result their parenting consists of emotional support, communication, firm limit setting and responsiveness (Querido, Warner & Eyberg 2002). Second, authoritarian parenting which is characterised as high in control but low in warmth. As a result authoritarian parents are more likely to use punitive and directive parenting strategies including the use of physical discipline (Querido, Warner & Eyberg 2002; Baumrind 1971). Barber (2000) suggests that children of authoritarian parents behave and obey parents because they are afraid of their parents whilst Hartup and Laurson (1993) suggest that authoritarian parents often tend to put a child down and give little or no explanation for punishment. Third, permissive parenting styles were characterised as low in control but high in

warmth. The permissive parent was more likely to have little or no limit setting or boundaries but were nurturing and communicative with their children (Barber 2000). Fourth, neglectful parents were low in both control and warmth. Neglectful parenting styles are characterised by emotionally detached parents who distance themselves from their children, responding to their children's demands only at a last resort (Maccoby & Martin 1983). Baumrind (1971; 1989) suggests that children from authoritative homes generally tend to be more competent and have better outcomes than children from the other types of home.

Competent parenting has been defined as 'the style of child rearing that enables the developing person to acquire the capacities required for dealing effectively with the ecological niches that she or he will inhabit during childhood, adolescence and adulthood' (Belsky, Robins & Gamble 1984:251). Optimal parenting, it is suggested, includes warmth, affection, sensitivity, empathy, honesty, encouragement, the creation of opportunities for learning, clear consistent age appropriate boundaries, positive discipline (for example, praising good behaviour and ignoring bad), problem solving and conflict resolution skills (Gerhardt 2004; Henricson & Grey 2001). Less optimal parenting, therefore, would be characterised by violent and critical discipline which was erratic and inconsistent, a lack of supervision, a reinforcing of inappropriate behaviour, ignoring or punishing prosocial behaviour, and a decrease in positive behaviour and praise (Webster-Stratton & Herbert 1994).

Previous research in child development has implicated the parent and the quality of the parent-child relationship in the development of antisocial behaviour in children. Numerous studies have indicated for example that a coercive, hostile, critical parenting style is a risk factor for antisocial behaviour (Farrington & Loeber 1999; Sampson & Laub 1993; McCord 1991; 1979; Loeber & Stouthamer-Loeber 1986; Patterson 1982) and studies have found that higher levels of parental criticism are related to disruptive behaviour in children (Vostanis, Nicholls & Harrington 1994; Stubbe et al 1993). Furthermore, Patterson, Reid & Dishion (1992) suggest that aversive exchanges, although only comprising a small portion of total parent child interaction, appear to be much more important for the development of antisocial behaviour than other forms of interaction. The use of smacking has also been linked to increases in antisocial behaviour (McCord 1995). In the Cambridge Study of Delinquency (Farrington & Loeber 1999), harsh parental discipline predicted delinquency (OR3.3). However, the variable used was a combined measure of harsh or erratic discipline and cruel or neglectful maternal attitude, and thus this confuses the issue somewhat.

Much of what we know about smacking, however, is based on data sets that contain items like 'during the last year, did you find it necessary to spank your child' (Straus 1990). Responses to these items are either coded yes or no and thus those who smack occasionally are equated with frequent smackers (see Day, Peterson and McCracken 1998 for discussion). This is problematic, as although there is evidence that many parents regard smacking as appropriate, and effective (Graxiano, Hamblen & Plante 1996), many researchers are concerned about the high frequency with which some parents use

physical punishment (Gershoff 2002; Cohen 1996; Bitensky 1997, Straus 1999; 1994, Garbarino 1996).

Parenting, therefore, has been shown to be a risk factor for child antisocial behaviour and it is evident from Government policy that the promotion of good parenting is key to its strategy for antisocial behaviour⁵⁴. For example, the Government states in its Respect Action Plan that by ‘addressing poor parenting at the earliest opportunity, we will address one of the key causes of antisocial behaviour’. Moreover, studies in the United States have shown that by training parents in negotiation skills, sticking to clear rules and rewarding good behaviour antisocial behaviour among children were halved. (Alexander and Parsons 1973).

2.4: PARENTING, THE WIDER CONTEXT AND ANTISOCIAL BEHAVIOUR

Parenting, therefore, has been shown to be one of the strongest indicators for child antisocial behaviour. However, many of the previous studies which have looked at parenting behaviour and attitude have done so without examining the wider context within which parenting itself is situated. This is problematic in that it has been argued that parenting behaviour and attitude is multiply determined, and is effected by the personal psychological resources of parents, the characteristics of the child and contextual sources of stress such as poverty (Bronfenbrenner 1979; Belsky 1984). As a

⁵⁴The Parenting Fund, for example, is providing a total of 25million over three years for the set up and delivery of interventions aimed specifically at parent support and education in the voluntary and community sector.

result, it is important to examine the wider context in which parenting is situated so as to fully understand the impact of these factors on parenting. Specific determinants which may influence parenting include marital satisfaction, parental beliefs about discipline, grandparents parenting style, parents mental health, levels of spousal support, family economic stress, and the child's temperament (Simons et al 1993; Takeuchi et al 1991).

Moreover, it has been argued that risk factors operate on children and adults at both distal and proximal levels (Bronfenbrenner 1979; Rutter, Giller & Hagell 1998). Distal risk factors could include demographic factors such as family structure and family poverty; whilst a proximal factor could be parenting (Rutter, Giller & Hagell 1998). As a result distal risk factors, such as poverty, for example, may have an indirect effect on child outcomes by operating through proximal risk factors such as parenting. The Family Stress Model (Conger et al 2000; Conger & Elder 1994; Elder & Caspi 1988), for example, suggests that the economic strain associated with poverty influences child outcomes by having a negative impact on parental mental health and as a result parenting practices (Elder & Caspi 1988 McLoyd 1989). Research which has tested the Family Stress Model has shown that parenting can account for much of the association between poverty and children's outcomes (Bradley 1995; McLoyd 1990). Poverty, for example, has been found to decrease a parent's ability to provide warm, responsive parenting and found to increase the use of harsh punishment (McLoyd et al 1994; Sampson and Laub 1994). There is also evidence that warm noncoercive parenting may protect children from some of the negative consequences of poverty (Mosley and Thomson 1995). However, not all research has found this to be the case and some research has found that

family income and debt are only weakly associated with effective parenting (Hanson et al 1997)

Furthermore, research which has focused on the effects of marital conflict on child antisocial behaviour has indicated that marital conflict may affect a child's behavioural development by impacting on the parenting that the child receives (Fauber, Forehand, Thomas & Wierson 1990). Previous studies have shown a link between marital distress, lowered parent warmth (Vandewater & Lansford 1998), increased rejection and hostility (Harold & Conger 1997) and less sensitive and involved parenting (Owen & Cox 1997). Furthermore, Davies and Cummings (1994) in an analysis of 13 studies found that marital conflict adversely influenced the emotional tone of the parent-child relationship. These findings have led some researchers, therefore, to suggest that 'it is at the site of parenting practices that conflict has its effect on child outcomes' (Fauber and Long 1991:816). Parental conflict, therefore, it is suggested, is associated with increases in child behaviour problems not because it has a direct effect on child outcomes but because parents are less consistent or effective in their discipline practices (Patterson 1982).

2.5: INTERVENTIONS AND ANTISOCIAL BEHAVIOUR

Parenting interventions have been put forward as one of the most effective approaches to preventing and reducing behaviour problems (Brestan & Eyberg 1998). The assumption behind parenting interventions is that parenting problems lead to child behavioural problems (Webster-Stratton & Herbert 1994). By strengthening the parent's skills and

changing the way the parent reacts to the child's behaviour, it is hypothesised that there will be a change in the child's behaviour. Parenting interventions can be broadly divided into two types: behavioural approaches and relationship approaches (Barlow 1998). Behavioural approaches aim to equip parents with skills to avoid problem behaviour, such as the use of positive reinforcement, negotiation and using alternatives to physical discipline. Whilst relationship approaches aim to improve parents listening and communication skills as well as increase the parent's emotional awareness of their children and their relationship with their children. Many parenting programmes, however, combine elements of both approaches and almost all programmes teach positive discipline. Parenting programmes can be universal, selective or indicated⁵⁵ (Mrazek & Haggerty 1994).

The Triple P – Positive Parenting Programme is an example of a successful multiagency parenting and family support strategy (Sanders 2002). The programme aims to prevent severe behavioural problems in children by enhancing the knowledge, skills and confidence of parents. The programme is universal but is also offered on a selective and indicated basis. As a result the programme can intensify the support given to match the needs of an individual family without stigmatising the family. Carolyn Webster-Stratton's 'Incredible Years' is another well known example of a parenting programme and it directed at children aged 3-10 years. When evaluated in the U.S. it was found

⁵⁵ Universal programmes are those that target the entire population and are therefore seen as less stigmatising, selective programmes are targeted at a particular group such as low-income families or teenage mothers, whilst indicated programmes target high risk individuals who have been identified as having children with problems.

that the programme had significantly helped two thirds of children (Kazdin & Wassell, 2000).

Reviews of parent training programmes have found them to be effective in the UK for younger children (Scott et al 2001a), whilst interventions for serious antisocial behaviour in teenagers are much less effective. Early interventions with families are therefore key to addressing antisocial behaviour (Scott et al 2001a). Other studies, however, have found that parenting programmes are less effective with families who are disadvantaged⁵⁶ (Webster-Stratton 1990). One possible reason put forward for why parenting programmes are less effective with disadvantaged families is that the programmes, on the whole, only address one risk factor for child antisocial behaviour, i.e. parenting and as a result do not offer a truly ecologically comprehensive package. Behaviour problems, however, arise from a number of interacting factors, and as a result programmes that address only one factor may have limited, if any, success. Interventions which target parenting as well as other family problems such as marital conflict and parental depression have been shown to result in improved child behaviour (Sanders 2000, Yokishawa 1994). Therefore, to be truly effective, support for families may need to operate in a number of dimensions. The most promising approach, it has been suggested, is one that "recognises the multidetermined nature of conduct disorders, yet can be flexibly implemented to meet the varying needs of children and adolescents with conduct disorders" (Frick, 1998:94-95).

⁵⁶ Defined as single parents, depressed mothers, family history of alcoholism and drug abuse, and families who were economically disadvantaged.

2.6: PROTECTIVE FACTORS FOR ANTISOCIAL BEHAVIOUR

The majority of studies on antisocial behaviour have focused on causes and risk factors. There are, however, huge differences in the outcomes of children who experience adverse environments, and not all children who experience these risk factors will develop antisocial behaviour (Rutter 1989; Masten, Best & Garmezy 1990). It has been suggested that outcomes may vary as a result of individuals differing in terms of susceptibility to risk and because protective factors may exist which reduce risk (Rutter 1985). Previous research has identified a number of factors which may act as protective factors for antisocial behaviour. These include female gender, a resilient temperament, a positive outgoing disposition, high intelligence, and social bonding (Youth Justice Board 2001). Furthermore, data from a large US study of high risk children found that a secure attachment in infancy, along with good quality parent-child interactions, acted as protective factors (Grotberg 1995). Other research has suggested that the greater the number of protective factors the more likely a child would be to display resilience⁵⁷ (Howard & Johnson 2000).

The concept of resilience (Garmezy, Masten & Tellegen 1984; Rutter 1983) has become the focus of much recent research. Resilience refers to a 'dynamic process encompassing positive adaption within the context of significant adversity' (Luthar, Cicchetti & Becker 2000:534). Studies which have looked at resilience have focused on the personal qualities of 'resilient' children, such as high self-esteem or autonomy, as well

⁵⁷ Defined as the 'process of, capacity for, or outcome of, successful adaptation despite challenging or threatening circumstances' (Rutter 1984).

as family relations, and the wider social environment (Wyman et al 1999; Fergusson & Lynskey 1996; Werner & Smith 1992, 1982). Previous research has identified particular family and parenting factors which may be associated with resilience. These include a strong attachment to a caregiver (Egeland, Carlson & Sroufe 1993), emotionally responsive parenting attitudes, consistent discipline, and authoritative parenting styles (Wyman et al 1999). However, although previous studies have shown that particular factors are associated with resilience in children, there are methodological problems associated with the notion of resilience or protective factors. It has been argued, for example that particular factors may be protective within one context or against one behaviour problem but they may have risk effects under different conditions or for other outcomes (Losel & Bender 2003). The 'moderator concept' of protective factors (Rutter 1985) would appear to overcome this problem as it labels a variable as protective only when it reduces or buffers the effects of specific risks. A research design which aimed to assess the moderator concept of protective factors, therefore, would examine the effect of a risk factor in the presence of a protective factor. For example, Neighbors et al (1993) have shown that children who have a good relationship with their mother (protective) are better able to cope better with severe conflicts between their parents (risk) than children who did not have a good relationship with their mother. In this set of circumstances, therefore, the child's good relationship with their mother could be said to have a protective influence as it enabled the children to cope better with severe conflicts between their parents. It is, therefore, not only important to examine risk factors for antisocial behaviour in children but also to understand which processes and factors promote more successful outcomes in at-risk children. The identification of these

processes may lead to knowledge about possible preventive interventions as well as to an understanding of the possible causal pathways for antisocial behaviour.

CHAPTER 3

PROPOSED RESEARCH AND RESEARCH QUESTIONS

3.1: INTRODUCTION

Government policy is committed to tackling antisocial behaviour, and the recent publication of the 'Respect Action Plan' focuses attention on identifying the causes of antisocial behaviour (Home Office 2006). The research proposed in this thesis, therefore, aims to build knowledge about antisocial behaviour by examining risk factors for child antisocial behaviour. We focus on child antisocial behaviour as previous research has identified child behaviour problems as one of the most robust predictors of adult antisocial behaviour, crime and social exclusion. Due to the contested and subjective nature of antisocial behaviour our research uses a psychological tool which has been expressly developed to capture problem behaviour. Our analysis uses Achenbach's (1997; 1991) behaviour checklists', a well validated and reliable instrument, to measure antisocial behaviour in the mother and the father as well as the children. Achenbach divides antisocial behaviour into two components: aggression and delinquency (see Chapter 5). The former includes such things as jealousy, fighting, sudden mood changes, temper, and threatening behaviour, arguing, and destroying things. Whilst delinquent behaviour includes, for example, lack of guilt, lying, stealing, swearing, and vandalism. This criteria is not dependent on offences or criminality, but instead captures dimensions of antisocial propensity (Gottfredson & Hirschi 1990). We

utilise both the mother report and the teacher report on the child's antisocial behaviour to examine our research questions.

There are three main theoretical perspectives which guide the research described in this thesis. First, Patterson's Coercion Theory (1982) which suggests that a child's developmental risk for antisocial behaviour is a result of the child's cumulative daily exposure to coercive and negative interactions within the family unit. The theory, therefore, points to the importance of negative and ineffectual parenting practices in the development of antisocial behaviour in children. Our research is influenced by Coercion Theory for two reasons, a), both previous research and Government policy identifies parenting as a key risk factor for child antisocial behaviour, b) previous research (Rutter et al 1998) has highlighted the importance of examining how parenting practices affect child antisocial behaviour and we suggest that Coercion Theory may provide a useful framework for understanding and possibly explaining the mechanism by which parenting practices affects children's behaviour. Second, this research is also influenced by Bronfenbrenner's Ecological Theory which suggests that, although the family unit is the most important setting for young children's development, both the family and children are influenced by the wider context in which they live (Bronfenbrenner 1979). This theory hypothesises, therefore, that other factors, apart from parenting, may effect the development of antisocial behaviour in children. These factors could include poverty, marital conflict, and neighbourhoods to name but a few. We suggest, therefore, that it is important to understand how the wider context impacts on child antisocial behaviour as previous research, for example, has suggested that risk factors for child

antisocial behaviour are multi-factorial and include factors outside the parenting relationship. Third, our research is influenced by the Family Stress Model (Conger et al 2000) which hypothesises that poverty, for example, may affect child outcomes because it increases parental stress which then impacts on the parenting that a child receives. Moreover, our research is also influenced by the hypothesis inherent in Ecological Theory and Coercion Theory which suggests that factors such as parental beliefs or parental lifestyles, for example, parental antisocial behaviour may affect parenting practices within the home, and as a result may have an indirect effect on child antisocial behaviour. This line of enquiry is important as it may be that socio-economic factors and the wider context may be implicated in the origins of child antisocial behaviour because these factors affect the parenting that a child receives. This has important implications for Government policy on antisocial behaviour as it may be that structural inequality and multiple disadvantage make it more likely that particular parenting behaviours, which have been identified as risk factors for antisocial behaviour, occur. As a result the focus, in Government policy on antisocial behaviour, on the family and parenting as the ultimate causes of antisocial behaviour may be misguided.

Our research, therefore, focuses primarily on parenting as a risk factor for child antisocial behaviour as Coercion Theory, Ecological Theory and Government policy have identified the family and parenting as important in children's development. The term parenting, however, covers a wide range of behaviours and we aim in this research to untangle parenting as a risk factor by examining the contribution of its component parts to childhood antisocial behavioural problems. Baumrind (1971) has suggested that

parenting consists of two elements: warmth/responsiveness and control/discipline. We examine the contribution of maternal attitude which corresponds to Baumrind's warmth/responsiveness category and parenting behaviour which corresponds to control/discipline. Maternal attitude is measured by four variables: maternal warmth, maternal negativity, maternal positive comments and maternal negative comments whilst parenting behaviour is measured by the variable parental frequency of smacking⁵⁸ (see Chapter 5). As well as examining maternal attitude and parenting behaviour as a risk factor for child antisocial behaviour, we utilise the idea of the moderator concept of protective factors⁵⁹ and examine how far parenting behaviour, i.e. frequency of smacking, can act as a protective factor⁶⁰ for children, buffering them from the risk of other factors such as marital conflict. The type of research, we suggest, has important implications for parenting interventions.

Furthermore, following Bronfenbrenner's Ecological Model (1979), we extend our analysis beyond the realm of parenting and examine the effect of the wider context on the development of antisocial behaviour. Previous research, for example, has indicated that being a younger parent is a possible risk factor for child antisocial behaviour. This issue is particularly important in the UK context as the UK has the highest rate of teen childbearing in Western Europe, twice that of Germany, three times that of France, and six times that of the Netherlands (Social Exclusion Unit 1999). Furthermore, previous research has shown that the consequences for children of being born to a younger mother

⁵⁸ Relates to both mother's and residential partner's smacking of the child.

⁵⁹ The Moderator Concept of Protective factors examines the effect of a risk factor in the presence of a protective factor.

are severe and that both the mothers and children have disadvantaged lives. However, it has also been suggested that the association between teenage mothers and poorer outcomes may not be the result of teenage parenting *per se* but may be the result of pre-existing differences between younger and older mothers, for example pre-existing differences in levels of disadvantage (Geronimus & Korenman 1992). Following this line of enquiry we examine how far pre-existing differences in levels of maternal antisocial behaviour between teenage mothers and older mothers explain the differences in their children's antisocial behaviour (Rutter et al 1998; Geronimus & Korenman 1992). The sampling frame of the E-Risk study, which over sampled younger mothers, allows us to examine this issue in some detail and we examine our results in relation to three sample groups: a weighted 'all' mother sample, a younger mother sample, and an older mother sample (see Chapter 4).

We also extend our analysis to examine the effects of poverty, marital conflict, family structure and parental antisocial behaviour on child antisocial behaviour. Poverty is measured by a combined index which measures multiple deprivation. We measure multiple deprivation as previous research has found that income as a measure of poverty is poorly associated with behaviour problems, and it may be that multiple deprivation is more strongly associated with antisocial behaviour. Parental antisocial behaviour is measured using two variables which rates both the mother's and biological father's antisocial behaviour and we examine how far parental antisocial behaviour is related to child antisocial behaviour. Marital conflict consists of three variables: parental

⁶⁰ Protective factors can either directly decrease the likelihood of antisocial behaviour (Jessor, Turbin & Costa 1998) or moderate the influence of other risk factors (Garmezy 1985; Rutter 1985; Werner 1989).

disagreement about childrearing, domestic violence and parental quarrelling (see Chapter 5); and we examine which aspect of marital conflict has the greatest effect on child behavioural outcomes. Our variable family structure consists of five groups: the 'always solo', separated/divorced, stepfamilies, married and cohabiting (see Chapter 5) and we examine which of these groups are more likely to have children with higher antisocial behaviour. Previous research has indicated that lone parents, for example, are more likely than two parent families to have children with higher antisocial behaviour. This type of analysis, however, does not take into account the differences within the lone parent group or the differences within the two parent group. A lone parent, for example, may never have had a resident partner and may have always been single or may be separated/divorced; the consequences for children may differ as a result of the differences in their family formations. Moreover, previous research has indicated that 'family process' is more important than family structure in relation to children's behavioural problems, and that associations between divorce and children's behaviour problems are best explained by the marital conflict which preceded the divorce (Amato 1994; Demo & Acock 1996; Furstenberg 1988). Family structure, therefore, may have little effect on child behavioural outcomes. We test, therefore, whether the effects of family structure on child antisocial behaviour are mediated by marital conflict.

Lastly, we suggest that it is important in any study of parenting to go beyond the parent-child dyad to examine how far parenting practices are influenced by social contextual factors. Coercion Theory (Patterson 1992), for example, has suggested that parenting practices may be affected by a parent's levels of antisocial behaviour, whilst Ecological

Theory (Bronfenbrenner 1979) suggests that the wider context in which a child develops may impact on family processes and parenting practices. Furthermore, the Family Stress Model (Conger et al 2000; Elder & Caspi 1988; McLoyd 1989) suggests that poverty, for example, increases parental stress which affects the parenting that a child receives. We, therefore, examine how far parenting behaviour and maternal attitude are influenced by poverty, marital conflict, family structure and parental antisocial behaviour. Furthermore, we examine how far poverty, marital conflict, family structure and parental antisocial behaviour have a direct effect on child antisocial behaviour or how far their effect is mediated by another factor such as maternal attitude and parenting behaviour.

3.2: RESEARCH QUESTIONS

The previous literature on antisocial behaviour as well as the current emphasis on parenting in Government policy on antisocial behaviour have led us to formulate four research questions (see Figure 2.1 for research questions in diagrammatical form). Question 1 focuses on dissecting parenting practices as a risk factor and examines parenting practices from a 'between' family perspective. We examine parenting practices as both a risk factor and a protective factor (Chapter 6 and 9). Question 2 goes beyond the parent/child dyad and focuses on the wider context within which the child develops. We examine, therefore, how far family structure, marital conflict, poverty and parental antisocial behaviour are directly associated with child antisocial behaviour (Chapter 7 and 8). Question 3 brings together our analysis and we model some of the key risk factors for child antisocial behaviour at age 5 years old as rated by the mother and

teacher (Chapter 9). Lastly, in Question 4 we examine how far our socio-emotional contextual factors are associated with differences in parenting behaviour and attitude. We continue by examining to what extent parenting behaviour and maternal attitude mediates the effects of family structure, marital conflict, poverty and parental antisocial behaviour on child antisocial behaviour (Chapter 10). More explicitly our four research questions are as follows:

Question One

1a) How far is parenting behaviour and maternal attitude associated with childhood antisocial behavioural outcomes and which specific dimension of parenting carries the most risk?

1b) Are negative parenting interactions more important in the development of child antisocial behaviour than a lack of positive interactions?

1c) To what extent does frequency of smacking moderate the effects of maternal warmth and maternal negativity on child antisocial behaviour?

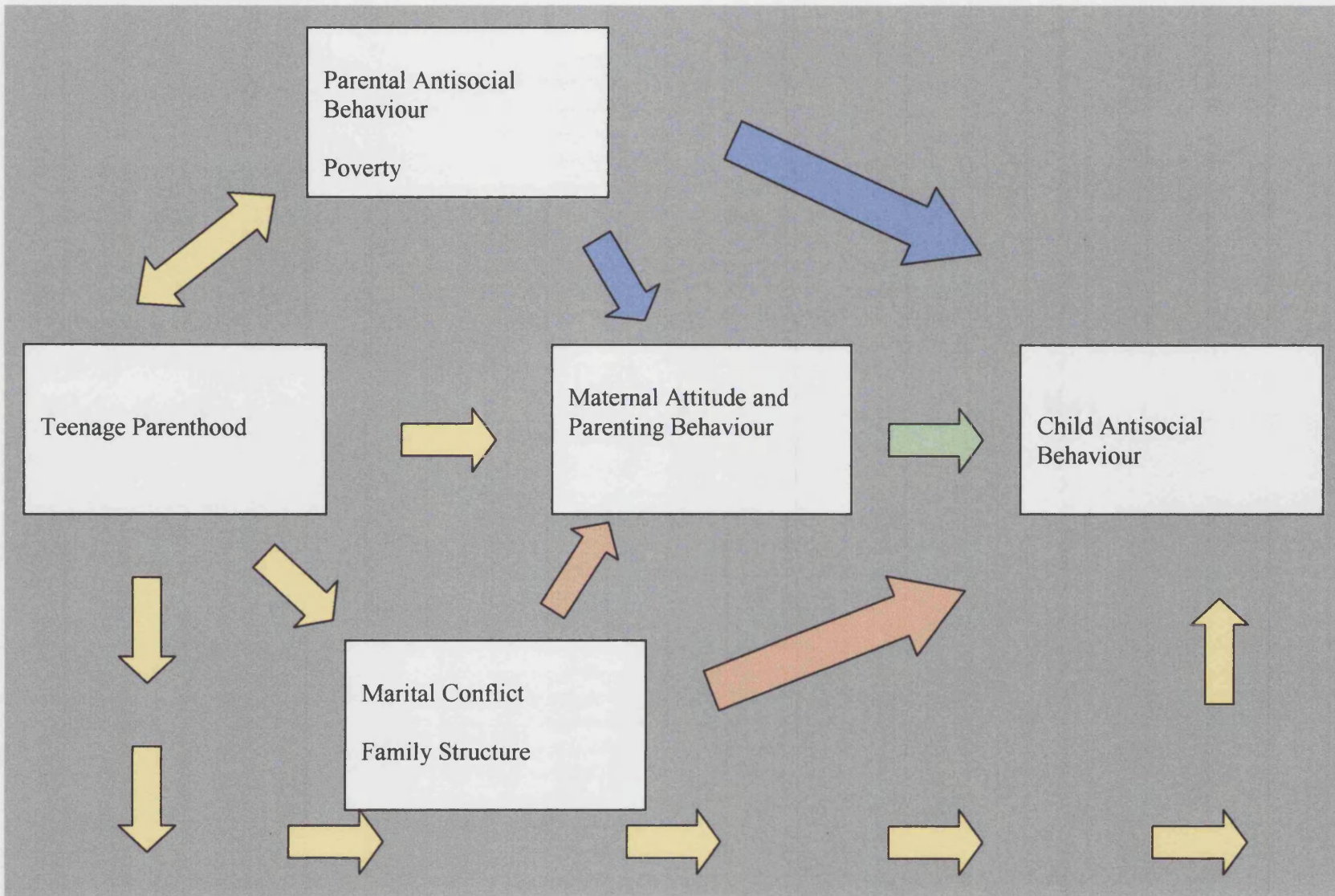
Question Two

2a) Which family structure grouping has the strongest association with child antisocial behaviour?

2b) Comparatively, which of our three marital conflict variables has the strongest association with child behaviour problems?

2c) How far does marital conflict mediate the effects of family structure on child antisocial behaviour?

Figure: 2.1: Research Questions in Diagrammatical Form.



- 2d) How far is poverty is associated with child antisocial behaviour?
- 2e) How far is parental antisocial behaviour associated with child antisocial behaviour?
- 2f) Which of our two indicators of social exclusion contributes the most to child antisocial behaviour at age 5 years old.
- 2g) To what extent do differences in levels of maternal antisocial behaviour explain differences between younger mothers and older mothers in relation to child behavioural outcomes and multiple risk factors?

Question Three

- 3a) what are the important risk factors associated with child antisocial behaviour at age 5 years old?
- 3b) How far does frequency of smacking moderate the effects of factors such as marital conflict on child antisocial behaviour outcomes.

Question Four

- 4a) How far does parenting behaviour and maternal attitude differ according to family structure, social exclusion and marital conflict?
- 4b) To what extent does parenting behaviour mediate the effect of family structure, social exclusion and marital conflict on child antisocial behaviour outcomes?

As stated earlier, we utilise the sampling frame of the E-Risk study and analyse all of our research questions according to our three sample groups: a weighted 'all mother' group, a younger mother group and an older mother group.

3.3: THE ROLE OF THE AUTHOR IN THE WORK DESCRIBED IN THIS THESIS

From January 1999, I was employed as a Research Worker on the E-Risk Study. I took part in the first wave of data collection during the period 1999/2000 when the children were five years old. This included interviewing the mother and testing the children as well as being responsible for the quality control of all the data. During the first 18 months of my PhD I coded all of the Expressed Emotion tapes which are used in this thesis. Furthermore, in collaboration with Professor Caspi, I helped to modify the Expressed Emotion coding sheet, and designed a coding Manual and training tape. The work described in this thesis is entirely my own.

3.4: PUBLICATIONS FROM WORK DESCRIBED IN THIS THESIS

A few publications have arisen related to my work on the Expressed Emotion coding described in this thesis. These are:

- ◆ Tully.L., Arseneault.L, Caspi.A., Moffitt.T, and Morgan.J. (2004). 'Does maternal warmth moderate the effects of birth weight on twins ADHD symptoms and IQ'. (2004). *Journal of Consulting and Clinical Psychology*, 72 (2).

- ◆ Caspi, A., Moffitt, T., Morgan, J., Rutter, M., Taylor, A., Arseneault, L., Tully, L., Jacobs, C., Kim-Cohen, J, & Polo-Tomas, M. (2004). 'Maternal Expressed Emotion Predicts Children's Antisocial Behaviour Problems: Using MZ-Twin Differences to Identify Environmental Effects on Behavioural Development'. *Developmental Psychology* 40 (2), (see Appendix 1).

3.5: CONTENT OF CHAPTERS

In Chapter 4 we describe the E-Risk data set, the sampling frame, sample demographics, missing data, ethics and methodology. Chapter 5 provides a detailed description of the variables used in the analysis. In Chapter 6 we examine the impact of parenting behaviour and maternal attitude on child antisocial behaviour in more detail, and this includes an examination of parenting as both a risk factor and a protective factor. Chapters 7-8 focus on the wider context within which a child develops and we examine four contextual factors: family structure, marital conflict, poverty and parental antisocial behaviour. We examine how far these factors are related to child antisocial behaviour. Chapter 7 focuses on family structure and marital conflict whilst Chapter 8 examines how far two possible indicators of social exclusion, poverty and parental antisocial behaviour, impact on child antisocial behaviour. In Chapter 9 we introduce our parenting, and socio-emotional contextual variables into a multivariate model to examine some of the important risk factors for child antisocial behaviour at age 5 years old. In Chapter 10 we continue by examining how far parenting behaviour and maternal attitude

is effected by our socio-emotional contextual factors, and how far parenting behaviour and maternal attitude mediates the effects of family structure, marital conflict, poverty and parental antisocial behaviour on child antisocial behaviour outcomes. Lastly in Chapter 11 we introduce our conclusions, policy implications and suggestions for future research.

CHAPTER 4

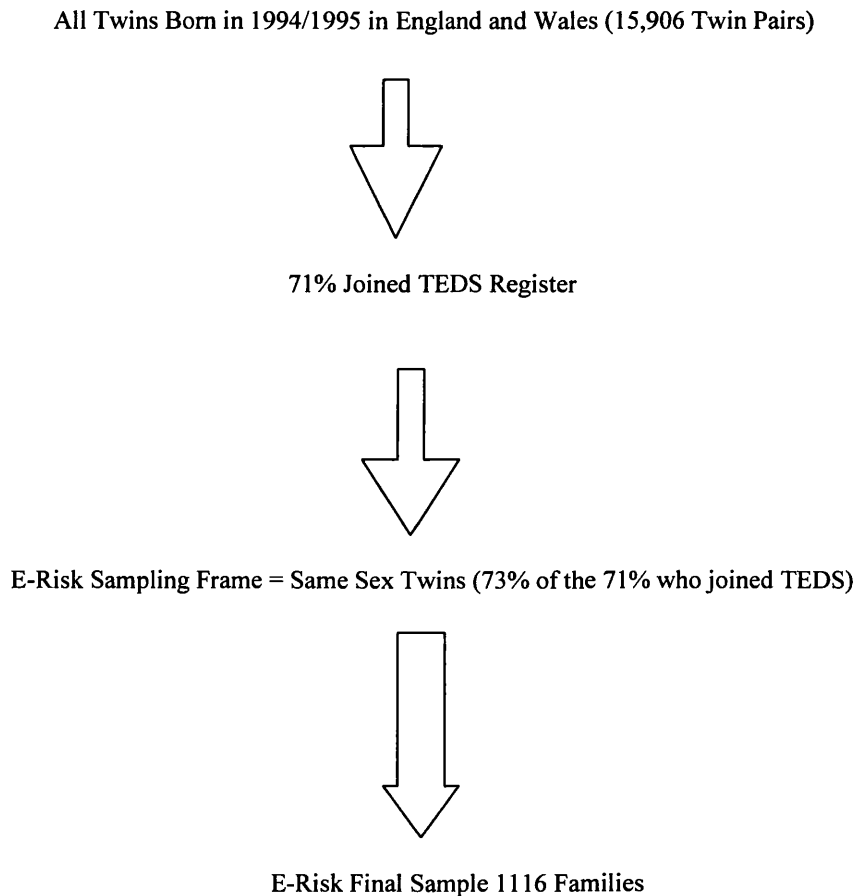
DATA-SET AND METHODOLOGY

The data set used comes from information collected by the MRC funded Environmental Risk (E-risk) Longitudinal Twin Study, which investigates how genetic and environmental factors shape children's development. The study is headed by Professors Moffitt/Caspi/Rutter at the Institute of Psychiatry and began in January 1999. The E-Risk Study passed the Maudsley Research Ethics Committee⁶¹. The E-Risk study follows an epidemiological sample of families with young twins. The first wave of data collection was between 1999-2000 when the children were aged 5 years old, and the second wave, when the children were seven years old, finished in 2002. This research uses the data collected at age 5 on 1116 families.

4.1: SAMPLING FRAME

The E-risk sampling frame was two consecutive birth cohorts (1994 and 1995) in the Twins' Early Development Study (TEDS), a birth register of twins born in England and Wales (Trouton, Spinath, & Plomin, 2002). The full register is administered by the government's Office of National Statistics (ONS), which invited parents of all twins born in 1994-1995 to enrol. Of 15,906 twin pairs born in these two years, 71 per cent joined the register. The E-Risk sampling frame excluded opposite-sex twin pairs and began with the 73 per cent of register families having same-sex twins (see Figure 4.1).

Figure 4.1: E-Risk Sampling Frame



The E-risk Study aimed for a sample size of 1100 families to allow for attrition in future years of the longitudinal study while retaining statistical power. An initial list of 1210 families was drawn from the register to target for home visits, a 10 per cent oversample

⁶¹ The purpose of Research Ethics Committee is to review the proposed study so to protect the dignity, rights, safety and well-being of all actual or potential research participants. It ensures that research studies comply with recognised ethical standards.

to allow for nonparticipation. The probability sample was drawn using a high-risk stratification strategy. High risk families were defined as those in which the mother had her first birth when she was 20 years of age or younger. This birth, however, did not necessarily relate to the age of the mother at the time of the birth of the twins as the twins may not have been her first birth. Examining the mother's age of first birth as a variable shows that only 16 per cent of the sample were actually teenage mothers at the time of the birth of the twins, the other 34 per cent of teenage mothers consisted of mothers who had been teenagers when they had given birth to children who were born prior to the twins.

The high risk sampling frame was used to replace high risk families who were selectively lost to the register via non-response and to ensure sufficient base rates of problem behaviours given the low base rates expected for 5-year-old children⁶². Early age at first child birth was used as the risk-stratification variable because it was present for virtually all families in the register, it is relatively free of measurement error, and it is a known risk factor for children's problem behaviours (Maynard, 1997; Moffitt et al 2002). In the final sample, two-thirds of Study mothers represent all mothers in the general population (aged 15-48) in England and Wales in 1994-95 (estimates derived from the General Household Survey; Bennett, Jarvis, Rowlands, Singleton, & Haselden, 1996). The other one-third of Study mothers (younger only) constitute a 160 per cent oversample of mothers who were at high risk based on their young age at first birth (15-20 years).

⁶² Child antisocial behaviour affects between 4 per cent to 20 per cent of the population depending on age (Costello 1989), and to ensure that the sample contained enough children with problem behaviour the E-Risk Study oversampled younger mothers.

Table 4.1: E-Risk Sample according to Mothers Age of First Birth

Sample groups	Freq.	Percent	Cum.
Low Risk (age \geq 21)	554	49.64	49.64
High Risk (age \leq 20)	562	50.36	100.00
Total	1116	100.00	

Of the 1210 families targeted, 7 were discovered to be ineligible for inclusion in the study because the twins had moved overseas, did not speak English, were being reared by neither biological parent, or were opposite-sex. Of the 1203 eligible families, 1116 (93 per cent) participated in home-visit assessments when the twins were age 5 years. 4 per cent of families refused, and 3 per cent were lost to tracing or could not be reached after many attempts.

As can be seen from Figure 4.1, 71 per cent of parents with twins born in 1994 and 1995 joined the Twins Early Development Study (TEDS) Register. Ninety-three per cent of families selected for inclusion in the E-Risk study took part, and 7 per cent either refused or were not contactable. Non-response is important as it may be that those families who did not register with TEDS in the first place or who refused to take part in the E-Risk study may be more likely to come from particular ethnic groups or social classes. Unfortunately, we were unable to examine the background demographics of those families who did not respond or who refused due to either a lack of information or a lack of access to the TEDS database.

4.2: SAMPLE DEMOGRAPHICS

The sample was predominantly English speaking and White. Mixed Race was defined as Black/White, Asian/White, and Black/Asian. The 'Other' ethnic group consisted of Ethnic groups such as Turkish. As the sample was predominately White, ethnicity was not a focus of this research.

Table 4.2: Child's Ethnicity and Main Language Spoken to Child at Home

Child's Ethnicity	Freq	%	Cum %
White	2016	90.40	90.40
Asian	90	4.04	94.44
Black	42	1.88	96.32
Mixed race	8	0.36	96.68
Other	74	3.32	100.00

Main language spoken to child	Freq	%	Cum %
English	2176	97.58	97.58
English+Other	12	0.54	98.12
Other	42	1.88	100.00

The 2232 children in the E-Risk study were approximately 50 per cent male and 50 per cent female. We did not examine the effects of gender on antisocial behaviour or parenting behaviour and maternal attitude as ideally this would have required mixed sex twin pairs and a 'within' family analysis. The E-Risk data-set, however, contained same-sex twins, and this would have meant that our analysis would have been a 'between' family analysis. Any findings, therefore, from such an analysis may have been the result of differences between families as opposed to differences due to gender.

Table 4.3: Gender of Children

Gender of Children	Freq	%	Cum %
Male	1092	48.97	48.97
Female	1138	51.03	100.00

4.3: DATA COLLECTION

Data were collected within 120 days of the twins' fifth birthday. Research workers visited each home for 2.5 to 3 hours, in teams of two. While one interviewed the mother, the other tested the twins in sequence in a different part of the house. Families were given shopping vouchers for their participation, and children were given colouring books and stickers. All research workers had university degrees in behavioural science, and experience in psychology, anthropology, or nursing. With the parents' permission, questionnaires were posted to the children's teachers, and teachers returned questionnaires for 94 per cent of cohort children. At the end of the interview, women were asked if their children's fathers could be contacted for research purposes at a future date. Seventy-six per cent of the women in the first cohort agreed to this and provided contact details. The majority of father-contact refusals were due to the mother not keeping contact with a non-residential father or not knowing where they were.

Data from mothers were collected via interview; no self-completion forms were used. The interview with the mother began with the Life History Calendar (LHC), a visual method which facilitates the accurate recall of retrospective life events, their timing and duration (Caspi et al 1996b). The interviewer used the LHC throughout the remainder of

the interview to assist the mother's reporting about different topics (e.g. timing of depression episodes). The mother interview then continued on to the structured part of the protocol which was guided by a booklet questionnaire. A qualitative open-ended interview (Expressed Emotion) was also audiotaped with the mother speaking for about thirty minutes on what it was like to be a parent, and her description of her children. Interviewers were told not to interrupt unless the taped interview was not going well, and the mother needed some prompts in aiding her to continue talking. Questions about each twin on the questionnaire were separated by one hour of questions on other subjects such as domestic violence, personality, and depression. This was to ensure that the mother did not exaggerate differences or similarities between her twin children. Each child protocol included up to an hour's series of games, tasks, verbal reasoning and puppet shows to assess cognitive and social behaviour. At the end of the interview, mothers were asked for future contact details to ensure further participation. After leaving the house, the researchers completed observer ratings which covered such things as parenting, stimulation in the house, condition of the home, child temperament, mother's and father's (if present) characteristics.

4.4: DATA-SET CONTRUCTION

The E-Risk dataset contains both derived and raw data. For example, income was a derived variable in that mothers were asked to select their income bracket from fifteen possible groups, whilst the variable child antisocial behaviour contained raw scores. The dataset was double entered for each variable. The data-set took this form due to each

family containing twins (2232 children). So for income there were 2232 observations, one entry for the elder twin and one for the younger twin. As the proposed research aims to examine the impact of particular variables on child antisocial behaviour the data-set was kept in this double entered format, and results will be discussed at the child level (2232 observations) rather than the family level (1116 observations).

The sample contained data for 2232 twin children. However, an initial examination of the 2232 observations showed that one family contained mostly missing data. This family was excluded from the analysis (familyid 5602 - see Appendix 2 for details). The research, therefore, begins with a baseline dataset of 2230 children (1115 families).

4.5: MISSING DATA

Complete missing data for the E-Risk data set on the whole was low. However, for some of the items, such as child antisocial behaviour, there were some questions which had been missed due to interviewer error. The statistician on the E-Risk study pro-rated this data and missing values for these variables were assumed to take the mean of all the answered cases for similar items in that variable. Table 4.4 below shows the variable in column one, the amount of complete missing data for that variable in column 2, the amount of pro-rated data in column 3 (parts of questions not answered), and the amount of complete data in column 4. Column 5 displays the number of observations of complete data and pro-rated data. Column 6 shows the total number of observations which were used for analysis and is the sum of complete data, pro-rated data, and

explicitly coded missing data. The total number in column six relates to the total number of observations at the child level rather than the family level.

Table 4.4: Missing Data

VARIABLE	Missing Data	Pro-Rated Data	Complete Data	Total N (Excl Missing)	Total N (Inc missing)
Child Antisocial Behaviour (ASB)	0	40	2190	2230	2230
Mothers ASB	4	12	2214	2226	2226
Biological Fathers ASB	14	138	2078	2216	2216
Mothers Education	0	0	2230	2230	2230
Income	98	0	2132	2132	2132
Number of Benefits Claimed	2	12	2216	2228	2228
Housing Tenure	8	0	2222	2222	2222
Ownership of car	0	0	2230	2230	2230
Mothers Unemployment	8	0	2222	2222	2222
Partners Unemployment	6	0	2224	2224	2224
Disagreement Child-rearing	312 ⁶³	12	1906	1918	2222
Quarrelling	40 ⁶⁴	12	2178	2190	2190
Domestic Violence	40 ⁶⁵	0	2190	2190	2190
Family Structure	4	0	2226	2226	2226
Frequency of Smacking	20	0	2210	2210	2210
Positive Comments (EE)	224	0	2006	2006	2230
Negative Comments (EE)	226	0	2004	2004	2230
Negativity (EE)	232	0	1998	1998	2230
Warmth (EE)	230	0	2000	2000	2230

⁶³ Missing data due to questions asking about current parent and respondent not having a current partner.

⁶⁴ Data missing as questions related to quarrelling with any partner over the last 5 years – these respondents had not had a partner in the last five years.

⁶⁵ Data missing as questions related to domestic violence with any partner over the last 5 years – these respondents has not had a partner in the last five years.

The percentage of complete missing data, as opposed to those items which were pro-rated, ranged from 0.00 per cent to 11.92 per cent. The majority of missing data was less than 1 per cent for each variable. Of those that were over 1 per cent, for example, disagreement about childrearing, this can be explained by the mother not having a current partner at the time of interview and hence not being able to answer the question as the question focused on their current partner. The highest missing data values were for the Expressed Emotion (EE) variables, and this was mainly due to random tape recorder failure which became a problem and meant that some of the EE tapes were completely uncodeable. Other reasons were an inability to hear because the mother spoke too softly, or too much noise in the household to hear her voice. A very small minority refused to speak on the tape. On the whole data was missing more for younger twins than elder twins, and this may have been due to the younger twin data being collected almost at the end of a very long interview.

There are a number of ways to deal statistically with missing data. The first approach would be to exclude cohort members with missing data from analysis. This, however, would reduce the sample size and may lead to selection bias. Second, another common strategy for handling missing information is to set missing values to the mean for the variable concerned. This strategy was undertaken by the statistician on the E-Risk study who pro-rated some of the data, and missing values for these variables were assumed to take the mean of all the answered cases for similar items in that variable. Third, another strategy would be to 'explicitly' code missing values for each variable (Hobcraft 1998:7). This allows the maximisation of the sample and allows an examination of whether the

missing data is in some way informative. To explicitly code all missing data was not really an option with the E-Risk study as missing data for some items was so low that the category would have been meaningless. We therefore, decided to code missing data as '-9' and exclude those cases from analysis if the missing data was minimal. As a result, we coded all missing data as -9, except for the Expressed Emotion data and disagreement about childrearing data. Expressed Emotion missing data and disagreement about childrearing data, however, was explicitly coded and used in our analysis. The reasoning behind this was that the amount of missing data for the Expressed Emotion and disagreement about childrearing variables was significant and we would have been open to criticisms of selection bias if we had excluded this data from analysis. Furthermore, as well as explicitly coding the Expressed Emotion and disagreement about childrearing data and using it in our analysis, we also undertook further analysis of all the data which was missing.

We examined missing data by tabulating each variable with missing data coded as '-9'. First, we examined whether mothers in the high risk group (hereafter known as younger mothers) were more likely than the low risk group (older mothers) of having missing data (Table 4.5). In all cases, with the exception of income and the expressed emotion variables, younger mothers were more likely to have missing data. The income variable was missing for older mothers, as were the expressed emotion variables. However, the expressed emotion variables were randomly missing due to tape recorder failure so this was probably the result of this failure.

Table 4.5: Number of Missing Cases according to Mother's Age at First Birth.

Variable	Age<=20 (Younger)	Age>=21 (Older)
Child ASB	0	0
Mothers ASB	4	0
Fathers ASB	8	6
Mothers Education	0	0
Income	48	50
Benefits	2	0
Housing Tenure	6	2
Car Ownership	0	0
Mothers Unemployment	6	2
Partners Unemployment	4	2
Disagreement about child	10 (+212*)	0 (+90*)
Quarrelling	12 (+18*)	2 (+8*)
Domestic Violence	12 (+18*)	2 (+8*)
Family Structure	2	2
Frequency of Smack	10	10
Positive Comments (EE)	103	121
Warmth (EE)	106	124
Negative Comments (EE)	103	123
Negativity (EE)	106	126

* No partner at time of interview so excluded from analysis by E-Risk.

Second, we cross tabulated variables to examine to what extent missing values for one variable were available for another similar variable (Tables not shown). In most cases where there were missing values for one variable an alternative variable provided information which could be used instead, however this was not the case for all missing

data. So, for example whilst there were missing values for income, there were values available for these cases for housing tenure, and use of a car which could be used instead. However, for parental antisocial behaviour, there were six cases where both the mothers and fathers antisocial behaviour scores were missing and thus no alternative was available. This proved also to be the case for the marital conflict variables. For example, if families had missing data for domestic violence, they also tended to have missing data for disagreement about child-rearing and parental quarrelling.

We then examined to what extent data was missing for variables according to levels of child antisocial behaviour (Tables not shown). We undertook this analysis as we wanted to examine how far particular parenting variables, for example, were more likely to be missing for children who were reported as having high antisocial behaviour as opposed to no or low antisocial behaviour. We examined the mother's report on child antisocial behaviour as there was no missing data for this variable. We found that there was no association between any missing variable and the level of the child's antisocial behaviour as reported by the mother. Therefore, mothers with children who were rated as having high antisocial behaviour were no more likely to refuse to answer questions on the booklet than mothers with children rated as no or low antisocial behaviour.

As stated above, we explicitly coded the expressed emotion data and the data about disagreement about childrearing so that we could maximise our sample. We report, here, whether the inclusion of the missing data provided any meaningful results. Examining the tables in Chapter 6, on how far parenting behaviour and maternal attitude

are associated with child antisocial behaviour, shows that for the weighted all mother sample there is no significant association between the missing data and child antisocial behaviour. A child with missing expressed emotion data was as likely to be in any of the four antisocial behaviour categories. However, this was not the case when we examined the data according to the mother's age at first birth. Younger mothers with missing expressed emotion data were substantially more likely than older mothers with missing expressed emotion data to have a child with high antisocial behaviour (Tables 6.2-6.5). These results were confirmed by the teacher report on child antisocial behaviour (Appendix 8 & 9). We suggest, therefore, that these results reflect the higher likelihood of a younger mother having a child with high antisocial behaviour. However, examining the tables for disagreement about childrearing (Table 7.2) showed some interesting results. Both the weighted all mother sample, and the younger mother sample, who had missing data for disagreement about childrearing, were more likely to have a child with high antisocial behaviour than those mothers who had been rated as having high disagreement about childrearing. Older mothers with missing data were less likely than the high disagreement about childrearing group to have a child with high antisocial behaviour. The teacher report partially confirmed these results and all groups who had missing data for disagreement about childrearing were as likely to have a child with high antisocial behaviour as the high disagreement about child-rearing group (Appendix 12). It is important when interpreting these results to remember that the missing data for disagreement about childrearing consisted almost entirely of mothers who did not have a partner at the time of the interview. As a result our finding that families with missing data about disagreement about child-rearing were as likely as the

high disagreement about childrearing group to have children with higher levels of antisocial behaviour may reflect either disagreements which had occurred prior to the mother becoming a single parent, or may be associated with the mother being a single parent and more likely to have a child with high antisocial behaviour.

4.6: RESEARCH METHODOLOGY

STATA 7.0 was the statistical package of choice as the E-Risk data-set used both clustered and weighted data and STATA deals appropriately with both of these forms of data. Data was analysed using weights and according to sample group.

4.6.1: Sample Groups

Due to the high-risk stratification strategy used by the E -Risk study, the sample could be seen as consisting of three sample groups: a weighted 'all' mother sample which could be deemed representative of the general population, a sample of mothers aged less than or equal to 20 termed the high risk sample by the E-Risk study, and a sample of mothers aged more than or equal to 21 (Table 4.6). We analyse the data in terms of these three sample groups, and results will be shown for all three sample groups (weighted 'all' mother sample; younger mothers age at first birth \leq 20; older mothers age at first birth \geq 21).

Table 4.6: Sample Groups

Sample Groups	Freq	Percentage
Weighted Sample	2230	100.00%
Mothers Age=<20 Sample	1122	50.31%
Mothers Age=>21 Sample	1108	49.69%

4.6.2: Sample Weights

The E-Risk use of a high-stratification strategy to target younger mothers resulted in younger mothers being disproportionately represented in this study. The E-Risk study, therefore, supplied weights to ensure that the findings represented unbiased estimates of the general population. The weighting makes the proportion of young mothers in the sample equivalent to the overall proportion in the population (Bennett et al, 1996). It is based on the inverse of the selection probability, appropriately adjusted for the selection procedure applied for the older mothers. A further adjustment is applied to make the overall sample proportion of young mothers (>50 per cent) equivalent to the overall proportion in the population of 28 per cent (estimates derived from the General Household Survey (Bennett, Jarvis, Rowland, Singleton, & Haselden, 1996, together with information from Birth Statistics 1996). A final re-scaling was also applied to ensure that the weighted sample size was equivalent to the actual sample size.

4.6.3: Violation of the Assumption of Independence

Statistical analyses of data about the study children (e.g., measures of child-specific parenting and measures of the twins' behaviour) was complicated by the fact that the twin study contained two children from each family, leading to non-independent observations. Thus the data on the study children were analysed using standard regression techniques but with all tests based on the sandwich or Huber/White variance estimator (Gould & Sribney, 1999), a method which is available in the statistical package STATA 7.0 (StataCorp, 2001). Application of this technique allows for the relaxation of the assumption of independence of observations by penalising estimated standard errors and therefore accounting for the dependence in the data due to analysing sets of twins. All observations were, therefore, clustered on the family identification number (the mother), and standard errors were robust.

4.6.4: Categorical Data

The E-Risk data-set contained a mixture of both categorical and continuous variables. All continuous variables were subsequently categorised into groups (see Chapter 5 for details). There were two reasons for doing so. Firstly, the dependent variable child antisocial behaviour did not follow a normal distribution as many of the children were rated as having very low antisocial behaviour by the mother (Figure 4.2), and teacher (Appendix 20). Secondly, almost half of the variables were already categorical. For

ease of analysis, and to overcome the skewed distributions all variables were made categorical.

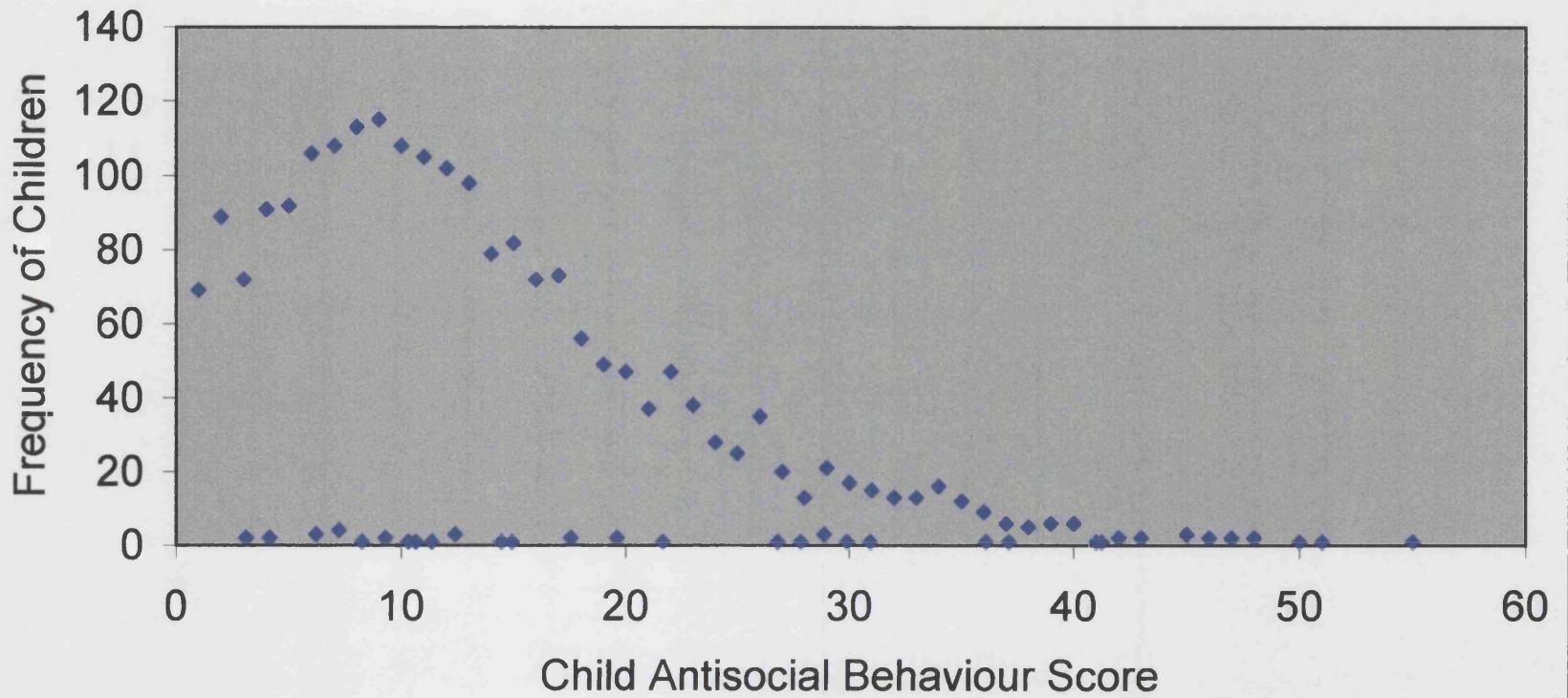
4.6.5: Statistical Analysis

Ordered logistic regression was the main statistical method used as the dependent variable, child antisocial behaviour, contained four ordered categories: no or low antisocial behaviour, moderate antisocial behaviour, moderate to high antisocial behaviour and high antisocial behaviour. However, when variables such as family structure became the dependent variable multinomial logistic regression was used instead as family structure contained five non-ordered categories.

4.6.6.: Causal or Correlational?

As can be seen from the research questions in Chapter 3 we are interested in examining how far particular risk factors are associated with child antisocial behaviour as reported by the mother and teacher. Due to our data-set being cross-sectional, as opposed to longitudinal, we are unable to examine causal relationships between these risk factors and child antisocial behaviour. This is important to bear in mind when interpreting our results. For example, we may suggest that there are associations between frequency of smacking and child antisocial behaviour. However, this finding could be interpreted in a

FIGURE 2.2: Distribution of Child Antisocial Behaviour Scores as reported by the Mother



number of ways. First, it could suggest that frequent smacking may have caused the child's antisocial behaviour. Second, it could also suggest that some children may be smacked more frequently as a result of their own antisocial behaviour (Bell 1968). We are, therefore, unable in this thesis to untangle which came first, the smacking or the child's antisocial behaviour, and therefore our results should be interpreted as associations as opposed to a causal model.

4.7: ETHICS

All research must follow particular ethical guidelines and the E-Risk Study was subject to and passed the Maudsley Ethics Committee. There are a number of ethical issues which relate to research. These include:

- The principle of voluntary participation which requires that people are not coerced into participating in research. All participants in the E-Risk Study were made aware that their participation was voluntary and that they could refuse to take part, refuse to answer any questions or ask us to leave during the interview.
- The requirement of informed consent⁶⁶. All participants in the E-Risk study were fully informed and understood the purpose of the home-visit. Both written and verbal information was given about the aims of the study and the content of the booklets. Time was allowed for parents to ask questions and written consent was taken and a copy of the consent left with the parents.

⁶⁶ Informed Consent means that research participants are fully informed and fully understand the procedures and risks involved in research and give their consent to participate.

- Ethical standards also require that researchers do not put participants in a situation where they might be at risk of harm as a result of their participation. Harm can be defined as both physical and psychological. The E-Risk study had a policy of not asking questions about domestic violence if the partner was present. This information was then collected at a later date by telephone when the partner was not present. Domestic violence information was not collected if the researcher felt that by doing so she/he would put the mother/father at risk.
- Research must guarantee confidentiality. All information about E-Risk families and their data was confidential except in cases of Child Protection. Families were made aware of this condition at the beginning of the interview. The E-Risk Study's Intervention Policy differentiated between actively and passively intervening. The study actively intervened in study members lives, when in the course of data collection for research, evidence emerged that indicated a potential threat to life or significant risk to a child in that family. In cases like these, the Research Worker would immediately contact the Project Coordinator who would confer with Social Services, and if needed, in a crisis situation, the police. The best interests of the children in the E-Risk Study were always paramount.
- Increasingly, researchers have had to deal with the ethical issue of a person's right to service. In cases where the E-Risk family asked for help or the researcher was concerned about the welfare of the family advice was sought by the Principal Investigator, and reported back to the family. The Study, therefore, passively intervened in Study Members lives by facilitating Study Members to seek help and advice.

4.8: TWINS DESIGNS

The E-Risk study uses a twin design and five issues arise, other than the lack of independence between observations, with the use of such a design. Firstly, there is the assessment of zygosity. The E-Risk study uses both DNA and questionnaires to assess zygosity. This, however, is not relevant to our analysis as restrictions were placed on our use of the data-set which made us unable to utilise the twin design of the study. Secondly, there are concerns about sampling. The majority of twin studies in the past have tended to be based on volunteer samples. Findings suggest that, in general, monozygotic twins and concordant pairs⁶⁷ are more likely to volunteer to participate in studies. Thus, population based studies are preferred. More generally, however, many twin samples have included relatively few individuals from very high risk environments. The E-Risk study, however, overcomes these problems by the use of a high risk stratification sample. Thirdly, there is a concern about generalisability. For example, minor congenital anomalies, premature births, low birthweight, and perinatal mortality are more common in multiple pregnancies (Vogel & Motulsky 1986; Martin, Boomsma & Machin 1997; Bryan 1993). However, in relation to psychopathology, there is no evidence that twins are any different to singletons (Rutter 2000). There is, however, a concern, that twins may provide different challenges in parenting than singletons and various studies have shown that the two differ in patterns of parent-child interactions (Rutter and Redshaw 1991). However, as all the families in the E-Risk have twins this to

⁶⁷ The term concordant pairs refers to the level of similarity of the twins, for example, eye colour, and hair colour. It can also refer to behaviour so that twins could be concordant for antisocial behaviour in that both twins are antisocial.

some extent is controlled for. Furthermore, if parenting problems are more common in twins this will allow a more thorough examination of which aspect of parenting impacts on child behavioural outcomes. It is important to note, however, that it is not the case that families having twins differ in some important respect from those having singletons, for example parental personality and therefore, this cannot explain the increased likelihood of parenting problems (Rutter 2000). Fourth, it may be possible that having twins provides more of a parenting challenge to younger mothers as opposed to older mothers. This is an important point and results should be interpreted with this in mind. The fifth issue concerns the 'equal environments assumption'. This specifies that the difference within monozygotic pairs with respect to experiences and upbringing are roughly comparable to those found within dizygotic pairs. Empirical studies have shown, however, that the experiences of monozygotic pairs are very much more similar than those of dizygotic pairs (Rutter et al 2000), and if this is the case the equal environments assumption which is the basis of the twin design is violated. Identical twins, therefore, may be more similar not because they share the same genes but because people treat them more similarly, for example dressing them the same. If this is so, the violation of the equal environments assumption will have serious consequences for those who use twin designs to examine genetic effects, but this is not a serious problem for the research reported in this thesis which is not examining the effects of genetics.

CHAPTER 5

VARIABLES AND SAMPLE DEMOGRAPHICS

The following sections provide information on the variables used in the analysis in more detail. There will be an explanation of how the variable was created by the E-Risk study team, and the subsequent recoding for this analysis.

5.1: CHILD ANTISOCIAL BEHAVIOUR

Children's externalising problems were assessed by the Child Behaviour Checklist (CBCL) (Achenbach 1991) completed by the mother and the teacher. The Child Behaviour Checklist (CBCL) was designed to address the problem of defining child behaviour problems empirically and is designed to assess in a standardised format the behavioural problems and social competencies of children as reported by parents and/or teachers. The checklists ask a variety of questions about the children's behaviour in the last six months which are answered 'yes/a little/no'. Achenbach's questionnaires are well-validated and reliable and previous studies have found the CBCL to have a test-retest value of between 0.95 to 1.00, an inter-rater reliability value of between 0.93 to 0.96 and an internal consistency value of between 0.78 to 0.97 (Achenbach 1991)

5.1.1: Mother's Report on Child Antisocial Behaviour

30 items were used from the aggression and delinquency subscales of the Checklist for the mother report and the highest possible score that a child could receive was 60. 'No' to a question was coded as 0, 'sometimes' as 1, and 'yes' as 2. The component variables which made up the measure for the mother's report on child antisocial behaviour are as follows:

Component variables: Aggression Subscale.

Argues a lot, bragging, boasting, cruel or nasty to other people, bullying or threatening people, demands a lot of attention, destroys his\her own things, destroys things belonging to his\her family or others, disobedient at home, disobedient at school, easily jealous, gets in many fights, physically attacks people, screams a lot, showing off or clowning around, stubborn or bad tempered, sudden changes in mood, mood swings, talks too much, teases a lot, temper tantrums or hot temper, unusually loud.

Items from Delinquency Subscale

Doesn't seem to feel guilty after misbehaving, hangs around with others who get in trouble, lying or cheating, prefers being with older children, runs away from home, sets fires, steals at home, steals outside the home, swearing or bad language, skips school, truants, or runs away from school, vandalism, damaging public property.

Out of a possible score of 60, the distribution of scores in this study ranged from 0-55 for child antisocial behaviour as rated by the mother. The mean was 12.88, SD 9.14. The sample was positively skewed (1.01) and kurtosis was 3.9. The top ten percent of the sample had a score of 26 or over and the bottom ten per cent a score of 0. The variable was continuous, but was categorised into quartiles for our analysis to form the following 4 groups: no or low antisocial behaviour, moderate antisocial behaviour, moderately high antisocial behaviour, high antisocial behaviour. The internal consistency⁶⁸ reliabilities were .89 (alpha).

Table 5.1: Descriptive Statistics for the Mother's Report on Child Antisocial Behaviour

Child ASB	Freq.	Percent	Cum.
No/low ASB	591	26.50	26.50
Mod ASB	561	25.16	51.66
Mod/high ASB	570	25.56	77.22
High ASB	508	22.78	100.00
Total	2230	100.00	

5.1.2: Teacher's Report on Child Antisocial Behaviour

34 items were used from the aggression and delinquency subscales of the Checklist for the teacher report and the highest possible score that a child could receive was 68. 'No' to a question was coded as 0, 'sometimes' as 1, and 'yes' as 2. The component variables

⁶⁸ Internal consistency refers to the extent to which a measure is consistent with itself. Internal consistency estimates reliability by grouping together questions in a questionnaire that measure the same concept, and then running a correlation between them to determine whether the instrument is reliably measuring the same concept.

which made up the measure for the teachers report on child antisocial behaviour are as follows:

Component variables: Aggression Subscale.

Argues a lot, defiant, talks back to staff, bragging, boasting, cruel or nasty to other people, bullying or threatening people, demands a lot of attention, destroys his/her own things, destroys things belonging to others, disturbs other pupils, disobedient at school, easily jealous, gets in many fights, physically attacks people, disrupts class discipline, screams a lot, showing off or clowning around, explosive and unpredictable behaviour, demands must be met immediately, easily frustrated, stubborn or bad tempered, sudden changes in mood, talks too much, teases a lot, temper tantrums or hot temper, unusually loud, threatens people,

Items from Delinquency Subscale

Doesn't seem to feel guilty after misbehaving, hangs around with others who get in trouble, lying or cheating, prefers being with older children, steals, swearing or bad language, skips school, truants, or runs away from school, vandalism, damaging public property, tardy to school or class.

Out of a possible score of 68, the distribution of scores in this study ranged from 0-59 for child antisocial behaviour as rated by the teacher. The mean was 5.41, SD 8.10. The sample was positively skewed (2.5) and kurtosis was 10.95. The top ten percent of the

sample had a score of 15 or over and the bottom ten per cent a score of 0. The variable was continuous, but was categorised into quartiles for our analysis to form the following 4 groups: no or low antisocial behaviour, moderate antisocial behaviour, moderately high antisocial behaviour, high antisocial behaviour. The internal consistency reliabilities were .89 (alpha).

Table 5.2: Descriptive Statistics for the Teacher's Report on Child Antisocial Behaviour

Child ASB	Freq.	Percent	Cum.
No/low ASB	639	30.62	30.62
Mod ASB	454	21.75	52.37
Mod/high ASB	488	23.38	75.75
High ASB	506	24.25	100.00
Total	2087	100.00	

5.1.3: Correlations Mother/Teacher Report on Child Antisocial Behaviour

The correlation between the mother's report on child antisocial behaviour and that of the teacher was 0.3. This is a low to moderate correlation, however it was significant. Examining the table below shows that mothers rated their children as having higher antisocial behaviour than the teachers. This could be for a number of reasons. First, teachers may not see behaviour, which mothers see as antisocial, as antisocial. Second, children may behave differently at school and at home. Third, mothers who are depressed, for example, may see behaviour more negatively. For the purposes of this research we concentrate on the mother's report on antisocial behaviour to answer our

research questions. We realise that by doing this we are open to criticisms regarding the reliability and validity of using only the mother's report. Therefore, we carried out statistical analysis with both the mother and teacher reports but concentrate our analysis on the mother report, which we report in the main text. Statistical tables for the teacher reports can be found in Appendix 8-19 and for our more important findings we discuss results using both the mother and teacher reports of antisocial behaviour. However, for the majority of our research questions we use only the mother report on child antisocial behaviour. There are a number of reasons why this approach was taken. Firstly, a full discussion of both the results of the mother and teacher reports on antisocial behaviour took the thesis over its word limit. Secondly, the use of both the mother and teacher reports on antisocial behaviour made the thesis difficult to follow and confusing for the reader. Third, the results for the mother and teacher reports on child antisocial behaviour were similar and differed mainly in the strength of the effect.

Table 5.3: Sample Statistics for Mother and Teacher Reports

Child ASB	Mean	SD	Kurtosis	Skewness
Mother Report	12.88	9.14	3.99	1.01
Teacher Report	5.41	8.10	10.95	2.52

5.2: PARENTAL ANTISOCIAL BEHAVIOUR

Both women and men were interviewed using Achenbach (1997) questionnaires. Both questionnaires were modified with the permission of the Achenbach to gather data for the E-Risk Study about lifetime behaviour. Mother's reported their own histories of

antisocial behaviour using the Young Adult Self Report (Achenbach 1997), and also reported on the biological father's antisocial behaviour using the Young Adult Behaviour Checklist (Achenbach 1997). One additional item 'Have you stolen anything, for example shoplifting or forging a cheque was taken from the Diagnostic Interview Schedule (DIS-IV; Robins et al., 1995) in order to capture those symptoms of Conduct Disorder and Antisocial Personality Disorder that are not tapped by the Young Adult Self-Report.

The E-Risk study obtained data from the mother about both her own antisocial behaviour and that of the biological father's. This approach was used because fathers with behavioural problems are often absent or reluctant to participate in research (Jaffee et al 2001). Furthermore, research has also shown that the response rate for participation from fathers is often low (Braver & Bay 1992). As it is important to study the entire family in relation to child antisocial behaviour (Rutter et al 1997), three options are available if the father is absent or reluctant to take part. One option is to not collect data about these fathers, another is not to collect the data from any of the fathers and lastly researchers could rely on the mother to provide the information about the father. The E-Risk study chose the latter option. However, there are problems associated with validity and reliability in interviewing the mother about her own antisocial behaviour as well as interviewing her about the father's antisocial behaviour. For example, the mother may exaggerate the father's antisocial behaviour if there has been an acrimonious break-up, or she may also underestimate it and her own antisocial behaviour by not disclosing the more serious acts. Furthermore, the mother may actually not know about the father's antisocial behaviour. Therefore, for reasons of reliability and validity the E-Risk Study

contacted and interviewed a small sample of fathers about their antisocial behaviour. A random 20 per cent of fathers (N = 80) were selected for contact; 67 of the fathers (84 per cent) could be contacted and agreed to participate in a 30-minute telephone interview which covered a range of topics dealing with their children's development and their own behaviour, and which was conducted 5-8 months after the home visit by a different interviewer who had no previous contact with the family (Caspi et al 2001). An equal number of contacted fathers were from the older mother group (51 per cent) and young mothers group (49 per cent). The mother had reported about their children's fathers using questions taken from the Adult Behaviour Checklist; men answered parallel questions during the phone interview using the Adult Self-Report. The cross-informant correlations for the father's antisocial behaviour ranged from 0.48 to 0.55 and Caspi (2001) argues that there was strong 'relative' agreement between the mother's report about the biological father and the biological father's self-report. However, he also argued that there was poor 'absolute' agreement in that compared to the biological father the mother reported fewer of the father's antisocial behaviours. This could be for a number of reasons including not knowing about antisocial behaviour which had occurred before they had met. Caspi et al (2001) conclude that woman can provide 'a reliable index of men's relative standing in a distribution and can be used in research about their children's fathers' (p915), however, their reports should not be used for clinical diagnosis of men's antisocial behaviour⁶⁹.

⁶⁹ Findings from the limited number of studies which have compared mother and father reports have found that they are correlated, but that mothers tended to report lower levels than fathers did (Smock & Manning

5.2.1: Mother's Antisocial Behaviour

The questionnaire contained 20 items which assessed both aggression and delinquency. The highest possible score was 40, and each question was coded 'no' =0, 'sometimes' =1, 'yes' =2.

Items from Aggression Subscale - Mother

Have you argued a lot, have you been mean to others, have you not gotten along with other people, have you got on badly with your family, have you felt that others are out to get you, have you gotten into many fights, have you physically attacked anyone, have you screamed or yelled a lot, have you been stubborn, sullen or irritable, have your moods or feelings changed suddenly, have you had a hot temper, have you threatened to hurt anyone.

Component variables: Delinquency Subscale - Mother

Have you stolen anything, for example shoplifting or forging a cheque, have you destroyed things that belong to others, have you broken rules at school, work or elsewhere, have you hung around with others who got into trouble, have you lied or cheated, have you done things that have caused you trouble with the law, have you drunk too much alcohol or got drunk, have you used drugs (not alcohol) for other than medical reasons.

1997; Seltzer Brandreth 1994).

The mother scores ranged from 0-40. The mean was 8.88, SD 7.11. The mother scores were positively skewed 1.2 and kurtosis was 4.26. The top ten per cent of the sample had a score of 19 or more, whilst the bottom ten per cent had a score of 0. This variable was continuous but was categorised into quartiles for our analysis: no/low antisocial behaviour, moderate antisocial behaviour, moderately high antisocial behaviour, and high antisocial behaviour. Internal reliability for this item is .8707 (alpha)

Table 5.4: Descriptive Statistics for the Mother’s Antisocial Behaviour (ASB)

Mother ASB	Freq.	Percent	Cum.
No/low ASB	704	31.63	31.63
Moderate ASB	466	20.93	52.56
Mod/high ASB	516	23.18	75.74
High ASB	540	24.26	100.00
Total	2226	100.00	

5.2.2: Biological Father’s Antisocial Behaviour

The questionnaire contained 20 items relating to the biological fathers antisocial behaviour and the highest possible score was 40. Each question was coded 'no' =0, 'sometimes' =1, 'yes' =2.

Items from Aggression Subscale - Father

Argues a lot, cruelty, bullying or meanness to others, doesn't get along with other people, gets along badly with family, feels others are out to get him, gets in many fights,

physically attacked people, screams or yells a lot, stubborn, sullen or irritable, sudden changes in mood or feelings, temper tantrums or hot temper, threatened people.

Component variables: Items from Delinquency Subscale - Father

Has he stolen anything, for example shoplifting or forging a cheque, destroys things belonging to other people, breaks rules at school, work, or elsewhere, hangs around with people who get in trouble, lying or cheating, done things that may cause trouble with the law, drinks too much alcohol or gets drunk, uses drugs (not alcohol) for non-medical purposes.

The scores for the biological father's antisocial behaviour ranged from 0-40. The mean was 8.15, SD 8.6. The distribution was positively skewed 1.55 and kurtosis was 4.7. The top ten per cent of the sample had scores of 22 and over, whilst the bottom ten percent had scores of 0. This variable was continuous but was categorised into quartiles: no/low antisocial behaviour, moderate antisocial behaviour, moderately high antisocial behaviour, and high antisocial behaviour. Internal reliability for this item is .9070 (alpha).

Table 5.5: Descriptive Statistics for the Biological Father's Antisocial Behaviour (All Fathers)

Biological Fathers ASB	Freq.	Percent	Cum.
No/low ASB	674	30.42	30.42
Moderate ASB	520	23.46	53.88
Mod/high ASB	488	22.02	75.90
High ASB	534	24.10	100.00
Total	2216	100.00	

Table 5.3 shows the data for all the biological fathers' antisocial behaviour. This includes biological fathers regardless of whether they had ever lived with the family. For our later analysis we only included biological fathers who had always lived with the family (Table 5.4). The rationale was that we wanted to examine the effect of the biological father's antisocial behaviour on parenting behaviour and attitude, and thus were particularly interested in those father's who had lived with the family for a substantial part of the child's life.

Table 5.6: Descriptive Statistics for the Biological Father's Antisocial Behaviour (Resident All of the Twin's Life)

Biological Fathers ASB	Freq.	Percent	Cum.
No/low ASB	640	38.65	38.65
Moderate ASB	468	28.26	66.91
Mod/high ASB	366	22.10	89.01
High ASB	182	10.99	100.00
Total	1656	100.00	

Examining the differences between the mothers and biological fathers antisocial behaviour show at first glance that both mothers and biological fathers had similar averages of antisocial behaviour (Table 5.5). However, a t-test showed that there was a significant difference between these two means ($t=4.3$, $p=0.000$). Examining a correlation matrix also showed that both the mothers and fathers antisocial behaviour were moderately correlated with one another (0.5) and previous research on assortative mating has shown that people with similar levels of antisocial behaviour, for example, are more likely to form relationships with one another (Krueger et al 1998).

Table 5.7: Comparison of Summary Statistics for Mother and Father's Antisocial Behaviour

Variable	Obs	Mean	Std. Dev.	Min	Max
Mother	2226	8.895257	7.114251	0	40
Father	2216	8.150072	8.629028	0	40

$t=4.3$, $p=0.00$

5.3: PARENTING

The parenting interview includes both open-ended and structured questions about parenting each of the twins. The interview was *child-specific*, focussing in turn on *each* twin *separately*. Parenting behaviour, i.e. parenting discipline was assessed by a questionnaire which focused on frequency of smacking. Parenting attitude was assessed by Expressed Emotion audiotapes which yielded the following four variables: maternal warmth, maternal negativity, maternal positive comments and maternal negative comments

5.3.1: Frequency of Smacking

Frequency of smacking was assessed using a semi-structured interview about discipline strategies used in the house by both parents (Dodge, Pettit & Bates 1994; Dodge, Bates & Pettit 1990). This asked about incidents of misbehaviour in the children from two different time periods. Firstly, when the children were aged from birth up until aged four, and secondly, in the last year from age 4-5 years old. The mother was asked how often both parents smacked (daily, weekly, monthly, occasionally, rarely or never). The variable represents the average of the two frequencies for the two time periods age 1-4 years and within the last year (see questions below). However, there are problems associated with reliability and validity in asking one informant, i.e. the mother, about how often both parents smack. It could be possible that an informant is more likely to underestimate the amount they smack and give a more socially acceptable answer. Furthermore, it could be that the mother, for example, underestimates or over-estimates the amount her partner smacks the children; she may also not actually know how often they are smacked by her partner.

How often twin smacked- last yr.?

How often twin smacked - aged 1-4 yrs?

Thus, the E-Risk study coded the variable as follows: 0 = smacking, 1 = rarely smacked, 2 = occasionally smacked, 3 = nearly monthly, 4 = nearly weekly, and 5 = smacked daily. The highest score possible was 5, and the scores ranged from 0-5.

The variable was recoded into 4 categories for this analysis.

0 = no smacking

1 = rarely/occasionally smacked

2 = monthly smacked

3 = weekly/daily smacked

Table 5.8: Descriptive Statistics for Frequency of Smacking

Frequency of Smacking	Freq.	Percent	Cum.
No Smacking	290	13.12	13.12
Rarely/occ	1425	64.48	77.60
Monthly	269	12.17	89.77
Weekly/daily	226	10.23	100.00
Total	2210	100.00	

5.3.2: Expressed Emotion

The study of emotional attitudes (e.g., criticism, warmth) directed at specific family members has a long history in adult psychiatry (Brown & Rutter, 1966). Expressed emotion, measured by the Camberwell Family Interview (CFI; Vaughn & Leff, 1976) and the Five-Minute Speech Sample (FFMS) (Magana et al., 1986), predicts relapse among schizophrenics and prognosis in several other adult psychiatric disorders (Butzlaff & Hooley, 1998). In more recent years, the study of expressed emotion has been extended downward to focus on childhood disorders, using child-appropriate versions of the CFI and FMSS protocols (Vaughn, 1989). Mothers of children with behavioural disorders have been observed to express more critical comments, fewer positive comments, and less warmth to their children than control parents (e.g., Asarnow et al.,

1994; Asarnow, Tompson, Woo, & Cantwell, 2001; Hibbs et al., 1991; Hirshfeld et al., 1997; Peris & Baker, 2000; Richman, Stevenson, & Graham, 1982; Scott & Campbell, 2001; Schwartz et al., 1990; Stubbe et al., 1993; Vostanis & Nicholls, 1995; Vostanis, Nicholls, & Harrington, 1994).

The E-Risk study used a 5- minute speech sample to elicit expressed emotion. Trained interviewers asked the caregiver to describe each of their children ("For the next 5 minutes, I would like you to describe [child] to me, what is [child] like?"). The mother was encouraged to talk freely with few interruptions. However, if the mother found this difficult, the interviewer could aid the mother with a series of semi-structured probes, such as "in what ways would you like [child] to be different". Interviews about each twin were separated in time by approximately 90 minutes. All interviews were audiotaped with the mother's consent. Data for expressed emotion were missing for 11 per cent of the sample, due to the fact that some mothers did not wish to be audio-taped or to technical problems with the tape.

Two trained raters coded the audiotapes according to guidelines set down by the FMSS scoring manual as modified for use with preschool children (Barnes-McGuire & Earls, 1994; Daley, Sonuga-Barke, & Thompson, 2003). The raters underwent 2 weeks of training about coding expressed emotion. I was one of the two trained raters and it took approximately 18 months to code all of the tapes. Inter-rater reliability was established by having the raters individually code audiotapes describing 40 children. The same rater coded both twins in the same family. The rater was blind to all other Study data. The

inter-rater reliabilities are given below. We examined 4 variables coded from the 5-minute speech sample: Number of maternal positive comments, number of maternal negative comments, maternal negativity, and maternal warmth (see Appendix 3 for coding sheet). It was decided to examine these four factors independently of each other rather than combine the negativity/negative comments and warmth/positive comments together. This was undertaken for the following two reasons. First, we suggest that the number of maternal positive comments, for example, which are made about a child does not equate with maternal warmth. A mother, for example, could list a number of positive comments about their child without any feeling of warmth being shown. This, we believe, could also be the case with the number of maternal negative comments as a mother could list a number of negative comments about the child but this did not reflect general negativity or dissatisfaction with that child. For example, a mother with a child with severe autism may be rated as having made a list of negative comments about the child, for example, she spits etc. However, the mother could also be rated as showing high maternal warmth, and low maternal negativity in that she understands why the child does this, and does not relate this bad behaviour to the child themselves. Second, it could be argued that both maternal negative comments and positive comments may be used as an indicator of content whilst maternal negativity and maternal warmth may be used to measure tone. Therefore, we are able to examine to what extent it is maternal tone as opposed to the content of what is said which is the most significant in relation to child antisocial behaviour. For these two reasons we analyse these four maternal attitude factors independently of each other.

5.3.2.1: Maternal Positive Comments

Raters counted all positive comments made during the interview about the child. A positive comment was defined primarily by its content. However, since almost any comment can be given a variety of meanings by its tone, tone of voice was taken into account in determining whether a comment was positive or not. For example, "she's so nice" could be said sarcastically. Tone alone never defined a positive remark, but was used to clarify the content of the comment, for example, the statement "he's so forgetful" may be said with warmth and tenderness but would not be considered a positive comment. The majority of positive comments coded were descriptive words indicating the possession of a positive trait; e.g. intelligent, loving, mature, sociable, creative, helpful. However, some mothers with poor vocabulary tended to talk around these issues rather than relying on single descriptors, for example, the statement "he always wants to wash up and things, to do things for you", was coded as a positive comment. In addition, qualities that the mother clearly valued were coded as positive comments, for example, "she always does what she is told" or "she always listens". Statements which did not qualify as positive comments included comments phrased in the negative such as "she's not as bad as the other one", qualified compliments such as "he's pretty/quite good", and statements made in the past tense. The inter-rater agreement rate was $r = .63$. The test-retest was $.43$ ⁷⁰.

⁷⁰ Test-retest measures external reliability of an item. This involves testing the same participant twice over a period of time with the same test. Similar scores would suggest that the test has external reliability.

Number of positive comments was a continuous variable. The mean was 2.73, SD 1.71. The range was from 0-13. The sample was positively skewed 0.84, and kurtosis was 4.41. The bottom ten per cent of the distribution had a score of 0 positive comments whilst the top ten per cent had a score of 5 positive comments or more.

The variable was divided into quartiles for our analysis: no/low positive comments, moderate positive comments, moderate/high positive comments, and high positive comments.

Table 5.9: Descriptive Statistics for the Number of Maternal Positive Comments

Positive comments	Freq.	Percent	Cum.
Missing Data	224	10.13	10.13
No/low positives	489	21.91	32.03
Moderate positives	512	22.94	54.97
Mod/high positives	426	19.09	74.06
High positives	579	25.94	100.00
Total	2230	100.00	

5.3.2.2: Maternal Negative Comments

Negative comments were coded by a frequency count of all such comments made about the child during the interview. For example, “she is horrible”, “I don’t like her”, “she spits at me”, “she is so lazy”, and “she is so clumsy”. To be coded as a negative comment both the tone and content had to be negative. This was to ensure that coders did not penalise mothers for their turn of phrase. For example, comments such as “she is a right little madam” or “he is a right little sod” were often said with affection and

warmth. These would not have been coded as negative comments unless the tone in which they were said was also negative. Comments such as "she is not a good sleeper" or "he is a fussy eater" although not truly negative comments in themselves, were coded as negative comments when the mother repeatedly defined her child, throughout the interview, in terms of their inability to sleep or their fussiness over food. The inter-rater agreement rate was $r = .90$. The test-retest reliability was $.55$.

The number of negative comments was a continuous variable. The mean was 1.6, SD 1.4. The range was from 0-11. The sample was positively skewed 1.42 and kurtosis was 4.4. The bottom ten per cent of the distribution had a score of 0 negative comments whilst the top ten percent had a score of 4 or more negative comments.

The variable was categorised into 4 groups: no negative comments, up to 2 negative comments, 3 negative comments and 4 or more negative comments.

Table 5.10: Descriptive Statistics for the Number of Maternal Negative Comments (1)

Negative comments	Freq.	Percent	Cum.
Missing Data	226	10.22	10.22
No neg comments	332	14.87	25.09
Upto 2 neg comments	1295	58.02	83.11
3 neg comments	220	9.86	92.97
> 4 neg comments	157	7.03	100.00
Total	2230	100.00	

However, when the sample was divided according to the mother's age at first birth, some of the cells had no observations when cross tabulated with another variable. The variable was therefore recoded as follows:

Table 5.11: Descriptive Statistics for the Number of Maternal Negative Comments (2)

Negative comments	Freq.	Percent	Cum.
Missing Data	226	10.22	10.22
No neg comments	332	14.87	25.09
Upto 2 neg comments	1295	58.02	83.11
More than 3 neg comments	377	16.89	100.00
Total	2230	100.00	

5.3.2.3: Maternal Negativity (EE)

The rating was made on a six-point scale. (0) - No negativity was coded when the mother made no negative comments about the child. (1) - A little negativity was coded when the mother made one minor criticism such as "she can be a bully" or "she is lazy". (2) - Some negativity was coded when the mother made two criticisms which were stronger in tone than the former rating such as "she is a bully". The next three codes were considered present when maternal negativity was generalised to the child himself/herself rather than against particular behaviours or attributes. These ratings were used when the tone of the interview were primarily negative. (3) - Negative - some dissatisfaction was coded when the mother repeatedly mentioned one or two particular traits of the child which she did not like and wished to change. For example, "she is not very clever, it would help if she tried more, but she doesn't, I wish she would try more, like her sister". This was the general theme of the EE interview with the mother, and thus was rated as a 3. (4) - Negative - makes disparaging remarks and finds fault with the child was coded when the mother had very little good to say about her child, and found fault in almost everything he/she did. For example, "She always does it, I have never met such a clumsy child, we

think oh here we go again she's done it again, it drives me mad, why doesn't she look where she is going, I'm constantly having to look out for her, she's constantly breaking things.....sometimes I think she is stupid, she never learns". (5) - Resentful and hostile was coded when the mother gave the impression that she actively disliked the child. The interview would take the form of a stream of negativity against the child with no positive comments. For example, "I wish I had never had her..... she is a cow, I hate her". The inter-rater agreement rate was $r = .84$. The test-retest reliability was $.59$.

Negativity was a continuous variable which ranged from 0-5. The mean was 1.5, SD 0.9. The distribution was positively skewed 0.66, and kurtosis was 3.5. The bottom ten per cent had a score of zero negativity towards their child, whilst the top ten per cent had a score of 3 (high negativity).

The variable was recoded as follows for this research:

0 = no/low negativity (groups 0-1 above)

1 = some negativity (group 2)

2 = high negativity (groups 3-5 above)

Table 5.12: Descriptive Statistics for Maternal Negativity

Negativity	Freq.	Percent	Cum.
Missing Data	232	10.48	10.48
No/low negativity	1083	48.52	59.01
Some negativity	630	28.23	87.23
High negativity	285	12.77	100.00
Total	2230	100.00	

5.3.2.4: Maternal Warmth (EE)

The scale refers only to the warmth expressed in the interview about the child. The warmth of the respondent's personality was not a consideration nor was warmth shown towards others. Positive comments in themselves were not viewed as evidence of warmth nor were stereotyped endearments. Warmth was assessed by the tone of voice, spontaneity, for example, "she is so funny, - the other day she made up a song and she was dancing and singing in the garden... the song was about everything... a butterfly flew by and that ended up in the song...it was so funny", sympathy, and/or empathy towards the child, for example, "I feel really sorry for her, it is not her faultI worry for her". Warmth was coded on a six point scale. (5) - High warmth and (4) - Moderately high warmth were coded when there was a definite and clear cut tonal warmth, enthusiasm, interest in and enjoyment of the child. For example "she is a delight, she is so happy, I love taking her out, she is my ray of sunshine" would have been coded as a 5. (3) - Moderate warmth was coded when there was definite understanding, sympathy and concern but only limited warmth of tone. For example, "I worried about her when she went to school, I thought she may have difficulty in mixing and I felt sorry for her". (2) - Some warmth was coded when there was a detached rather clinical approach with little or no warmth of tone, but moderate understanding, sympathy and concern. For example, an interview along the lines of "she's alright" with little substantiation would have received this rating. (1) - Very little warmth was rated when there was only a slight amount of understanding, sympathy or concern or enthusiasm about or interest in the person. (0) - No warmth was reserved for respondents who showed a complete absence

of the qualities of warmth as defined. The inter-rater agreement rate was $r = .90$. The test-retest reliability was .67.

Warmth was a continuous variable with scores ranging from 0-5. The mean was 3.2, SD 0.9. The sample was negatively skewed -0.3, and kurtosis was 2.9. The bottom ten per cent had a score of 0 (no warmth) whilst the top ten per cent had a score of 4 (high warmth) The median was 3 (moderate warmth).

The variable was recoded as follows for this analysis:

0 = low warmth (no warmth/little warmth/some warmth)

1 = moderate warmth (moderate warmth)

2 = high warmth (moderately high warmth/high warmth)

Table 5.13: Descriptive Statistics for Maternal Warmth

Warmth	Freq.	Percent	Cum.
Missing Data	230	10.39	10.39
Low warmth	408	18.28	28.67
Moderate warmth	739	33.11	61.78
High warmth	853	38.22	100.00
Total	2230	100.00	

5.3.2.5 How correlated are the Parenting Variables?

As would be expected the parenting variables were correlated with one another (Appendix 4). For example, both maternal negativity and negative comments were moderately to highly correlated (0.6) whilst negativity and warmth were moderately negatively correlated (-0.5). Although the parenting variables were correlated with one another, the aim of this research was to examine which parenting variables are the most important risk factors for child antisocial behaviour. For this reason, the parenting variables were kept distinct and were not combined to form clusters of similar variables.

5.4: FAMILY STRUCTURE

The Life History Calendar (LHC) (Caspi et al 1996b) was used by the E-Risk study to collect data on family structure over the twin's life course. The LHC is a visual method of recalling retrospective life events, their timing and duration (see Appendix 5). The LHC was used to gather information about numerous different events in the family's life. The LHC is a large grid in which rows refer to different trajectories (e.g. residential partners) and columns denote time units (months) during which particular events may have occurred (e.g. moving residences or changing partners). Mothers reported about events beginning with the twin's birth date and up to the interview date. Mothers were asked whether they were married or had a partner at the time of the twin children's' birth. Details about life-course dynamics were recorded including the percentage of time (in months) from the children's birth to age 5 that both biological parents were resident in the

home with their children, whether the mother had been a lone parent since the children's birth, and whether a live-in partner (other than the twins biological father) had lived with them, and for how long. Information about divorces, widowhoods, separations and marriages were also collected. Finally, their marital status at the end of the LHC (the interview date) was recorded.

The data set contained LHC variables for 1113 (2226 children) of the 1115 families (2230 children). 2 LHC's (4 children) were missing. Table 5.12 below shows the proportion of one parent to two parent families in the dataset. As can be seen over 80 per cent of children lived in two parent families.

Table 5.14: Descriptive Statistics for One Parent vs. Two Parent Families

Family Structure	Freq.	Percent	Cum.
One parent	404	18.15	18.15
Two parent	1822	81.85	100.00
Total	2226	100.00	

Using the information collected by the E-Risk study we created 5 family structure groupings which took into account the dynamic nature of family structure (Table 5.13). However, our initial aim was to formulate as many groups as possible so as to reflect the complicated nature of family structure. We intended to examine family structure at the child's birth up to the date of the interview taking into account all transitions in between. This resulted in us having nine family structure categories. However, this was

problematic in that there were too few observations in some cells for meaningful analysis especially when the family structure variable was cross-tabulated with another variable. Although our aim was to retain as much information as possible, it was decided that fewer family structure categories would provide more meaningful results. We, therefore, examined family structure at two points, the marital status at the beginning of the Life History Calendar (LHC) and that at the end. However, it could be argued that this still ignored the dynamic nature of family structure, as it did not tell us anything about what happened in between these two points. For example, a mother may have been cohabiting with the biological father at the beginning of the LHC, she may then have separated from the biological father for the majority of the children's life and repartnered again with the biological father by the end of the LHC. However, if we only examine family structure at two points (at the beginning and end of the LHC) this mother would appear to have been always cohabiting with the biological father, when in fact she had repartnered with the biological father after a lengthy separation. However, the need to retain as much information as possible needed to be balanced with the need for meaningful analysis. We, therefore, created as many family structure groupings as was feasibly possible without compromising the results. After viewing the frequency tables it was decided to drop widows from the analysis as there were too few observations for them to be a separate category ($n=3$), but on the other hand they did not fit into any of the other categories in a meaningful way and would have confused issues. This resulted in a final data set of 1110 family (2220 child) observations. The final family structure variable was coded as follows: Group 1 was the currently separated or divorced group. Group 2 consisted of stepfamilies. Group 3 were the always married group and this group

consisted of mothers who were, in the main, always married to the biological father. However, two families were always married but not to the biological father. The twins were the result of an affair and donor sperm. However, both parents had always been married to one another, and thus they were placed in this group. Group 4 consisted of mothers who were always cohabiting with the biological father and Group 5 consisted of mothers who were always ‘solo’ and who had never had a resident partner. Table 5.13 below shows that more than half of the sample had always been married during the twin’s life, and that 75 per cent had always been partnered during the twin’s life, i.e. the sum of the always cohabiting and always married groups.

Table 5.15: Descriptive Statistics for Family Structure (5 Groups)

Family structure	Freq.	Percent	Cum.
Separated/divorced	306	13.78	13.78
Stepfamily	162	7.30	21.08
Always married	1298	58.47	79.55
Cohabiting biological father	362	16.31	95.86
Always solo	92	4.14	100.00
Total	2220	100.00	

5.5: MARITAL CONFLICT

Marital conflict was examined using three variables, disagreement about child-rearing, quarrelling between partners, and domestic violence. These marital conflict variables were moderately correlated with one another (see Appendix 6). The three marital conflict variables were combined to create an additional variable to measure marital conflict *per se*.

5.5.1: Disagreement about Child-Rearing

Disagreement about child-rearing relates to disagreement between the mother and her current partner, not necessarily the twins' biological father. Previous research has shown that differing value systems about child-rearing (Vaughn, Block, & Block, 1988) and disagreements between parents about disciplinary strategies (Henry et al., 1993) are related to children's psychosocial adjustment problems. Parental disagreement about child-rearing was assessed by 3 items.

We disagree about what to do when the children are naughty
My partner and I agree completely about how to raise the children (reverse coded).
I worry that my partner is too strict with the children.

The highest possible score was 6, and each question was coded 'no' = 0, 'sometimes' = 1, 'yes' = 2. Item 2 above was reverse coded. One hundred and fifty two mothers did not have a current partner, and were explicitly coded as missing data and used in the analysis. The distribution of scores ranged from 0-6, the mean was 1.9, SD 1.5. The sample was positively skewed (0.6) and kurtosis was 2.8. The top ten per cent of the sample had a score of 4 and the bottom ten per cent a score of 0. This variable was continuous but was categorised into three groups: no/low disagreement, moderate disagreement and high disagreement.

Table 5.16: Descriptive Statistics for Disagreement About Child-Rearing

Disagreement about Childrearing	Freq.	Percent	Cum.
Missing Data	304	13.68	13.68
No/low disagreement	850	38.25	51.94
Moderate disagreement	446	20.07	72.01
High disagreement	622	27.99	100.00
Total	2222	100.00	

5.5.2: Parental Quarrelling

This variable relates to all resident partners the mother had during the life span of the twins.

Have you cursed or sworn at a partner?

Has a partner cursed or sworn at you?

Have you ordered your partner around?

Has a partner ordered you around?

Have you insulted or shamed a partner in front of others?

Has a partner insulted or shamed you in front of others?

The highest possible score was 12, and each question was coded 'no' = 0, 'sometimes' = 1, 'yes' = 2. Mothers who had never had a partner during the last five years were excluded from analysis as they were unable to answer the question. The distribution ranged from 0-12. The mean was 5.20, SD 3.2. The sample was positively skewed 0.04 and kurtosis was 2.2. The top ten per cent of the sample had a score of 10, whilst the bottom ten per cent had a score of 0. This variable was continuous but was categorised into 3 groups: no/low quarrelling, moderate quarrelling and high quarrelling.

Table 5.17: Descriptive Statistics for Parental Quarrelling

Quarrelling	Freq.	Percent	Cum.
No/low quarrel	986	45.02	45.02
Moderate quarrel	532	24.30	69.32
High quarrel	672	30.68	100.00
Total	2190	100.00	

5.5.3: Domestic Violence

Domestic violence was assessed using the 'Conflict Tactics Scale' (Straus 1979). This variable examines domestic violence with any partner over the past five years since the twins were born. The mother was asked about her violence towards partners, and their violence towards her.

Has a partner pushed, grabbed, or shoved you? Have you done this to a partner?

Has a partner slapped you? Have you done this to a partner?

Has a partner shaken you? Have you done this to a partner?

Has a partner thrown an object at you that could hurt you? Have you done this to a partner?

Has a partner kicked, bitten, or hit you with a fist? Have you done this to a partner?

Has a partner hit or tried to hit you with something? Have you done this to a partner?

Has a partner physically twisted your arm? Have you done this to a partner?

Has a partner thrown or tried to throw you bodily? Have you done this to a partner?

Has a partner beaten you up (multiple blows)? Have you done this to a partner?

Has a partner choked or strangled you? Have you done this to a partner?

Has a partner threatened you with a knife or gun? Have you done this to a partner?

Has a partner used a knife or gun on you? Have you done this to a partner?

The highest possible score was 40, and the items were coded 'no' = 0, 'sometimes' =1, 'yes' = 2. Mothers who had never had a partner during this time were excluded from the analysis.

The scores ranged from 0-40, and the mean was 3.5, SD 6.4. The distribution was positively skewed 2.4 and kurtosis was 9.0. The top ten per cent has scores of 12 or more whilst the bottom ten per cent = 0. This variable was continuous but was categorised into 3 groups: no/low domestic violence, moderate domestic violence, high domestic violence. Internal reliability for this item is .8925 (alpha).

Table 5.18: Descriptive Statistics for Domestic Violence

Domestic violence	Freq.	Percent	Cum.
No/low domestic violence	1252	57.17	57.17
Moderate domestic violence	286	13.06	70.23
High domestic violence	652	29.77	100.00
Total	2190	100.00	

5.5.4: Marital Conflict

The three variables for marital conflict were then combined into one variable coded as 0 = 'no marital conflict', 1 = 'moderate marital conflict' and 2 = 'high marital conflict'. This was undertaken as we wished to examine how far parenting practices mediate the effect of marital conflict *per se* upon child antisocial behaviour outcomes.

Table 5.19: Descriptive Statistics for Combined Marital Conflict Variable

Marital conflict	Freq.	Percent	Cum.
No/low marital conflict	832	37.31	37.31
Moderate marital conflict	740	33.18	70.49
High marital conflict	658	29.51	100.00
Total	2230	100.00	

5.6: POVERTY

Poverty was measured by the following variables: mothers and partner's unemployment, income, number of benefits, car ownership, and housing tenure. A combined measure of all poverty variables was also created. All of the poverty variables were moderately to highly correlated with one another (see Appendix 7).

5.6.1: Unemployment

This variable was taken from the Life History Calendar (described above). Mother's were asked about their employment, the biological father's unemployment and any partner's unemployment since the children were born. The E-Risk study defined unemployment as not working, and therefore, mothers who did not return to work after maternity leave would have been placed in the unemployed category. The partner's and biological fathers' unemployment histories were combined together so as to have a variable which measured all resident partner's unemployment.

The variables measure months unemployed since the children were born. The variables were continuous with scores ranging from 0-73 for the mother and 0-71 for the partner. The mean for the mother was 38.47, SD 22.8 (skewness -0.4, kurtosis 1.5) and for the partner was 6.0, SD 14.8 (skewness 2.7, kurtosis 9.3). The top ten per cent of the mother sample had been unemployed for 61 months or more whilst the bottom ten percent had been unemployed for zero months. For the partner the top ten percent had been unemployed for 25 months or more and the bottom ten percent for zero months. The sample was categorised into 3 groups.

Table 5.20: Descriptive Statistics for Mothers Unemployment

Mothers unemployment	Freq.	Percent	Cum.
No/low unemployment	760	34.20	34.20
Moderate unemployment	850	38.26	72.46
High unemployment	612	27.54	100.00
Total	2222	100.00	

Table 5.21: Descriptive Statistics for All Partners Unemployment

Male unemployment	Freq.	Percent	Cum.
No unemployment	1672	75.25	75.25
<= 12 months unemployment	222	9.99	85.2
>=13 months unemployment	328	14.76	100.00
Total	2222	100.00	

5.6.2: Income

Income was collected for 15 categories ranging from £4-5,999 up to £41,000 or more.

As we wanted to estimate a combined index of poverty the variable was recoded into 3 groups so that the variable would fit into a combined poverty variable coded as 0, 1, and 2.

Table 5.22: Descriptive Statistics for Income

Income	Freq.	Percent	Cum.
£20,000 or more	1112	52.16	52.16
£15-19,999	330	15.48	67.64
Less than £14,999	690	32.36	100.00
Total	2132	100.00	

5.6.3: Number of Benefits Claimed in the Last Year

Mothers were asked how many benefits from the following list they had claimed in the last year.

Working Family Tax Credit, Income Support, Council Tax Benefit, Housing Benefit, Unemployment Benefit.

The variable was continuous as it was a count of the frequency of the benefits claimed and scores ranged from 0-5. The mean was 1.1, SD 1.5. The sample was positively skewed 1.0, and kurtosis was 2.7. The top ten per cent of the sample claimed 4 benefits or more whilst the bottom ten per cent claimed no benefits. The variable was categorised into 3 groups for this research:

Table 5.23: Descriptive Statistics for Number of Benefits Claimed

Number of benefits	Freq.	Percent	Cum.
No benefits	1260	56.55	56.55
1 benefit	322	14.46	71.01
2 or more benefits	646	28.99	100.00
Total	2228	100.00	

5.6.4: Housing Tenure

Mothers were asked the following questions: Does your household own or rent this accommodation? Do you own it outright or on a mortgage? Do you rent from one of the following; Local authority (LA)/Council, Housing Association or Housing Trust? The variable was recoded into 3 groups for this research.

Table 5.24: Descriptive Statistics for Housing Tenure

Housing tenure	Freq.	Percent	Cum.
Own house	1376	61.93	61.93
Rent private	130	5.85	67.78
Rent LA	716	32.22	100.00
Total	2222	100.00	

5.6.5: Car ownership

Families were asked does your "Household own or have access to a car or van?" The variable was categorised into three groups:

Table 5.25: Descriptive Statistics for Car Ownership

Car Ownership	Freq.	Percent	Cum.
Neither	292	13.09	13.09
Access	116	5.21	18.30
Own	1822	81.70	100.00
Total	2230	100.00	

5.6.6: Poverty

All the poverty indicators were combined together to form a poverty variable which was then categorised into quartiles.

Table 5.26: Descriptive Statistics for Combined Poverty Measure

Poverty	Freq.	Percent	Cum.
No/low Poverty	734	32.91	32.91
Mod Poverty	470	21.08	53.99
Mod/High Poverty	508	22.78	76.77
High Poverty	18	23.23	100.00
Total	2230	100.00	

5.7 VALIDITY AND RELIABILITY OF VARIABLES

There are important issues which need to be discussed concerning the reliability and validity of the E-Risk variables. By validity we mean whether the variable is actually measuring what it is meant to be measuring. Whilst reliability is concerned with how far the variable is consistent and results in responses which could be replicated on a different

day or by a different interviewer. Reliability and validity are important as they are concerned with the quality of measurement and therefore the quality of results.

The first concern with the E-Risk data is the over reliance on the mother's report as the sole source of data on the mother's own antisocial behaviour and to some extent, the biological fathers antisocial behaviour. Furthermore, the mother is also the sole informant on the data about smacking, quarrelling, disagreement about childrearing and domestic violence. This raises questions on the validity of this data as the mother could exaggerate or underestimate any or all of her responses to these variables due to a number of reasons including prestige bias, embarrassment or an acrimonious break-up with her partner (and hence wanting to portray him in a bad way) (Coley & Morris 2001). Furthermore, the mother may not actually know the true extent to which the child is smacked by her partner or her partner's antisocial behaviour. It is important, therefore, in research to get information from more than one informant as multi-source composites may yield the most reliable information (Bank & Patterson 1992). Examining the correlation 0.3, for example, between the mother's report on child antisocial behaviour and the teacher's report on antisocial behaviour shows that there is low to moderate correlation between their reports. Further analysis indicates that one informant (the mother) reports more antisocial behaviour in the same child than another informant (the teacher). This as discussed previously could be for a number of reasons. However, although there are questions about the validity of some of the measures in the E-Risk Study, it is not always easy to get cross informant consensus on certain subjects. For example, in a household which has severe domestic violence, it may be ethically and

morally unsound to ask the perpetrator of the violence whether they hit their partner when they know that you are asking their partner the same questions in the other room. It is important, therefore, that all research takes into account the possible effects of questions which are asked and what may occur as a result of the questions being asked once the interviewer leaves the house. Furthermore, it is unlikely that the response to the question would be valid as the perpetrator may be unlikely to admit to the interviewer that they hit their partner. However, ideally cross-informant consensus would have been preferred.

There are also problems with the validity of the smacking variable and the variable which assessed the mother's own antisocial behaviour, and ideally cross-informant reliability with the partner of the mother could have been undertaken for these variables at a later date via the telephone or by postal questionnaire (for most of the families the father was absent or at work when the interview took place).

Reliability can be assessed by three measures. Firstly, internal consistency. Internal consistency estimates reliability by grouping together questions in a questionnaire that measure the same concept, and then running a correlation between them to determine whether the instrument is reliably measuring the same concept. A correlation of between +0.7-+0.9 would suggest good internal consistency and the internal consistency of the E-Risk measures range from between .87 to .90. Secondly, consistency over time using a test-retest technique. Test-retest reliability takes a sample of participants who are tested twice using the same test, with a time period in between each test. Results from the tests

are correlated and a good test should yield a high correlation of between +0.7-+0.9. Test-retest reliability was carried out on a sub-sample of Expressed Emotion interviews and are as follows: Maternal Positive Comments = .43, Maternal Negative Comments = 0.55, Maternal Negativity = 0.59 and Maternal Warmth = 0.67. These are not high reliabilities for test-retest, and this could be for a number of reasons. First, it may be possible that a mother's Expressed Emotion may be dependent upon external factors such as her own mood and stress levels which may vary at different time periods. As a result the mother could speak differently about her child at two time periods depending on her own mood or stress levels. Second, a mother's Expressed Emotion may be dependent upon how her child is behaving on the day of the interview or prior to the interview. As a result a mother's Expressed Emotion may differ on two interview dates if her child's behaviour is different as well. Third, it may be that test-retest for Expressed Emotion is only reliable for cases in which the EE is extreme – high warm/low negativity or high negativity /low warmth. More neutral and less severe cases may be affected by the mother's mood and child's behaviour, and it could be the case that less severe EE cases were in the test-retest. Unfortunately, we cannot test this hypothesis. However, it is evident that the test-retest reliability correlations for Expressed Emotion are only moderate. Thirdly, inter-rater reliability. This is where two raters code the same test and their results statistically compared. The inter-rater reliability correlations for Expressed Emotion in the E-Risk Study are moderate to high – Maternal Positive Comments = .63, Maternal Negative Comments = .90, Maternal Negativity = .84 and Maternal Warmth = .90 – and these correlations suggest that the two raters had good agreement when coding the variables.

5.8: SAMPLE VARIABLES ACCORDING TO THE MOTHER'S AGE AT

FIRST BIRTH

Given that our analysis will compare and contrast younger and older mothers, Table 5.27 provides information on the variables used in this thesis according to the mother's age at first birth.

Table 5.27 shows that younger mothers were much more likely to report high antisocial behaviour in their children, in themselves and in the biological father. Furthermore, younger mothers were also more likely to report more parenting problems. They were more likely to be rated as having high maternal negativity, and low maternal warmth towards their children as well as being rated as having made higher negative comments, and less positive comments about their child. There was little difference between younger and older mothers according to the frequency that they smacked their children.

Younger mothers were also more likely than older mothers to report higher levels of marital conflict including disagreement about child rearing, quarrelling and domestic violence. Furthermore, younger mothers were more likely than older mothers to be a one parent family, to be separated/divorced, to be in a stepfamily, always 'solo' or cohabiting. Older mothers were almost twice as likely as younger mothers to have been always married since the twin's birth.

In relation to poverty, younger mothers were much more likely than older mothers to report higher levels of poverty. Younger mothers were at least six times as likely as older mothers to have high poverty levels as measured by the cumulative poverty index. Furthermore, they were much more likely than older mothers to live in Local Authority housing, to have no car, to claim benefits, to have an income of less than £14,999 per annum, and to have higher unemployment.

In sum, younger mothers were not only more likely to have children with higher antisocial behaviour, but were more likely to be antisocial themselves. They were more likely to live in poverty, have higher marital conflict, be less likely to be always married, and have more parenting problems. On the whole younger mothers were, therefore, more likely to face the multiple risk factors that have been identified as factors in the origins of child antisocial behaviour. This preliminary analysis, lends strong support to our reasoning for examining the sample according to three sample groups: a representative 'all' mother sample, a younger mother's sample and an older mother's sample.

Table 5.27: Sample Descriptives according to the Mother's Age at First Birth

	Mothers age >=21 (Older)	Mothers age <=20 (Younger)
<u>CHILD ANTISOCIAL BEHAVIOUR</u>		
Mothers report on Child Antisocial Behaviour		
No/Low ASB	33.03 (366)	20.05 (225)
Mod ASB	29.06 (322)	21.30 (239)
Mod High ASB	23.83 (264)	27.27 (306)
High ASB	14.08 (156)	31.38 (352)

(Chi2 124.55, df3***)

	Mothers age >=21 (Older)	Mothers age <=20 (Younger)
Teachers report on Child Antisocial Behaviour		
No/Low ASB	34.29 (358)	26.94 (281)
Mod ASB	23.56 (246)	19.94 (208)
Mod High ASB	21.65 (226)	25.12 (262)
High ASB	20.50 (214)	28.00 (292)

(Chi2 27.13, df3,***)

PARENTAL ANTISOCIAL BEHAVIOUR

Mother's Antisocial Behaviour

Low/No ASB	41.70 (462)	21.65 (242)
Mod ASB	22.38 (248)	19.50 (218)
Mod/High ASB	19.86 (220)	26.47 (296)
High ASB	16.06 (178)	32.38 (362)

(Chi2 144.52, df 3***)

Biological Father's Antisocial Behaviour (All fathers)

No/Low ASB	41.92 (462)	19.03 (212)
Mod ASB	24.86 (274)	22.08 (246)
Mod/High ASB	20.86 (230)	23.16 (258)
High ASB	12.34 (136)	35.73 (398)

(Chi2 224.33, df3***)

Biological Father's ASB (Always lived with twins)

No/Low ASB	46.17 (446)	28.12 (194)
Mod ASB	26.71 (258)	30.43 (210)
Mod/High ASB	20.70 (200)	24.06 (166)
High ASB	6.42 (62)	17.39 (120)

(Chi2 82.06, df 3***)

PARENTING

Frequency of Smacking

No Smacking	12.02 (132)	14.21 (158)
Rarely/Occasionally	65.48 (719)	63.49 (706)
Monthly	12.58 (138)	11.78 (131)
Weekly/Daily	9.92 (109)	10.52 (117)

(Chi2 0.50, df3)

Maternal Negativity

Missing Data	10.56 (116)	10.43 (116)
No/Little negativity	57.76 (640)	39.48 (443)
Some Negativity	23.83 (264)	32.53 (365)
High Negativity	7.85 (87)	17.56 (197)

(Chi2 69.42, df2***)

Maternal Negative Comments

Missing Data	10.29 (113)	10.16 (113)
--------------	-------------	-------------

	Mothers age >=21 (Older)	Mothers age <=20 (Younger)
No neg comments	18.86 (209)	10.96 (123)
1-2 Neg comments	60.92 (675)	55.17 (619)
3 or more Neg comments	9.93 (110)	23.71 (266)

(Chi2 36.73, df 2***)

Maternal Warmth

Missing Data	10.56 (116)	10.25 (114)
Low warmth	13.72 (152)	22.82 (256)
Mod warmth	32.58 (361)	33.51 (376)
High warmth	43.14 (478)	33.42 (375)

(Chi2 70.95, df 2***)

Maternal Positive Comments

Missing Data	10.20 (112)	10.07 (112)
No/Low pos comments	18.77 (208)	24.96 (280)
Mod pos comments	22.56 (250)	23.35 (262)
Mod/High pos comments	20.76 (230)	17.47 (196)
High pos comments	27.71 (307)	24.15 (271)

(Chi2 51.39, df 3***)

MARITAL CONFLICT

Disagreement about Child-Rearing

Missing Data	8.12 (90)	19.21 (214)
No/Low Disagreement	43.50 (482)	33.03 (368)
Mod Disagreement	19.86 (220)	20.29 (226)
High Disagreement	28.52 (316)	27.47 (306)

(Chi2 8.30, df 2*)

Quarrelling

No/Low Quarrelling	54.28 (596)	35.71 (390)
Mod Quarrelling	22.95 (252)	25.64 (280)
High Quarrelling	22.77 (250)	38.65 (422)

(Chi2 88.52, df 2***)

Domestic Violence

No/Low Domestic Violence	69.58 (764)	44.69 (488)
Mod Domestic Violence	12.57 (138)	13.55 (148)
High Domestic Violence	17.85 (196)	41.76 (456)

(Chi2 164.85, df 2***)

Combined Index of Marital Conflict

No/low Marital Conflict	44.95 (498)	29.22 (334)
Mod Marital Conflict	34.84 (386)	31.55 (354)
High Marital Conflict	20.21 (224)	39.23 (434)

(Chi2 100.64, df 2***)

	Mothers age >=21 (Older)	Mothers age <=20 (Younger)
--	--------------------------	----------------------------

FAMILY STRUCTURE

One vs. Two Parent Family

One Parent Family	10.13 (112)	26.07 (292)
Two Parent Family	89.87 (994)	73.93 (828)

(Chi2 95.23, df 1***)

Family Structure - Five Groupings

Always Married	77.13 (850)	40.07 (448)
Separated/Divorced	7.99 (88)	19.50 (218)
Stepfamily	2.54 (28)	11.99 (134)
Always Solo	1.81 (20)	6.44 (72)
Cohabiting	10.53 (116)	22.00 (246)

(Chi2 325.06, df4***)

POVERTY

Mothers Unemployment/Inactivity

No/Low Unemployment	43.76 (484)	24.73 (276)
Mod Unemployment	34.53 (382)	41.94 (468)
High Unemployment	21.71 (240)	33.33 (372)

(Chi2 94.05, df2***)

Partners Unemployment

No Unemployment	84.96 (938)	65.65 (734)
Less than aYear	7.61 (84)	12.34 (138)
More than a Year	7.43 (82)	22.01 (246)

(Chi2 119.94, df2***)

Number of Benefits

No Benefits	79.24 (878)	34.11 (382)
1 Benefits	10.47 (116)	18.39 (206)
2 or more Benefits	10.29 (114)	47.50 (532)

(Chi2 490.82, df2***)

Income

Less than £14,999	12.88 (136)	51.49 (554)
£15-19,999	12.88 (136)	18.03 (194)
More than £20,000	74.24 (784)	30.48 (328)

(Chi2 450.26, df2***)

Less than £9,999	4.92 (52)	31.04 (334)
£10-14,999	7.95 (84)	20.45 (220)
£15-19,999	12.88 (136)	18.03 (194)
£20-28,999	20.83 (220)	19.52 (210)

	Mothers age >=21 (Older)	Mothers age <=20 (Younger)
More than £29,000	53.42 (564)	10.96 (118)
(Chi2 568.81, df4***)		
Car Ownership		
Own Car	93.14 (1032)	70.41 (790)
Access Car	2.89 (32)	7.49 (84)
No Car	3.97 (44)	22.10 (248)
(Chi2 197.89, df2***)		
Housing Tenure		
Own House	86.08 (952)	37.99 (424)
Private Rent	4.88 (54)	6.81 (76)
Local Authority Housing	9.04 (100)	55.20 (616)
(Chi2 578.16, df2***)		
Combined Index of Poverty		
No/Low Poverty	53.07 (588)	13.01 (146)
Moderate Poverty	26.71 (296)	15.51 (174)
Mod/High Poverty	13.36 (148)	32.09 (360)
High Social Poverty	6.86 (76)	39.39 (442)
(Chi2 664.84, df3***)		

CHAPTER 6
PARENTING PRACTICES AND CHILD ANTISOCIAL
BEHAVIOUR

6.1: INTRODUCTION

Both Government policy and previous research have identified parenting practices as critical in early onset of antisocial behaviour (Home Office 2004, Webster Stratton 2001, Pugh, De'Ath, & Smith 1994). However, although parenting practices have been identified as a risk factor, there is little agreement between policy-makers and theorists as to which element of parenting constitutes the main risk. For example, some previous studies have identified parental discipline and control as the main risk factors and have shown that harsh inconsistent discipline, 'disrupted discipline', and lack of parental supervision are associated with externalising behavioural problems in children, and later adult antisocial behaviour (Patterson, DeGarmo, & Knutson 2000; Sampson & Laub 1993, Webster Stratton 2001) whilst other studies have indicated that it is the quality of the relationship between the parent and child which is crucial in the development of antisocial behaviour (Graham and Bowling 1995). There is, therefore, little agreement about which aspect of parenting constitutes the main risk for child antisocial behaviour. Furthermore, it has also been suggested that much of the previous research into parenting practices and child antisocial behaviour has tended to combine these two parenting⁷¹ elements together and thus it is even more difficult to examine which aspect of parenting

⁷¹ Two aspects of parenting as identified by Baumrind 1971 are warmth and control.

carries the most risk (see Rutter, Giller & Hagell 1998 for a discussion). We aim in this chapter, therefore, to untangle parenting as a risk factor and examine the relative contribution of its component parts to antisocial behaviour at age 5 years.

It has also been suggested that it is important in studies of parenting to examine how far negative parenting interactions as opposed to other forms of interaction, for example, a lack of positive interactions, are implicated in the origins of antisocial behaviour (Rutter, Giller & Hagell 1998). Coercion Theory, for example, hypothesises that antisocial behaviour in young children may be the result of negative communication and negative family management practices within the home (Patterson 1982). Parents, who have conduct disordered children, Patterson suggests, are not only more likely to use physical punishment but are also more likely to be highly critical of their children. As a result, Patterson suggests that it is the presence of negative parenting interactions as opposed to other forms of interaction which make it more likely that a child will develop behavioural problems. Our analysis, therefore, will also examine whether the presence of negative parenting interactions and behaviour is associated with increases in child behavioural problems.

Lastly, we have suggested in Chapter 2, that previous research has tended to concentrate on parenting practices as risk factors for child antisocial behaviour, however, it may also be the case that parenting practices act in a protective fashion buffering the effects on children of other risk factors. It is therefore, important not only to dissect parenting practices as a risk factor for child antisocial behaviour but also to examine how far

parenting practices have a protective influence in relation to behavioural outcomes. We, therefore, examine how far parental discipline, as measured by our variable frequency of smacking, acts in a moderating fashion buffering the effects of other parenting risk factors, such a lack of maternal warmth on child antisocial behaviour.

6.2: RESEARCH QUESTIONS

In the following sections we examine the relative contribution of each of our parenting factors to child antisocial behaviour outcomes at age 5 years old. We examine, therefore, the contribution of maternal attitude which corresponds to Baumrind's warmth/responsiveness category and parenting behaviour which corresponds to control/discipline. Parenting discipline was measured by our frequency of smacking variable and maternal attitude was assessed by Expressed Emotion audiotapes which yielded the following four variables: maternal warmth, maternal negativity, maternal positive comments and maternal negative comments. Child antisocial behaviour was measured by the mother report (tables shown in this chapter) and the teacher report (Appendix 8 and 9). As a result of examining the relative contribution of our variables to child antisocial behaviour at age 5 years old we assess whether disruptive behaviour in children is a result of a lack of positive interactions⁷² as opposed to an increase in negative interactions⁷³ (Patterson 1982).

⁷² For example, low warmth or low positive comments.

⁷³ For example, high negativity, frequent smacking, and a high number of negative comments made about the child.

This research will add to previous research on parenting and child antisocial behaviour for the following reasons. First, the data-set focuses on children aged 5 years old. Research has shown that interventions in early childhood are more cost-effective and successful than those that target older children (Danziger & Waldfogel 2000), and therefore, an analysis of the parenting risks which are more pertinent for young children is important. Second, the E-Risk data set oversampled younger mothers and therefore, we are able to examine parenting practices and child antisocial behaviour according to three sample groups: a representative group of 'all' mothers, a younger mother group and an older mother group. This enables us to examine how far the effects of parenting behaviour and attitude on child antisocial behaviour differ according to the mother's age at first childbirth. Third, we concentrate on the frequency that a child is smacked as opposed to whether a child is smacked or not. Previous research on smacking, however, has tended to concentrate on the latter, and therefore frequent smackers have been placed in the same group as those who smack rarely. This may have important implications for research on smacking and child antisocial behaviour as it may be the case that it is not smacking *per se* that is important but instead how often a child is smacked. Fourth, we are able to assess whether negative interactions within the family home are more important in terms of antisocial behaviour than other forms of interaction. Our research questions are:

1a) How far is maternal warmth, maternal negativity, maternal positive comments, maternal negative comments and frequency of smacking associated with childhood

antisocial behavioural outcomes and which specific dimension of parenting carries the most risk?

1b) Are negative parenting interactions more important in the development of child antisocial behaviour than a lack of positive interactions?

1c) To what extent does frequency of smacking act as a moderating protective factor for children who are a risk of low levels of maternal warmth and high levels of maternal negativity?

6.3: RESULTS

In section 6.3.1, we examine each of our five parenting variables individually against the dependent variable child antisocial behaviour as measured by the mother. The tables for the teacher report on child antisocial behaviour can be found in Appendix 8 and 9. In section 6.3.2 we enter all the parenting variables into an ordered logistic model, and examine the changes in log likelihood ratios for backwards elimination of each parenting variable from the model. This allows us to examine which parenting variables should be kept in the final model, and allows us to estimate the relative contributions of our five parenting variables. Once we have selected our parsimonious model we examine the predicted probabilities for the selected parenting variables. In section 6.3.3, we examine how far frequency of smacking, acts as a protective factor moderating the effects of maternal warmth and negativity on child antisocial behaviour outcomes.

6.3.1: Bivariate Analysis: Parental Behaviour and Maternal Attitude as a Risk Factor for Child Antisocial Behaviour.

The section below documents the bivariate descriptive statistics for each of the five parenting variables and child antisocial behaviour as reported by the mother. The teacher reports are found in Appendix 8 and 9. However, although we have examined both the mother and teacher reports on child antisocial behaviour we concentrate our discussion primarily on the mothers report on child antisocial behaviour. Furthermore, the older mother sample was very similar to the weighted 'all' mother sample and therefore to avoid repetition we display the bivariate statistics for all three sample groups in tables below but concentrate our discussion upon the younger mother sample and the 'all' mother sample.

6.3.1.1: Frequency of Smacking

There was a moderate to strong positive association between the frequency that a child was smacked and child antisocial behaviour as measured by both the mother (Table 6.1) and the teacher (Appendix 8). Examining the 'all' mother sample (i.e. the weighted sample of all mothers) showed that children who were smacked on a monthly or weekly/daily basis were more likely to have high antisocial behaviour whilst children who were smacked less frequently, for example rarely smacked or who were not smacked at all, were more likely to have no or low antisocial behaviour. There were, however, differences between younger and older mothers. Younger mothers who

smacked their child on a weekly or daily basis were much more likely than older mothers to have a child with higher antisocial behaviour (Table 6.1 for mother report and Appendix 9 for teacher report). Furthermore, even when younger mothers smacked rarely they were as likely to have a child in any of the four antisocial behaviour categories. This was not the case for older mothers who were more likely to have a child with no antisocial behaviour. Younger mothers, on the other hand, were only more likely to have a child with low antisocial behaviour if they did not smack at all. Therefore, it appears that once younger mothers begin to smack their child, even if they smack rarely, this is associated with increases in child antisocial behaviour. This is not the case for older mothers. Furthermore, our findings show that as smacking becomes more frequent, for example on a weekly or daily basis, this is associated with substantial increases in child antisocial behaviour for the children of younger mothers.

Table 6.1: Descriptive Statistics for Child Antisocial Behaviour (ASB) (Mother's Report) according to Frequency of Smacking

Child ASB	Sample	Frequency of Smacking			
		No Smacking	Rarely/Occ	Monthly	Weekly/Daily
Low/No ASB	Weighted ¹	43.27 (121)	32.82 (467)	14.28 (39)	9.52 (21)
	Age<=20 ²	36.08 (57)	21.25 (150)	8.40 (11)	3.42 (4)
	Age>=21 ³	46.21 (61)	36.86 (265)	16.67 (23)	11.93 (13)
Moderate ASB	Weighted	26.68 (74)	27.20 (387)	26.50 (72)	25.23 (57)
	Age<=20	25.32 (40)	22.80 (161)	16.03 (21)	11.97 (14)
	Age>=21	27.27 (36)	28.93 (208)	30.43 (42)	30.28 (33)
Moderately/High ASB	Weighted	19.61 (55)	24.38 (347)	30.15 (81)	26.55 (60)
	Age<=20	21.51 (34)	28.75 (203)	27.48 (36)	27.35 (32)
	Age>=21	18.94 (25)	22.81 (164)	31.88 (44)	26.60 (29)
High ASB	Weighted	10.44 (279)	15.60 (222)	29.07 (79)	38.70 (87)
	Age<=20	17.09 (27)	27.20 (192)	48.09 (63)	57.26 (67)
	Age>=21	7.58 (10)	11.40 (82)	21.01 (29)	31.19(34)

¹ Weighted 'All' Mother Sample = Chi2 167.34, df 9, p=0.000, Gamma = 0.35

² Age<=20 (Younger) = Chi2 107.73, df 9, p=0.000, Gamma = 0.40

³ Age>=21 (Older) = Chi2 77.02, df 9, p=0.000, Gamma = 0.33

6.3.1.2: Maternal Positive Comments

There was a weak negative association between the number of maternal positive comments made about the child and the child's antisocial behaviour (Table 6.2 for mother report and Appendix 8 for teacher report). For the 'all' mother weighted sample as the number of maternal positive comments made about the child increased so antisocial behaviour decreased. Furthermore, a lack of maternal positive comments was associated with higher levels of antisocial behaviour in children.

Examining the sample according to the mother's age at first birth showed that there was a weak negative association between the number of positive comments made about the child and the child's antisocial behaviour (Table 6.2 for mother report and Appendix 9 for teacher report). However, although there was a weak association, examining the bivariate tables provides some interesting results. Younger mothers who were rated as having made no positive comments about their child, were more likely than the older mothers, to have a child with high antisocial behaviour (Table 6.2 and Appendix 9). However, even when younger mothers were rated as having made a high number of positive comments about their child, they were twice as likely as older mothers to have children with high antisocial behaviour as reported by the mother (Table 6.2).

Table 6.2: Descriptive Statistics for Child Antisocial Behaviour (ASB) (Mother's Report) according to Frequency of Maternal Positive Comments.

Child ASB	Sample	Number of Positive Comments				
		Missing Data	No /Low pos	Mod positives	Mod/High	High Positives
Low/No ASB	Weighted ¹	22.12 (50)	16.97 (83)	21.29 (109)	31.46 (134)	37.13 (215)
	Age<=20 ²	14.16 (16)	11.79 (33)	10.69 (28)	12.76 (25)	21.40 (58)
	Age>=21 ³	30.09 (34)	24.04 (50)	32.40 (81)	47.39 (109)	51.14 (157)
Moderate ASB	Weighted	29.20 (66)	23.11 (113)	25.39 (130)	27.70 (118)	23.14 (134)
	Age<=20	15.93 (18)	8.93 (25)	13.36 (35)	18.88 (37)	15.87 (43)
	Age>=21	42.48 (48)	42.31 (88)	38.00 (95)	35.22 (81)	29.64 (91)
Moderate/High ASB	Weighted	26.11 (59)	25.56 (125)	28.91 (148)	22.77 (97)	24.35 (141)
	Age<=20	34.51 (39)	26.79 (75)	35.88 (94)	34.69 (68)	35.42 (96)
	Age>=21	17.70 (20)	24.04 (50)	21.60 (54)	12.61 (29)	14.66 (45)
High ASB	Weighted	21.68 (49)	34.36 (168)	24.41 (125)	18.08 (77)	15.37 (89)
	Age<=20	34.51 (39)	52.50 (147)	40.08 (105)	33.67 (66)	27.31 (74)
	Age>=21	8.85 (10)	9.62 (20)	8.00 (20)	4.78 (11)	4.56 (14)

¹ Weighted 'All' Mother Sample = Chi2 125.91, df 16, p=0.000, Gamma = -0.18

² Age<=20 (Younger) = ³ Chi2 61.53, df 16, p=0.001, Gamma =-0.16

Age>=21 (Older) = Chi2 67.97, df16, p=0.000, Gamma = -0.22

6.3.1.3: Maternal Negative Comments

There was a weak to moderate positive association between the number of maternal negative comments made about the child and the child's level of antisocial behaviour (Table 6.3 and Appendix 8). Antisocial behaviour decreased when there were no negative comments made about the child but increased when there were greater than three negative comments made.

Table 6.3 and Appendix 9 shows that younger mothers, who had made a high number of negative comments about their child, were much more likely than older mothers to have a child with high antisocial behaviour. However, when we examine the absence of negative comments we can see that both younger and older mothers are more likely to

have a child with lower antisocial behaviour. The effect is stronger, however, for older mothers.

Table 6.3: Descriptive Statistics for Child Antisocial Behaviour (ASB) (Mother's Report) according to Frequency of Negative Comments.

Child ASB	Sample	Number of Negative Comments			
		Missing Data	No Neg	Mod Neg	High Neg
Low/No ASB	Weighted ¹	21.93 (50)	50.60 (168)	27.18 (352)	5.57 (21)
	Age<=20 ²	14.04 (16)	31.71 (39)	16.16 (100)	1.88 (5)
	Age>=21 ³	29.82 (34)	61.72 (129)	37.33 (252)	14.55 (16)
Moderate ASB	Weighted	29.39 (67)	23.19 (77)	28.11 (364)	14.06 (53)
	Age<=20	15.79 (18)	17.89 (22)	15.83 (98)	7.52 (20)
	Age>=21	42.98 (49)	26.32 (55)	39.41 (266)	30.00 (33)
Moderate/High ASB	Weighted	25.88 (59)	17.77 (59)	26.64 (345)	28.38 (107)
	Age<=20	34.21 (39)	32.52 (40)	36.19 (224)	25.94 (69)
	Age>=21	17.54 (20)	9.09 (19)	17.93 (121)	34.55 (38)
High ASB	Weighted	21.93 (50)	8.43 (28)	18.07 (234)	51.99 (196)
	Age<=20	35.09 (40)	17.89 (22)	31.83 (197)	64.66 (172)
	Age>=21	8.77 (10)	2.87 (6)	5.33 (36)	20.91 (23)

¹ Weighted 'All' Mother Sample = Chi2 373.61, df 12, p=0.000, Gamma = 0.37

² Age<=20 (Younger) = Chi2 150.70, df12, p=0.000, Gamma = 0.38

³ Age>=21 (Older) = Chi2 132.48, df 12, p=0.000, Gamma = 0.28

6.3.1.4: Maternal Warmth

There was a weak to moderate negative association between maternal warmth and child antisocial behaviour for all sample groups (Table 6.4 and Appendix 8). Mothers who were rated as showing no warmth towards their child were more likely to have a child with higher antisocial behaviour. Moreover, those mothers who were rated as showing high warmth towards their child were more likely to have a child with no or low antisocial behaviour. However, the effect was stronger for older mothers. As we can see from Table 6.4 and Appendix 9 younger mothers who were rated as showing no

warmth towards their child were much more likely than older mothers to have a child with high antisocial behaviour. Furthermore, younger mothers with high warmth ratings, although still more likely to have a child with no or low antisocial behaviour than any other antisocial behaviour group, were more likely than older mothers to have a child with high antisocial behaviour.

Table 6.4: Descriptive Statistics for Child Antisocial Behaviour (ASB) (Mother’s Report) according to Maternal Warmth (EE).

Child ASB	Sample	Maternal Warmth			
		Missing Data	No Warmth	Mod	High
Low/No ASB	Weighted ¹	21.98 (51)	11.03 (45)	21.79 (161)	39.16 (334)
	Age<=20 ²	13.91 (16)	7.03 (18)	9.04 (34)	24.53 (92)
	Age>=21 ³	29.91 (35)	17.76 (27)	35.18 (127)	50.63 (242)
Moderate ASB	Weighted	29.74 (69)	21.32 (87)	24.49 (181)	26.26 (224)
	Age<=20	15.65 (18)	7.03 (18)	9.04 (34)	24.53 (92)
	Age>=21	43.59 (51)	45.39 (69)	34.90 (126)	32.85 (157)
Moderate/High ASB	Weighted	25.43 (59)	25.98 (106)	29.09 (215)	22.27 (190)
	Age<=20	33.91 (39)	27.34 (70)	36.17 (136)	33.87 (127)
	Age>=21	17.09 (20)	23.68 (36)	21.88 (79)	13.18 (63)
High ASB	Weighted	21.98 (51)	41.67 (170)	24.63 (182)	12.31 (105)
	Age<=20	35.65 (41)	58.59 (150)	40.16 (151)	23.73 (89)
	Age>=21	8.55 (10)	13.16 (20)	8.03 (29)	3.35 (16)

¹ Weighted ‘All’ Mother Sample = Chi2 232.02, df 12, p=0.000, Gamma = -0.28

² Age<=20 (Younger) = Chi2 118.63, df 12, p=0.000, Gamma = -0.35

³ Age>=21 (Older) = Chi2 84.35, df 12, p=0.000, Gamma = -0.27

6.3.1.5: Maternal Negativity

There was a weak to moderate positive association between maternal negativity and child antisocial behaviour for all sample groups (Table 6.5 for mother report and Appendix 8 for teacher report). As maternal negativity decreased so did the likelihood that the child would have antisocial behaviour problems. Furthermore, as negativity increased so did

child antisocial behaviour. Examining the relationship between child antisocial behaviour and maternal negativity in more detail showed that younger mothers, who were rated as having high negativity towards their child, were more likely than older mothers to have a child with high antisocial behaviour. Furthermore, younger mothers were more likely than older mothers to have a child with high antisocial behaviour even when they were rated as having no or low maternal negativity.

Table 6.5: Descriptive Statistics for Child Antisocial Behaviour (ASB) (Mother's Report) according to Maternal Negativity (EE).

Child ASB	Sample	Maternal Negativity			
		Missing Data	No	Moderate	High
Low/No ASB	Weighted ¹	22.22 (52)	39.98 (433)	14.76 (93)	4.56 (13)
	Age<=20 ²	14.53 (17)	23.93 (106)	9.32 (34)	1.52 (3)
	Age>=21 ³	29.91 (35)	51.09 (327)	22.35 (59)	11.49 (10)
Moderate ASB	Weighted	29.49 (69)	27.61 (299)	24.44 (154)	13.68 (39)
	Age<=20	15.38 (18)	18.51 (82)	12.33 (45)	6.60 (13)
	Age>=21	43.59 (51)	33.91 (217)	41.29 (109)	29.89 (26)
Moderate/High ASB	Weighted	25.64 (60)	22.35 (242)	30.63 (193)	26.32 (75)
	Age<=20	34.19 (40)	36.79 (163)	33.97 (124)	22.84 (45)
	Age>=21	17.09 (20)	12.34 (79)	26.14 (69)	34.48 (30)
High ASB	Weighted	21.79 (51)	10.06 (109)	30.16 (190)	55.44 (158)
	Age<=20	35.04 (41)	20.77 (92)	44.38 (162)	69.04 (136)
	Age>=21	8.55 (10)	2.66 (17)	10.23 (27)	24.14 (21)

¹ Weighted 'All' Mother Sample = Chi2 193.26 , df 6, p=0.000, Gamma = 0.39

² Age<=20 (Younger) = Chi2 177.17, df 12, p=0.000, Gamma =0.39

³ Age>=21 (Older) = Chi2 170.74, df 12, p=0.000, Gamma =0.34

6.3.1.6: Summary of Bivariate Analysis

It can be seen from the above tables (mother report) and the tables in Appendix 8 and 9 (teacher report) that there is an association between the five parenting variables and child antisocial behaviour. Therefore, when the particular parenting risk factor is present, for example low maternal warmth, there is increased child antisocial behaviour,

and when the risk factor is absent there is decreased child antisocial behaviour. The effect, however, is stronger for the mothers report on child antisocial behaviour as opposed to the teacher report.

There are, however, differences in levels of antisocial behaviour between the children of older and younger mothers when risks are both present and absent. When the parenting risk is present for younger mothers there is a substantial increase in child antisocial behaviour. Furthermore, when the parenting risk is absent, for example low maternal warmth, younger mothers are more likely than older mothers to have children with higher antisocial behaviour ratings. This suggests that younger mothers may be more likely than older mothers to face additional risk factors which increase their children's risk of antisocial behaviour even when parenting risks factors such as low maternal warmth and high maternal negativity are not present.

6.3.2: Multivariate Analysis - Child Antisocial Behaviour and Parenting Behaviour and Maternal Attitude

After examining all of the five parenting variables in bivariate form, we entered all five variables into a multivariate ordered logistic regression model using full maximum likelihood estimation. Backwards elimination of each individual parenting variable was carried out by estimating a variety of nested sub-models. The significance of the change in the log likelihood ratio for the omitted variable determined whether the variable was kept in the final model. The aim was to find the most parsimonious model that fitted the

data. Table 6.6 details the changes in log likelihood ratios for the mother's report on child antisocial behaviour and their significance for all of the parenting variables. The parenting variables entered into the model are number of maternal positive comments, number of maternal negative comments, maternal warmth, maternal negativity and frequency of smacking. The sample again is analysed according to our three sample groups: a weighted 'all' mother group, younger mothers and older mothers⁷⁴.

Table 6.6: Change in Log Likelihood Ratios for Omitted Category of Parenting Variables for Child Antisocial Behaviour (Mother's Report)

	Sample	Change	DF
Freq of Smacking	Weighted	130.66 ^{***}	3
	Age<=20	85.23 ^{****}	3
	Age>=21	58.48 ^{***}	3
Negativity (EE)	Weighted	31.65 ^{***}	2
	Age<=20	15.50 ^{***}	2
	Age>=21	16.59 ^{***}	2
Neg Comments (EE)	Weighted	18.73 ^{***}	2
	Age <=20	5.22	2
	Age>=21	13.43 ^{**}	2
Warmth (EE)	Weighted	15.06 ^{***}	2
	Age<=20	12.99 ^{**}	2
	Age>=21	4.01	2
Positive Comments (EE)	Weighted	1.58	3
	Age<=20	2.43	3
	Age>=21	2.51	3

*<0.05, **<0.01 ***<0.001.

For the weighted 'all' mother sample and child antisocial behaviour as measured by the mother (Table 6.6 and Table 6.7) the following variables remained significant and were kept in the model: frequency of smacking, maternal negativity, maternal warmth, and maternal negative comments. The number of maternal positive comments were not statistically significant and were removed from the final model. As can be seen from Table 6.6 the parenting variables which make the most contribution to child antisocial behaviour at age 5 as reported by the mother, are in order of highest contribution for the

⁷⁴ The model for the teacher report is not shown.

'all' mother sample: frequency of smacking, maternal negativity, maternal negative comments, and maternal warmth. It is evident, therefore, that both frequency of smacking and maternal negativity appear to have the greatest association with child antisocial behaviour at age 5 years old. This was confirmed by examining the teacher report on child antisocial behaviour (Appendix 10).

However, once the sample was divided according to mother's age at first birth, different variables became statistically significant depending on whether the mother was a younger or older mother. Examining the mother's report on child antisocial behaviour showed that for younger mothers (Table 6.6 and Table 6.7) frequency of smacking, maternal negativity and maternal warmth were the variables which retained statistical significance whilst for older mothers frequency of smacking, maternal negativity and maternal negative comments remained statistically significant (Table 6.6 and Table 6.7). It can be seen, again, that frequency of smacking and maternal negativity contribute strongly for reports on child antisocial behaviour regardless of the mother's age. However, examining the teacher report on child antisocial behaviour (Appendix 10) shows that maternal negativity and smacking is significant for younger mothers whilst only the frequency that a child is smacked is significant for older mothers. There are slight differences, therefore, in the parenting variables which are significant depending on whether the mother or teacher reports on child antisocial behaviour are used. However, the mother and teacher reports on child antisocial behaviour agree that frequency of smacking and maternal negativity are significant.

Table 6.7: Significant Parenting Variables for Child Antisocial Behaviour (Mother's Report) according to Sample Group

WEIGHTED	AGE<=20	AGE>=21
Frequency of Smacking	Freq of Smack	Freq of Smack
Maternal Neg Comments	NA	Maternal Neg Comments
Maternal Negativity	Maternal Negativity	Maternal Negativity
Maternal Warmth	Maternal Warmth	NA

The three tables below show the final multivariate ordered logistic model for all three samples. Table 6.8 below details the final ordered logistic model for the weighted 'all' mother sample for child antisocial behaviour as reported by the mother.

Table 6.8: Final Ordered Logistic Model for Child Antisocial Behaviour (Mother's Report) according to Parenting Behaviour and Maternal Attitude (Weighted 'all' Mother Sample).

Child Antisocial Behaviour	Coef	P>z	95% Confidence Interval	
Freq of Smacking – Rarely ¹	0.420798	0.008	0.107451	0.734144
Freq of Smacking - Monthly	0.974359	0.000	0.5943311	1.35387
Freq of Smack - Weekly/Daily	1.48998	0.000	1.053416	1.926545
Missing Data Negativity	.8940744	0.560	-2.113337	3.901486
Some Negativity (EE) ²	0.8065661	0.000	.5770579	1.036074
High Negativity (EE)	1.236474	0.000	.88344075	1.638541
Missing Data Neg Comments	0.8059515	0.022	.1155209	1.496382
Moderate Neg Comments ³	0.5405007	0.000	.2851662	.7958352
High Negative Comments	1.228065	0.000	.8223426	1.633788
Missing Data Warmth	-4.1837609	0.787	-3.458132	2.621379
Mod Warmth ⁴	0.3074109	0.004	.0970724	.5177495
High Warmth	0.4539802	0.001	.1740282	.7339323

	Coef	SE
Cut1	0.696141	.1734843
Cut2	2.166561	.175529
Cut3	3.576204	.1800645

Reference Groups

- ¹Frequency of Smacking – No Smacking
- ²Low Negativity
- ³No Negative Comments
- ⁴No Warmth

Table 6.9 below shows the final ordered logistic model for the mother's report on child antisocial behaviour for younger mothers (age at first birth was less than or equal to 20). In comparison to the weighted 'all' mother sample above, the co-efficients in the final

model for younger mothers are higher indicating a stronger relationship between the parenting variables and child antisocial behaviour. However, the number of maternal negative comments was not significant for younger mothers although they were for the weighted 'all' mother sample.

Table 6.9: Final Ordered Logistic Model for the Mothers Report on Child Antisocial Behaviour according to Parenting Behaviour and Maternal Attitude (Younger Mother Sample).

Child Antisocial Behaviour	Coef	P>z	95% Confidence Interval	
Freq of Smacking – Rarely ¹	0.6099563	0.001	0.2397836	0.979342
Freq of Smacking - Monthly	1.363257	0.000	0.8426486	1.883866
Freq of Smack - Weekly/Daily	1.792259	0.000	1.259525	2.324994
Missing Data Neg	0.2111879	0.802	-1.437217	1.859592
Some Negativity ²	0.679307	0.000	0.369563	0.989051
High Negativity	1.566729	0.000	1.151858	1.9816
Missing Data Warmth	0.5543378	0.512	-1.100753	2.209429
Mod Warmth ³	0.4511074	0.002	.1711259	.731089
High Warmth	0.6730617	0.000	.03014618	1.044662
	Coef	SE		
Cut1	-.4694202	.1880202		
Cut2	.5048859	.1865699		
Cut3	2.138558	.1972735		

Reference Groups

- ¹Frequency of Smacking – No Smacking
- ²No/Low Negativity
- ³No/Low Warmth

Table 6.10 below details the final ordered logistic model for older mothers (age at first birth was greater or equal to 21). The final model for older mothers differed from that for younger mothers in that maternal warmth was not significant for older mothers although it had been for younger mothers, whilst maternal negative comments was significant for the older mothers but not younger mothers. The co-efficients for the older mother final model were slightly lower than for the younger mother model indicating less of an association.

Table 6.10: Final Ordered Logistic Model for the Mothers Report on Child Antisocial Behaviour according to Parenting Behaviour and Maternal Attitude (Older Mother Sample).

Child Antisocial Behaviour	Coef	P>z	95% Confidence Interval	
Freq of Smacking – Rarely ¹	0.370610	0.102	-0.741835	0.815404
Freq of Smacking - Monthly	0.9904637	0.000	0.4868796	1.490400
Freq of Smack - Weekly/Daily	1.474531	0.000	0.866746	2.082587
Missing Data Neg	0.4239792	0.568	-1.039038	1.886997
Some Negativity (EE) ²	0.9090049	0.000	.6091659	1.208844
High Negativity (EE)	1.50172	0.000	0.9704326	2.033008
Missing Data Neg Com	0.8163176	0.284	-.6776904	2.310326
Moderate Neg Comments ³	0.5768202	0.001	.2449193	.9087212
High Negative Comments	1.144607	0.000	.5799661	1.709248

	Coef	SE
Cut1	0.759566	.2004913
Cut2	2.559387	.2147032
Cut3	4.223619	.2421807

Reference Groups

- ¹ Frequency of Smacking – No Smacking
- ² Low Negativity
- ³ No Negative Comments

Table 6.11 below depicts the predicted probabilities for child antisocial behaviour as rated by the mother according to the significant parenting risk factors in the final model above. We start by examining the predicted probabilities for the weighted 'all' mother sample group and frequency of smacking. The table shows that children who are not smacked or rarely smacked, controlling for all other parenting variables, were more likely to be in the no or low antisocial behaviour group (Table 6.11). However, as smacking increased in frequency so does the proportion of children who were in the high antisocial behaviour groups, culminating in 42 per cent of children who were smacked weekly or daily being rated as having high antisocial behaviour. This was the case for both the weighted sample and the older mother sample. Younger mothers, however, were significantly more likely than older mothers to have a child in the high antisocial behaviour groups when they smacked monthly (43 per cent) or weekly or daily (55 per

cent). Furthermore, even when younger mothers smacked rarely they were as likely to have a child in any of the four antisocial behaviour ratings, and it was only when younger mothers reported no smacking that they were more likely to have a child with low antisocial behaviour as opposed to high antisocial behaviour. This was not the case for older mothers who were more likely to have a child with no antisocial behaviour if they smacked rarely.

Examining the 'all' mother sample predicted probabilities for child antisocial behaviour and maternal negativity (Table 6.11) showed that mothers who were rated as having no or low negativity were more likely to have a child with no or low antisocial behaviour (36 per cent) whilst mothers who were rated as having high negativity were more likely to have a child with high antisocial behaviour (39 per cent). Examining the sample according to the mother's age at first birth showed that for younger mothers there was little variation in the predicted probabilities for the four child antisocial behaviour groups when the mother was rated as having no or low negativity. Younger mothers who were rated as having no or low negativity were slightly more likely to have a child with moderately high antisocial behaviour (27 per cent), however, they were almost as likely to have a child with no or low antisocial behaviour (26 per cent). This was not the case for older mothers who were substantially more likely to have a child with no or low antisocial behaviour (39 per cent) if no or low negativity was rated. Furthermore, as levels of maternal negativity increased younger mothers were more likely than older mothers to have a child with high antisocial behaviour.

The predicted probabilities for the number of maternal negative comments and child antisocial behaviour showed that for the 'all' mother sample as negative comments increased so did the probability that a child would have high antisocial behaviour (38 per cent) (Table 6.11). Furthermore as negative comments decreased so did the probability that the child would have no or low antisocial behaviour (41 per cent). The predicted probabilities were not calculated for younger mothers as the number of negative comments was not significant for this group; however, it was significant for older mothers. Older mothers followed the pattern of the weighted 'all' mother sample in that as the number of negative comments increased so did child antisocial behaviour.

The predicted probabilities for maternal warmth and the mother's report on child antisocial behaviour showed that for the 'all' mother sample as warmth increased so antisocial behaviour decreased (Table 6.11). Mothers who were rated as having no or low warmth were more likely to have a child with high antisocial behaviour (34 per cent) whilst mothers who were rated as having high warmth were more likely to have a child with no or low antisocial behaviour (36 per cent). The predicted probabilities were not calculated for older mothers, as maternal warmth was not significant for this group in the final model. Younger mothers, however, were substantially more likely to have a child with high antisocial behaviour if the mother had been rated as having no or low warmth (47 per cent). Examining the high warmth category showed that younger mothers were more likely to have a child with no or low antisocial behaviour (27 per cent) if they were rated as having high warmth, however, the maternal warmth predicted probabilities for younger mothers showed less variability.

Table 6.11: Predicted Probabilities for Child Antisocial Behaviour (Mother's Report) and Parenting Risk Factors.

Parenting Risk Factors	Child ASB	Weighted 'All' Mother	Age<=20 (Younger)	Age>=21 (Older)
Frequency of Smacking				
No Smacking	No/Low ASB	.424341	.349811	.3628993
	Mod ASB	.2762043	.258144	.2928993
	Mod/High ASB	.1915794	.235336	.22156
	High ASB	.1078753	.156709	.1226414
Rarely/Occasionally	No/Low ASB	.3160003	.2312226	.3489227
	Mod ASB	.2771514	.2345825	.2962139
	Mod/High ASB	.242632	.2858838	.2292034
	High ASB	.1642163	.2483111	.1256600
Monthly	No/Low ASB	.1842875	.1146324	.2008792
	Mod ASB	.2282959	.15894	.256415
	Mod/High ASB	.2873124	.2865595	.2987317
	High ASB	.3001042	.4398681	.2439741
Weekly/Daily	No/Low ASB	.1125951	.0724439	.1289589
	Mod ASB	.1753166	.1151486	.2062693
	Mod/High ASB	.2883572	.2552633	.3143368
	High ASB	.4237311	.5571442	.350435
Maternal Negativity (EE)				
Missing Data	Low ASB	.2631044	.1357166	.3092329
	Mod ASB	.3351195	.1556911	.4149294
	Mod/High ASB	.2552805	.3788525	.2067933
	High ASB	.1464955	.3297398	.0321838
No/Low Negativity	No/Low ASB	.364688	.266792	.3910167
	Mod ASB	.2864199	.2502771	.2987604
	Mod/High ASB	.2190925	.2730045	.2067199
	High ASB	.1289671	.2099264	.1035030
Some Negativity	No/Low ASB	.1998872	.1303852	.23548
	Mod ASB	.2476386	.1774068	.2787594
	Mod/High ASB	.2910766	.299467	.2853584
	High ASB	.2613976	.392741	.2003923
High Negativity	No/Low ASB	.1180209	.0330818	.105782
	Mod ASB	.1851091	.0497874	.300975
	Mod/High ASB	.29699	.2261323	.2067933
	High ASB	.39988	.6909985	.2291571
Number of Negative Comments				
Missing Data	Low ASB	.2611632	NA	.3092329
	Mod ASB	.3341312	NA	.4156944
	Mod/High ASB	.2561469	NA	.2087675
	High ASB	.1485587	NA	.06999283
No Neg. Comments	No/Low ASB	.4166902	NA	.4505895

Parenting Risk Factors	Child ASB	Weighted 'All' Mother	Age<=20 (Younger)	Age>=21 (Older)
	Mod ASB	.2828389	NA	.2901715
	Mod/High ASB	.1940617	NA	.1772934
	High ASB	.1064092	NA	.0819456
Mod Neg Comments	No/Low ASB	.28582	NA	.3157109
	Mod ASB	.2736517	NA	.2954853
	Mod/High ASB	.2551511	NA	.245283
	High ASB	.1853772	NA	.1435208
High Neg. Comments	No/Low ASB	.1220143	NA	.1433519
	Mod ASB	.1898518	NA	.2228656
	Mod/High ASB	.2987909	NA	.3168956
	High ASB	.389343	NA	.3168869

Maternal Warmth (EE)

Missing Data	Low ASB	.2625564	.1375208	NA
	Mod ASB	.3345729	.1571842	NA
	Mod/High ASB	.2555889	.3793866	NA
	High ASB	.1472818	.3259084	NA
No/Low Warmth	No/Low ASB	.1522539	.10161	NA
	Mod ASB	.20707	.147072	NA
	Mod/High ASB	.2910057	.280284	NA
	High ASB	.3496704	.4710321	NA
Moderate Warmth	No/Low ASB	.2452447	.1659469	NA
	Mod ASB	.260786	.2011926	NA
	Mod/High ASB	.2718076	.297813	NA
	High ASB	.2221617	.3350475	NA
High Warmth	No/Low ASB	.3622353	.2724695	NA
	Mod ASB	.2827311	.2503878	NA
	Mod/High ASB	.2193912	.2696002	NA
	High ASB	.1356424	.2075425	NA

6.3.2.1: Summary of Multivariate Analysis

The multivariate analysis confirmed what we found in the bivariate descriptive analysis. For the 'all' mother sample and the older mother sample, the presence of a significant parenting risk, for example, low maternal warmth, whilst controlling for other significant parenting risks, increased the risk of child antisocial behaviour whilst the absence of the parenting risk, for example high maternal warmth, decreased the likelihood of child antisocial behaviour. However, this was not always the case for younger mothers who

were substantially more likely to have a child in the high antisocial behaviour groups when the risk was present, but were also more likely than older mothers to have a child with high antisocial behaviour when the risk was absent. Our analysis, therefore, has shown that there is an association between frequency of smacking, maternal warmth, maternal negativity, maternal negative comments and child antisocial behaviour as rated by the mother. This association is stronger for younger mothers. The parenting variables which contributed the most strongly as risk factors for child antisocial behaviour as rated by the mother were frequency of smacking and maternal negativity, followed by maternal negative comments and maternal warmth. The number of maternal positive comments was not significant. Examining the teacher's report on child antisocial behaviour, however, showed that the parenting variables which were significant were frequency of smacking and maternal negativity; maternal warmth, maternal positive comments and maternal negative comments were not significant. The teacher report, therefore, confirms that both frequency of smacking and maternal negativity are associated with child antisocial behaviour (Appendix 10).

6.3.3: Frequency of Smacking as a Protective Moderating Factor

Our second research question examines how far parenting practices may have a protective moderating influence on child antisocial behaviour. As can be seen from the results in the section above and Appendix 10, frequency of smacking is highly associated with adverse child antisocial behaviour outcomes as rated independently by the mother

and the teacher. Furthermore, levels of maternal negativity⁷⁵ and warmth⁷⁶ are also associated with increases in child antisocial behaviour. In this section we examine how far frequency of smacking acts as a protective factor moderating the risk of low maternal warmth and high maternal negativity upon child antisocial behaviour outcomes as rated by the mother⁷⁷. We hypothesise that the presence of frequent smacking and high maternal negativity together or the presence of frequent smacking and a lack of maternal warmth together will increase the risk of child antisocial behaviour. Furthermore, we hypothesise that a reduction in the frequency of smacking may moderate the effects of low maternal warmth and high negativity on levels of child antisocial behaviour. We examine the moderating protective effects of frequency of smacking as opposed to the protective effects of maternal negativity and maternal warmth for two reasons. First, frequency of smacking is highly associated as a risk factor with child antisocial behaviour, and second, frequency of smacking may be the parenting element which would be the easiest to bring about a change in, for example, by legislation, publicity or the use of alternative discipline strategies such as time-out (i.e. the removal of a child to a safe room for a timed period). The results will be examined in relation to the mother's report on child antisocial behaviour for all three sample groups.

Examining Table 6.12 below, which looks at the 'all' mother sample, shows that how often a child is smacked has important implications for the effects of maternal warmth on child antisocial behaviour. Examining the category high maternal warmth, shows that children who are also not smacked or rarely smacked are much more likely to be rated as

⁷⁵ Both mother and teacher report on child antisocial behaviour.

⁷⁶ Mother report on child antisocial behaviour only.

having no or low antisocial behaviour. Therefore, it is evident that the best prognosis for a child in terms of antisocial behaviour is where high maternal warmth is combined with less frequent smacking or no smacking at all. However, when smacking increases to weekly or daily, children who experience high maternal warmth become more likely to be in the high antisocial behaviour groups. What may be happening, therefore, is that frequent smacking, for example on a daily or weekly basis, may cancel out some of the benefits of a mother having high maternal warmth for children at risk of antisocial behaviour.

Examining the category 'no maternal warmth' (Table 6.12) shows that a child who experiences no maternal warmth but who is smacked rarely or not smacked at all is as likely to be in any of the four antisocial behaviour groups. However, when smacking increases to a weekly or daily frequency, a child, who experiences no maternal warmth, is twice as likely to be in the high antisocial behaviour group (55 per cent compared to 25 per cent when rarely smacked). What is evident, therefore, is that the greatest risk for antisocial behaviour in children is in situations where low maternal warmth is combined with frequent smacking, for example, where there are multiple parenting risks. However, what is also evident is that a reduction in the frequency that a child is smacked may reduce the impact of a mother's lack of maternal warmth on child antisocial behaviour. This is confirmed by examining Table 6.11 which depicts the multivariate predicted probabilities for maternal warmth controlling for all other parenting variables.

⁷⁷ We do not examine this research question in relation to the teacher reports on child antisocial behaviour.

Table 6.12: Predicted Probabilities for the Mothers Report on Child Antisocial Behaviour and Frequency of Smacking according to levels of Maternal Warmth (Weighted 'All' Mother Sample).

Frequency of Smacking	Child ASB	Missing	No Warmth	Mod Warmth	High Warmth
No Smacking	No ASB	.404543	.4678657	.3737769	.5155659
	Mod ASB	.32227414	.2794369	.2897851	.2630364
	Mod/High	.1800036	.2655139	.2127377	.1480372
	High ASB	.092712	.1871835	.1237003	.0733605
Rarely/Occasionally	No ASB	.304118	.1987171	.2763873	.3938708
	Mod ASB	.3276234	.2477099	.276812	.2887175
	Mod/High	.2311799	.2960801	.2629281	.2052804
	High ASB	.1370787	.2574929	.1838726	.1121313
Monthly	No ASB	.1747067	.0978373	.1921131	.2638083
	Mod ASB	.2791323	.1662995	.24376	.2752215
	Mod/High	.2992029	.2980987	.2956170	.2678747
	High ASB	.246958	.4377645	.2685099	.1930955
Weekly/Daily	No ASB	.1219197	.061968	.1149808	.1699566
	Mod ASB	.2308433	.119698	.1834367	.2300837
	Mod/High	.313906	.265100	.300886	.2984539
	High ASB	.333331	.553230	.4006965	.3015058

In Table 6.11 we see that 34 per cent of children who experience no maternal warmth are in the high antisocial behaviour group. However, examining Table 6.12 below shows that when no maternal warmth is combined with smacking which takes place rarely this drops to 25 per cent, and when no maternal warmth is combined with no smacking this reduces to 18 per cent. Therefore, a reduction in the frequency of smacking may moderate the effects of a mother's lack of maternal warmth on child antisocial behaviour.

Examining the sample according to the mother's age at first birth confirmed the above and showed that a reduction in the frequency of smacking may reduce the effects of a mother's lack of warmth on levels of child antisocial behaviour. Table 6.13 shows that the children of younger mothers who received no maternal warmth were nearly twice as likely to be in the high antisocial behaviour group if they were smacked weekly or daily

as opposed to rarely whilst the children of older mothers (Table 6.14) were nearly three times as likely to be in the high antisocial behaviour group if they were smacked weekly/daily as opposed to rarely.

Table 6.13, provides some interesting results for the set of younger mothers. In an earlier section of this chapter we found that when a parenting risk was absent, i.e. low maternal warmth, younger mothers were still more likely than older mothers to have a child with high antisocial behaviour ratings. However, the data in Table 6.13 show that this is not the case when two parenting risks are absent, for example, an increase in maternal warmth and a reduction in smacking. Younger mothers who rarely smack their child (or who do not smack at all), and who are rated as having high warmth are much more likely to have children with lower antisocial behaviour ratings. Their children become more like the children of older mothers in terms of levels of antisocial behaviour. Therefore, it may be the case that with younger mothers especially, parenting interventions may need to target more than one aspect of general parenting in order to reduce the association with child antisocial behaviour. In summary, we have shown, in the above analysis, that smacking weekly or daily is associated with increases in child antisocial behaviour even when a mother is rated as high in maternal warmth; we have shown that the worst prognosis in terms of child antisocial behaviour is one in which there are multiple parenting risks such as a lack of maternal warmth combined with smacking weekly or daily. Lastly, we have shown that a reduction in the frequency of smacking may act in a protective way moderating the effects of a lack of maternal warmth on child antisocial behaviour.

Table 6.13: Predicted Probabilities for the Mothers Report on Child Antisocial Behaviour and Frequency of Smacking according to levels of Maternal Warmth (Younger Mother Sample).

Frequency of Smacking	Child ASB	Missing	No Warmth	Mod	High Warmth
No Smacking	No ASB	.2456635	.2201866	.3015649	.4525822
	Mod ASB	.2109276	.2411787	.2654972	.2623557
	Mod/High	.3429895	.2936234	.257869	.1852877
	High ASB	.2004194	.2450113	.1750689	.0997744
Rarely/Occasionally	No ASB	.1571119	.130479	.18544	.2943445
	Mod ASB	.1676278	.179952	.22037	.2614836
	Mod/High	.3706999	.307536	.30467	.2622353
	High ASB	.3045604	.382033	.28952	.1819366
Monthly	No ASB	.0930568	.064426	.09459	.1606642
	Mod ASB	.1162568	.106792	.14403	.2041173
	Mod/High	.347609	.254833	.29104	.3087857
	HighASB	.4430774	.573949	.47034	.3264625
Weekly/Daily	No ASB	.067916	.042886	.06365	.1107583
	Mod ASB	.0903284	.075610	.10574	.1612623
	Mod/High	.3133862	.207201	.25350	.301111
	High ASB	.5283694	.674303	.57711	.4268684

Table 6.14: Predicted Probabilities for the Mothers Report on Child Antisocial Behaviour and Frequency of Smacking according to levels of Maternal Warmth (Older Mother Sample).

Frequency of Smacking	Child ASB	Missing	No Warmth	Mod	High Warmth
No Smacking	No ASB	.4179707	.3356003	.4134595	.5285874
	Mod ASB	.3763114	.3035824	.2985368	.2686725
	Mod/High	.1545511	.243001	.1939736	.1414879
	High ASB	.0511669	.1265171	.0940301	.0612522
Rarely/Occasionally	No ASB	.3420626	.25288	.33176	.4167794
	Mod ASB	.394451	.28884	.30246	.2971603
	Mod/High	.194633	.27915	.23629	.1923924
	High ASB	.0693231	.17913	.12949	.0936679
Monthly	No ASB	.1923623	.15765	.21540	.2832347
	Mod ASB	.3691518	.23762	.27408	.296609
	Mod/High	.2986336	.32177	.29852	.2626879
	High ASB	.1398523	.28296	.21198	.1574684
Weekly/Daily	No ASB	.1619286	.09122	.12833	.1748655
	Mod ASB	.3475938	.16834	.21127	.204658
	Mod/High	.3235141	.31656	.32636	.3162357
	High ASB	.1669635	.42388	.33404	.3042408

We then examined how far frequency of smacking acted as a protective factor moderating the risk of high maternal negativity upon child antisocial behaviour (Table 6.15). The table below, which reports the statistics for 'all' mothers, shows that for children who are at risk of high maternal negativity, frequency of smacking is important. Examining Table 6.15 shows that more than half of the children who are at risk of both high maternal negativity and weekly or daily smacking are in the high antisocial behaviour group (57 per cent). However, when smacking decreases to rarely but maternal negativity remains high, the proportion of children with high antisocial behaviour reduces to 30 per cent. What can be deduced from this is that on the one hand levels of maternal negativity are still important in terms of child antisocial behaviour as 30 per cent of children are still in the high antisocial behaviour category even when smacking is reduced to rarely but that on the other hand a reduction in frequent smacking almost halves the risk of child antisocial behaviour when maternal negativity is high (57 per cent to 30 per cent). Furthermore, comparing Table 6.11, which looks at the predicted probabilities for maternal negativity controlling for all other parenting variables, and Table 6.15 below we see that 39 per cent of children who experience high negativity are rated as having high antisocial behaviour, but when high negativity is combined with smacking which occurs rarely this drops to 30 per cent of children in this category. Therefore, we suggest that a reduction in the frequency of smacking may moderate the effects of high negativity on child antisocial behaviour.

Table 6.15: Predicted Probabilities for the Mothers Report on Child Antisocial Behaviour and Frequency of Smacking according to levels of Maternal Negativity (Weighted 'All' Mother Sample).

Frequency of Smacking	Child ASB	Missing	No/Little Neg	Some Neg	High Neg
No Smacking	No ASB	.3695835	.5023504	.3130949	.2169384
	Mod ASB	.3431909	.2697265	.2915805	.2648387
	Mod/High	.1959023	.153579	.2443153	.291831
	High ASB	.0913233	.0755651	.1510093	.2263919
Rarely/Occasionally	No ASB	.2914738	.3969038	.2297353	.1547801
	Mod ASB	.3437432	.2914354	.269829	.2261235
	Mod/High	.2395027	.2034759	.286978	.3132584
	High ASB	.1252802	.1092838	.2134586	.3058380
Monthly	No ASB	.17227067	.2722606	.145335	.089119
	Mod ASB	.2964167	.2816093	.216235	.157273
	Mod/High	.3107661	.2655016	.3101536	.2956634
	High ASB	.2201105	.1806285	.3282764	.4579446
Weekly/Daily	No ASB	.1238103	.1811174	.0835845	.0560783
	Mod ASB	.2504621	.2448135	.1514979	.1108629
	Mod/High	.3314618	.3058952	.2948044	.2562361
	High ASB	.2942659	.2681739	.4701132	.5768227

Examining the sample according to the mother's age at first birth confirmed the results above for both younger (Table 6.16) and older (Table 6.17) mothers. As frequency of smacking reduced, the risk of having a child with high antisocial behaviour almost halved even when the child was at risk of high maternal negativity. However, what was also interesting was that for both sets of mothers, older mothers especially, a combination of low maternal negativity and less frequent smacking was associated with lower levels of child antisocial behaviour. This, of course, is what we would expect. However, earlier in this chapter we found that younger mothers were more likely than older mothers to have children with higher antisocial behaviour ratings even when the parenting risk was not present. In Table 6.16 below we can see that when rates of maternal negativity and smacking are low, the children of younger mothers become more like the children of

older mothers. Therefore, it may be that for younger mothers especially, a reduction in multiple parenting risks may be the key to a reduction in child antisocial behaviour.

Table 6.16: Predicted Probabilities for the Mothers Report on Child Antisocial Behaviour and Frequency of Smacking according to levels of Maternal Negativity (Younger Mother Sample).

Frequency of Smacking	Child ASB	Missing	No/Little Neg	Some Neg	High Neg
No Smacking	No ASB	.2322314	.4287659	.2374509	.2109808
	Mod ASB	.2096497	.2666237	.2489577	.2375282
	Mod/High	.3575087	.1976653	.2895928	.2999098
	High ASB	.2006102	.1069451	.2239986	.2515812
Rarely/Occasionally	No ASB	.1535778	.28775	.14852	.1254611
	Mod ASB	.1684239	.26167	.19638	.1766985
	Mod/High	.383041	.26761	.31356	.3110775
	High ASB	.2949572	.18297	.34154	.3867629
Monthly	No ASB	.0963562	.15806	.07497	.0624986
	Mod ASB	.1218482	.20364	.12158	.1050072
	Mod/High	.3659509	.31310	.27599	.256724
	High ASB	.4158447	.32520	.52746	.5757702
Weekly/Daily	No ASB	.0690453	.10788	.04962	.0411727
	Mod ASB	.0935253	.15952	.08652	.0735615
	Mod/High	.3316275	.30462	.22977	.2071133
	High ASB	.5058019	.42798	.63409	.6781525

Table 6.17: Predicted Probabilities for the Mothers Report on Child Antisocial Behaviour and Frequency of Smacking according to levels of Maternal Negativity (Older Mother Sample).

Frequency of Smacking	Child ASB	Missing	No/Little Neg	Some Neg	High Neg
No Smacking	No ASB	.3889181	.5241083	.362275	.2527293
	Mod ASB	.4013613	.2736696	.308226	.2950859
	Mod/High	.1613281	.1423991	.2196873	.2805466
	High ASB	.0483925	.059823	.1098117	.1716382
Rarely/Occasionally	No ASB	.3312767	.42975	.27073	.1915288
	Mod ASB	.4144702	.30077	.30106	.2685502
	Mod/High	.1929265	.18471	.26994	.3123212
	High ASB	.0613266	.08477	.15827	.2275998
Monthly	No ASB	.1902967	.28376	.16329	.1107514
	Mod ASB	.3915574	.30387	.24918	.1986314
	Mod/High	.2971025	.26258	.32409	.3314388
	High ASB	.1210434	.14979	.26344	.3591784
Weekly/Daily	No ASB	.1610461	.19278	.10526	.0698338
	Mod ASB	.3709122	.26933	.19208	.1427932
	Mod/High	.3237639	.31172	.33027	.305559
	High ASB	.1442778	.22617	.37239	.481814

6.4: DISCUSSION

In section 6.3.2 we examined five dimensions of parenting practices in a multivariate model which aimed to assess the relative importance of each of these parenting elements in relation to child antisocial behaviour at age 5 years old. Our five parenting factors were frequency of smacking, maternal warmth, maternal positive comments, maternal negative comments and maternal negativity. Child antisocial behaviour was rated by the mother and teacher and we examined our findings according to our three sample groups: an 'all' mother group, a younger mother group and an older mother group. Our results indicate that specific parenting factors are associated with child antisocial behaviour. The important risk factors which are associated with child behaviour problems at age 5 as reported by the mother, in order of importance, are frequency of smacking, maternal negativity, maternal negative comments, and maternal warmth. The number of maternal positive numbers were not found to be significant. The results using the teacher reports on child antisocial behaviour differed from the results using the mother report on antisocial behaviour in that only frequency of smacking and maternal negativity were significant for the former. However, it is important to note that both reports (mother and teacher) identified frequency of smacking and maternal negativity as having the strongest association with child antisocial behaviour at age 5 years old. It would seem, therefore, that it is negative interactions which matter more for child antisocial behaviour and positive interactions, such as high warmth, and positive comments seem to be associated to a lesser degree with antisocial behaviour. Furthermore, it would appear in relation to maternal attitude that it is the tone of the parent/child relationship (i.e. negativity) as

opposed to the content of what is said (i.e. negative comments) which is important in relation to associations with child antisocial behaviour.

There were some differences, however, between the important parenting factors for child antisocial behaviour, as rated by the mother, according to the mother's age at first birth. For younger mother's frequency of smacking, maternal negativity, and maternal warmth were significant whilst for older mother's frequency of smacking, maternal negativity and maternal negative comments were significant. The teacher report on child antisocial behaviour, however, identified only frequency of smacking and maternal negativity as being significant for younger mothers, and only frequency of smacking for older mothers. However, what was evident from the predicted probabilities was that when the parenting risk was present for younger mothers, i.e. high maternal negativity, they were substantially more likely to have a child with high antisocial behaviour than older mothers. Furthermore, even when the parenting risk was absent, i.e. low maternal negativity, younger mothers were still more likely than older mothers to have a child with high antisocial behaviour. We suggest, therefore, that younger mothers may face additional risk factors which increase the risk of their child having high antisocial behaviour even when a particular parenting risk factor was not present. We therefore examined a possible explanation for why younger mother were more likely than older mothers to have children with high antisocial behaviour even when a specific parenting risk was not present. We focused on the effects of multiple parenting risk factors on child antisocial behaviour to see how far the risk of child antisocial behaviour decreased when more than one parenting risk factor was not present. We found that when younger

mothers smacked less frequently or did not smack at all and were rated as having high maternal warmth or low maternal negativity (i.e. no parenting risk), the risk of having a child with higher antisocial behaviour decreased, and their children's risk of antisocial behaviour became similar to that of older mothers. This was not the case when we examined the absence of a single parenting risk factor as in most cases younger mothers were still much more likely than older mothers to have a child with high antisocial behaviour. Therefore, it could be that by targeting one specific area of parenting in interventions, i.e. a reduction in smacking, may reduce the association of smacking with child antisocial behaviour for older mothers, however, this may not be the case for younger mothers who may need interventions which focus on reducing the risk of multiple parenting risk factors.

We continued by examining the 'all' mother sample and how far multiple parenting risk factors increased the risk of child antisocial behaviour. We found that the risk of child antisocial behaviour increased substantially when frequent smacking occurred alongside low warmth or high negativity. Children who were exposed to multiple negative parenting risks were more likely to be rated as having high antisocial behaviour than if they were exposed to a single parenting risk. Conversely, we found that the best prognosis for children were in families where parenting risks were low for example, high warmth/rarely smacked, or low negativity/rarely smacked. However, what was also evident was that when smacking increased in frequency this was associated with a significant increase in child antisocial behaviour regardless of the mother's high warmth or low negativity.

Our findings, therefore, have shown that frequency of smacking is highly associated with child antisocial behaviour at age 5 years old. We were, however, interested in whether a reduction in smacking could act as a protective factor moderating the effects of other parenting risks on child antisocial behaviour. Our results indicate that a reduction in the frequency that a child is smacked may moderate the effect of low maternal warmth and high maternal negativity on child antisocial behaviour, and that a reduction in smacking may act as a moderating protective factor for children at risk of antisocial behaviour. This finding related to both younger and older mothers.

6.5: CONCLUSIONS

The findings of the present chapter may have a number of implications for interventions, research and policy for children with antisocial behaviour. First, our analysis supports the hypothesis that negative parenting interactions are more likely than a lack of positive interactions to be associated with child antisocial behaviour (Rutter, Giller & Hagell 1998; Patterson 1982). Furthermore, it is evident from our analysis that it is the negative overall tone of the parent/child relationship which is important as opposed to what is said. Parents, therefore, may be rated as having made a high number of negative comments about their child but it appears that this may only be detrimental if the tone of the relationship is also negative. Second, our analysis indicates that there is a strong association between how often a child is smacked and child antisocial behaviour as reported by both the mother and teacher. We found that those children who were smacked the most frequently had the highest antisocial

behaviour rating. However, whether frequent smacking is the cause of the antisocial behaviour or the child's antisocial behaviour increases the frequency of smacking cannot be ascertained from our cross-sectional data. What can be seen from this chapter, however, is that children with high antisocial behaviour are being smacked more frequently. This is important as previous research has shown that corporal punishment is associated with increases in children's aggressive behaviours (Gershoff 2002; Strauss 1999; 1994; Becker 1964, Patterson 1982, Radke-Yarrow, Campbell & Burton 1968). Furthermore, it has been hypothesised that corporal punishment is associated with increases in children's aggression because it models aggression (Aronfreed 1969, Bandura and Walters 1959). It could be argued, therefore, that regardless of whether frequent corporal punishment causes the child's antisocial behaviour or is the result of the child's antisocial behaviour, it is evident from previous research that excessive corporal punishment may actually maintain or worsen the child's antisocial behaviour by modelling aggression or setting up coercive cycles whereby the child is difficult, the parent smacks the child and the child becomes more difficult and so the cycle continues.

A number of countries have adopted policies or laws that prohibit parents from using corporal punishment as a means of discipline (Austria, Croatia, Cyprus, Denmark, Finland, Germany, Israel, Italy, Latvia, Norway, and Sweden (Bitensky 1998: EPOCH-USA 2000). In England and Wales, however, the smacking of children is not prohibited and smacking appears to be a common disciplinary measure with over 75 per cent of parents in the E-Risk study stating that they smacked their children. The

high usage of smacking as a disciplinary tool by parents in England and Wales could, therefore, render any prohibition of smacking unpopular. In terms of policy and interventions, therefore, it may be more advantageous to advocate policies which aim at reducing the amount children are smacked as opposed to an outright ban on smacking. Our analysis would tentatively support such a strategy as it has indicated that a reduction in the frequency that a child is smacked may moderate the effects, on child antisocial behaviour, of other parenting risk factors such as a lack of maternal warmth or high maternal negativity. Furthermore, our results have also shown that frequent smacking is highly associated with child antisocial behaviour even in households which are both high in warmth and low in negativity. Therefore, a focus on reducing the frequency that children are smacked may be beneficial in relation to children's behaviour. However, having said that more research is needed to untangle the causal relationship between smacking and child antisocial behaviour and it may be worthwhile for future longitudinal research to examine the frequency of smacking as opposed to whether a parent smacks or does not smack. Lastly, our research has indicated that it is negative interactions as opposed to a lack of positive interactions which are associated with child antisocial behaviour and this suggests that interventions may not only need to address reductions in the frequency of smacking but also may need to address parental negative attitudes. Interventions specifically designed to decrease the levels of negative interactions and at the same time increase the levels of parental warmth, and responsiveness towards their child may especially aid younger mothers who may have multiple parenting problems.

CHAPTER 7

FAMILY STRUCTURE, MARITAL CONFLICT AND CHILD

ANTISOCIAL BEHAVIOUR

7.1: INTRODUCTION

In Chapter 6 we examined how far parenting behaviour and maternal attitude were associated with child antisocial behaviour. However, we have suggested that it is important in studies of child development to extend analysis beyond parenting and examine how child behaviour is influenced by the wider context in which children live (Bronfenbrenner 1979). Following an Ecological Model, we, therefore, extend our analysis beyond the realm of parenting and examine the effect of the wider context on the development of antisocial behaviour. In this present chapter, we examine the effects of family structure, and marital conflict on child antisocial behaviour, whilst in Chapter 8 we examine the effects of poverty and parental antisocial behaviour.

Previous research has indicated that both family structure and marital conflict are associated with increases in child behavioural problems (Kiernan 2000; 1999; 1997; Cherlin et al 1991; Hetherington & Clingempeel 1992; Elliott & Richards 1991; Ferri 1984; Fincham 1994; Cummings & Davies 1994; Crockenberg & Covey 1991; Kolbo, Blakely & Engleman 1996; Margolin 1998). However, it has been argued that marital conflict may have a stronger association with child behavioural problems than family structure and that marital conflict may also explain much of the association found

between family structure and child adjustment problems (Amato 1994; Demo & Acock 1996; Furstenberg 1988). In this chapter we aim to determine to what extent these two factors separately and jointly predict antisocial behaviour in children aged five years old.

7.1.1: Family Structure

The rise in divorce and the increase in lone motherhood, repartnering and cohabitation are some of the most significant developments in family life over the last decades and researchers are increasingly interested in the effects of this family change on child outcomes (Kiernan 2000; Hobcraft 1998; Wadsworth et al 1985). Previous studies which have focused on family structure have shown that children and adolescents in lone parent families, and stepfamilies show higher rates of behavioural problems, substance abuse, under-achievement and disadvantage than those in never-divorced two parent families (Kiernan 2000; 1999; 1997; Cherlin et al 1991; Hetherington & Clingempeel 1992; Elliott & Richards 1991; Ferri 1984). Ferri (1976) examining the behaviour of children aged 11 years old in one and two parent households found that at school, children of one parent families had poorer behaviour than children in two parent households, however the significance dropped when other factors, such as low income, were controlled for. Moreover, McCulloch, Wiggins, Joshi and Sachdev (2000) using the National Child Development Study found evidence that girls who were born to a 'solo' mother were more likely to be reported as having higher levels of externalising behavioural problems than girls who were not. Furthermore, a variety of studies have also reported that children of divorced parents experience more adjustment problems than children who

grow up in nuclear families (Kiernan 1997; Amato & Keith 1991; Simons et al 1996) and research indicates that the effects of parental divorce can continue into adulthood (Kiernan 1997; Kiernan 1992; Amato & Keith 1991).

Previous research has also indicated that children growing up in stepfamilies appear to be similar in terms of frequency of behavioural problems to children growing up in single parent families as opposed to children whose parents have always been married to one another (Amato 1994; Cherlin & Furstenberg 1994; Kiernan 1992; Wadsworth et al 1985). The evidence indicates that children in step-parent families have a poorer prognosis in terms of later homelessness and contact with the police (Hobcraft 1998), are more likely to become teenage mothers (Kiernan 1992) and are significantly more likely to have disruptive behaviour (Elliott and Richards 1991).

7.1.2: Marital Conflict

Previous research has indicated that marital conflict is associated with a range of behavioural and emotional problems for children who are exposed to it (Fincham 1994; Cummings & Davies; Crockenberg & Covey 1991; Kolbo, Blakely & Engleman 1996; Margolin 1998). The literature points to at least two hostile marital conflict styles: overt (physical or verbal or both) and covert (i.e. trying to get the child to side with one parent, denigrating the other parent in front of child) (Buehler et al 1997). The latter has been found to be associated with internalising problems, such as depression and anxiety, and

the former with externalising problems (Buehler et al 1998; Jouriles et al 1989; Wolfe, Jaffe, Wilson & Zak 1985). In this analysis we concentrate on the effects of overt styles of marital conflict such as domestic violence, and verbal marital conflict, for example, quarrelling between parents and disagreement about child-rearing. We concentrate on these styles of marital conflict as previous research has found that marital conflict, both verbal and physical, has a stronger effect on child behavioural outcomes than global marital satisfaction (Cummings, Davies & Simpson 1994; Jouriles, Barling & O'Leary 1987) or global marital distress (Coiro & Emery 1998). Moreover, marital conflict over childrearing has been found to be an even better predictor than general marital conflict (Davies & Cummings 1994).

7.1.3: Marital Conflict, Family Structure and Child Antisocial Behaviour

Previous research has provided evidence that both marital conflict, and family structure are independently associated with child behavioural problems. However, researchers have also suggested that family process, for example marital relations and marital conflict, may be more important in relation to child behavioural problems than family structure (Amato 1994; Demo & Acock 1996). It is hypothesised, for example, that marital conflict may explain the higher rate of child adjustment problems found amongst the children of parents who are divorced (Amato 1993; Amato & Keith 1991; Cherlin 1992). Children, it is argued, who experience divorce are more likely to have had prolonged exposure to parental marital conflict and it is the marital conflict, which preceded the divorce, which increases the rate of child behavioural problems found

amongst these children. Therefore, it may be possible that marital conflict is a key factor in the association between family structure and child antisocial behaviour.

7.1.4: Research Questions

Our analysis uses the 'Life History Calendar' (LHC), which was collected in the study, to enable us to examine parental marital or relationship transitions throughout the children's lifetime from birth until their fifth birthday (see Chapter 5 for discussion of LHC). We divide our sample into five groups to reflect the dynamic nature of family structure (see Chapter 5 for more detail). These groups are always married, cohabiting, always 'solo', stepfamilies and divorced/separated. In relation to marital conflict we focus on three indicators: disagreement about childrearing, parental quarrelling and domestic violence. We examine these three factors independently of each other as opposed to combining them into an index to measure marital conflict *per se*, as previous research has shown that disagreement about childrearing may have a stronger association with behavioural outcomes than more global measures such as marital satisfaction (Davies & Cummings 1994; Cummings, Davies & Simpson 1994; Jouriles, Barling & O'Leary 1987) or global marital distress (Coiro & Emery 1998). As a result combining our three marital conflict indicators into one may lessen the effect of our marital conflict variable *per se* as well as not allowing an in depth study of which aspect of marital conflict may carry the most risk. Examining the three marital conflict variables independently of each other allows us to estimate their relative contribution to child antisocial behaviour at age 5 years old, and allows us to unpack marital conflict as a measure. Our three research questions are:

1. How far do levels of child antisocial behaviour differ for our five family structure groups?
2. How far is disagreement about childrearing, parental quarrelling and domestic violence associated with child antisocial behaviour?
3. To what extent do marital conflict and family structure jointly predict child antisocial behaviour?

7.2: RESULTS

7.2.1: To what extent is Family Structure associated with Child Antisocial Behaviour?

We examined our five family structure groupings (always married, always 'solo', cohabiting, separated/divorced, and stepfamilies) and child antisocial behaviour as rated by the mother and teacher. There was a moderate to strong positive association between the family structure groups and child antisocial behaviour as reported by the mother (Table 7.1) and teacher (Appendix 11). Examining the groups in more detail showed that both the always 'solo' families and stepfamilies were the most likely to have children with high antisocial behaviour. Cohabiting families were more likely to have children with moderate to high antisocial behaviour, whilst the separated and divorced were as likely to have a child in any of the four antisocial behaviour categories. The always married group were the only group to be more likely to have a child with low or no antisocial behaviour, and there was a moderate to strong negative association between

this group and antisocial behaviour. As antisocial behaviour increased the likelihood of an always married family having a child with antisocial behaviour decreased.

Examining the sample according to the mother's age at first birth showed that for younger mothers, all family structure groups, with the exception of the always married, were more likely to have a child with high antisocial behaviour (Table 7.1 for mother report⁷⁸). The always married younger mothers were as likely to have a child in any of the four antisocial behaviour groups. Examining the older mother group indicated that the always married older mothers were the only group more likely to have a child with no or low antisocial behaviour (mother report). All the other groups were more likely to have children with some degree of antisocial behaviour. For example, older mothers who were separated or divorced or part of a stepfamily were more likely to have a child with moderate antisocial behaviour, cohabiting older mothers were more likely to have a child with moderate to high antisocial behaviour, whilst older mothers who were always 'solo' mothers were more likely to have a child with moderate antisocial behaviour.

7.2.2 To what extent is Disagreement about Child Rearing associated with Child Antisocial Behaviour?

There was a moderate association between child antisocial behaviour as reported by the mother and disagreement about child rearing for the 'all' mother weighted sample (Table 7.2). As disagreement about child rearing increased so did the child's antisocial

⁷⁸ The teacher report for child antisocial behaviour and family structure according to sample group was not significant for both older and younger mothers.

behaviour levels. The teacher report on child antisocial behaviour and disagreement about child-rearing was not significant for the weighted sample or for the older mother sample, but was significant for the younger mother sample.

Examining the mother's report on child antisocial behaviour and the sample according to the mother's age at first birth showed moderate to strong associations for both younger and older mothers (Table 7.2). Younger mothers, however, were almost twice as likely as older mothers to have a child with high antisocial behaviour if they reported high disagreement about child rearing (40 per cent to 22 per cent). Furthermore, examining the no or low disagreement about childrearing groups shows that younger mothers were substantially more likely to report higher antisocial behaviour in their children than older mothers even when both groups report no or low disagreement (44 per cent compared to 30 per cent).

Table 7.1: Descriptive Statistics for Child Antisocial Behaviour (Mother's Report) according to Family Structure

CHILD ASB	SAMPLE	FAMILY STRUCTURE				
		Sep/Div	Stepfamily	Married	Cohabiting	Always Solo
No/Low ASB	Weighted	22.17 (55)	19.39 (22)	34.46 (510)	20.77 (63)	7.50 (5)
	Age<=20	14.22 (31)	17.16 (23)	24.33 (109)	22.36 (55)	9.72 (7)
	Age>=21	29.55 (26)	25.00 (7)	36.24 (308)	18.97 (22)	5.00 (1)
Mod ASB	Weighted	25.62 (64)	24.33 (28)	27.91 (413)	22.26 (68)	29.06 (20)
	Age<=20	18.81 (41)	20.90 (28)	24.55 (110)	17.89 (44)	20.83 (15)
	Age>=21	31.81 (28)	28.57 (8)	28.71 (244)	25.86 (30)	40.00 (8)
Mod/High ASB	Weighted	26.69 (67)	23.13 (27)	23.39 (346)	29.98 (91)	26.02 (18)
	Age<=20	28.90 (63)	25.37 (34)	26.12 (117)	30.08 (74)	23.61 (17)
	Age>=21	25.00 (22)	21.43 (6)	22.94 (195)	30.17 (35)	30.00 (6)
High ASB	Weighted	25.52 (64)	33.15 (38)	14.24 (211)	26.99 (82)	37.42 (26)
	Age<=20	38.07 (83)	36.57 (49)	25.00 (112)	29.67 (73)	45.83 (33)
	Age>=21	13.64 (12)	25.00 (7)	12.11 (103)	25.00 (29)	25.00 (5)

Weighted = Chi2 112.42, df12, p=0.000

Age<=20 (Younger Mothers) = Chi2 33.80, DF12, P=0.001

Age>=21 (Older Mothers) = Chi2 35.50, df12, p=0.000

Table 7.2: Descriptive Statistics for Disagreement about Child-rearing and Child Antisocial Behaviour (Mother's Report)

Child ASB	Sample	Missing Data	No/Low Disagree	Mod Disagree	High
No/Low ASB	Weighted	15.79 (48)	38.47 (327)	23.32 (104)	17.68 (110)
	Age<=20	11.68 (25)	30.43 (112)	20.80 (47)	12.75 (39)
	Age>=21	25.56 (23)	44.61 (215)	25.91 (57)	22.47 (71)
Mod ASB	Weighted	23.36 (71)	28.00 (238)	26.01 (116)	21.55 (134)
	Age<=20	18.22 (39)	25.54 (94)	22.57 (51)	17.32 (53)
	Age>=21	35.56 (32)	29.88 (144)	29.55 (65)	25.63 (81)
Mod/High ASB	Weighted	25.99 (79)	20.47 (174)	28.92 (129)	30.06 (187)
	Age<=20	27.10 (58)	23.38 (86)	30.52 (69)	30.06 (92)
	Age>=21	23.33 (21)	18.26 (88)	27.27 (60)	30.06 (95)
High ASB	Weighted	34.87 (106)	13.06 (111)	21.75 (97)	30.71 (191)
	Age<=20	42.99 (92)	20.65 (76)	26.11 (59)	39.87 (122)
	Age>=21	15.56 (14)	7.25 (35)	17.27 (38)	21.84 (69)

Weighted = Chi2 135.45, df6, p=0.000, Gamma = 0.32

Age<=20 (Younger Mothers) = Chi2 55.15, df6, p=0.000, Gamma =0.29

Age>=21 (Older Mothers) = Chi2 77.91, df6, p=0.000, Gamma =0.33

7.2.3: To what extent is Parental Quarrelling associated with Child Antisocial

Behaviour ?

There was a moderate association for the 'all' mother sample between child antisocial behaviour as rated by the mother and parental quarrelling (Table 7.3). As quarrelling increased so did the child's antisocial behaviour. The teacher report for child antisocial behaviour for all three sample groups was not significant. Examining the sample according to the mother's age at first birth showed that there was a significant association for child antisocial behaviour as rated by the mother and parental quarrelling for both younger and older mothers (Table 7.3). Younger mothers who reported high quarrelling were substantially more likely than older mothers to have a child with high antisocial behaviour

(43 per cent to 20 per cent). Furthermore, younger mothers were substantially more likely than older mothers to have a child with higher antisocial behaviour if both groups reported no or low quarrelling (42 per cent to 30 per cent).

Table 7.3: Descriptive Statistics for Parental Quarrelling and Child Antisocial Behaviour (Mother's Report)

Child ASB	Sample	No/Low Quarrel	Moderate Quarrel	High Quarrel
No/Low ASB	Weighted	37.22 (367)	20.86 (111)	16.07 (108)
	Age<=20	29.74 (116)	16.43 (46)	13.98 (59)
	Age>=21	42.11 (251)	25.79 (65)	19.60 (49)
Mod ASB	Weighted	29.11 (287)	24.06 (128)	19.79 (133)
	Age<=20	27.69 (108)	22.14 (62)	14.22 (60)
	Age>=21	30.03 (179)	26.19 (66)	29.20 (73)
Mod/High ASB	Weighted	20.69 (204)	29.33 (9156)	29.76 (200)
	Age<=20	24.62 (96)	29.29 (82)	28.67 (121)
	Age>=21	18.12 (108)	29.37 (74)	31.60 (79)
High ASB	Weighted	12.98 (128)	25.75 (137)	34.38 (231)
	Age<=20	17.95 (70)	32.14 (90)	43.13 (182)
	Age>=21	9.74 (58)	18.65 (47)	19.60 (49)

Weighted = Chi2 190.52, df6, p=0.000, Gamma = 0.35

Age<=20 (Younger Mothers) = Chi2 88.09, df6, p=0.000, Gamma =0.33

Age>=21 (Older Mothers) = Chi2 68.21, df6, p=0.000, Gamma =0.31

7.2.4: To what extent is Domestic Violence associated with Child Antisocial

Behaviour?

There was a moderate association for the 'all' mother sample for child antisocial behaviour as rated by the mother and teacher and domestic violence. As domestic violence increased so did the likelihood that a child would be rated as having higher antisocial behaviour (Table 7.4 and Appendix 12). Comparing the sample according to whether a mother was a younger or older mother showed that there was a significant association for child antisocial behaviour as rated by the mother and domestic violence for both groups (Table 7.4). However,

younger mothers were more likely than older mothers to have a child with high antisocial behaviour even if both groups reported high domestic violence. Furthermore, younger mothers were more likely to have a child with higher antisocial behaviour even when both groups reported no or low domestic violence. The teacher report on child antisocial behaviour and domestic violence was only significant for younger mothers (Appendix 12).

Table 7.4: Descriptive Statistics for Domestic Violence and Child Antisocial Behaviour (Mother's Report).

Child ASB	Sample	No/Low Domvio	Moderate Domvio	High Domvio
No/Low ASB	Weighted	34.50 (432)	20.63 (59)	14.57 (95)
	Age<=20	27.87 (136)	16.89 (25)	13.16 (60)
	Age>=21	38.74 (296)	24.64 (34)	17.86 (35)
Mod ASB	Weighted	28.19 (353)	23.78 (68)	19.48 (127)
	Age<=20	26.64 (130)	16.89 (25)	16.45 (75)
	Age>=21	29.19 (223)	31.16 (43)	26.53 (52)
Mod/High ASB	Weighted	21.33 (267)	29.37 (84)	32.05 (209)
	Age<=20	21.31 (104)	31.08 (46)	32.68 (149)
	Age>=21	21.34 (163)	27.54 (38)	30.61 (60)
High ASB	Weighted	15.98 (200)	26.22 (75)	33.90 (221)
	Age<=20	24.18 (118)	35.14 (52)	37.71 (172)
	Age>=21	10.73 (82)	16.66 (23)	25.00 (49)

Weighted = Chi2 165.32, df6, p=0.000, Gamma =0.35
Age<=20 (Younger Mothers) = Chi2 65.76, df6, p=0.000, Gamma =0.28
Age >=21 (Older Mothers) = Chi2 54.64, df6, p=0.000, Gamma = 0.32

7.2.5: Does Disagreement about Childrearing have a stronger association with Child Antisocial Behaviour than Parental Quarrelling or Domestic Violence?

We have shown in the above sections that disagreement about childrearing, parental quarrelling and domestic violence are all associated with increases in child antisocial behaviour as reported by the mother. However, the teacher reports on child antisocial behaviour showed that only domestic violence was associated with increases in child

antisocial behaviour. Previous research, however, has shown that disagreement about childrearing is a better predictor of child antisocial behaviour than general marital conflict (Davies & Cummings 1994). In this section we examine for our sample whether disagreement about childrearing is a better predictor, than domestic violence or parental quarrelling, of child antisocial behaviour. We entered our three marital conflict variables, disagreement about childrearing, parental quarrelling and domestic violence into an ordered logistic regression model. The dependent variables was child antisocial behaviour as reported by the mother and the teacher. Table 7.5 below and Appendix 13 show our results. We can see that all three indicators of marital conflict are significantly associated with child antisocial behaviour as rated by the mother⁷⁹. However, it is also evident, for the 'all' mother and older mother sample, that disagreement about childrearing appears to have a stronger relationship with child antisocial behaviour as reported by the mother than both parental quarrelling and domestic violence. For younger mothers, however, both disagreement about childrearing and domestic violence have a greater association with child antisocial behaviour than parental quarrelling. The teacher report, however, does not confirm these results and only domestic violence is significantly associated with child antisocial behaviour for younger mothers (Appendix 13).

⁷⁹ Examining the teacher report on child antisocial behaviour, however, shows that only domestic violence was significant for younger mothers.

Table 7.5: Coefficients for Marital Conflict Variables and Child Antisocial Behaviour (Mother's Report).

Marital Conflict	Sample Group	Coefficient
Disagreement about childrearing	Weighted	.4500283***
	Age<=20	.3736676***
	Age>=21	.4780092***
Parental Quarrelling	Weighted	.3664789***
	Age<=20	.208592*
	Age>=21	.3508771***
Domestic Violence	Weighted	.3271451***
	Age<=20	.3778392***
	Age>=21	.3009589**

***=0.001, **=0.01, *=0.05

7.2.6: Family Structure, Marital Conflict and Child Antisocial Behaviour.

So far we have examined family structure and marital conflict independently of one another. In this section we enter family structure, and marital conflict into a multivariate ordered logistic regression model to examine their relative contribution to child antisocial behaviour at age 5 years old. Examining Table 7.6 below, for the weighted 'all' mother sample, shows that once family structure and marital conflict are entered into the same model, all family structure groups, with the exception of those who cohabit, lose their previous significance. All of our three marital conflict variables, however, retain significance. This suggests, therefore, that marital conflict has a stronger association with child antisocial behaviour as rated by the mother than family structure, and that once marital conflict is controlled for in a model associations between stepfamilies, the always solo, the separated/divorced and child antisocial behaviour disappear. This, however, is not the case for those families who cohabit, as there is still a significant association between these families and child antisocial even when marital conflict is controlled for. The co-efficients for the teacher report on child

antisocial behaviour show that family structure and marital conflict were all non-significant for the weighted sample.

Table 7.6: Multivariate Model for Family Structure, Marital Conflict and the Mother's Report on Child Antisocial Behaviour (Weighted 'All' Mother Sample)

Variable	Coef	95% CI	
Separated/Divorced ¹	-.0094421	-.5336681	.51478
Stepfamilies	.5144304	.0890749	.93978
Cohabiting	.5156217***	.2272235	.8040
Always Solo	.8048304	-.2401215	1.84987
Disagree about Childrearing	.4378698***	.3082213	.567518
Parental Quarrelling	.367979***	.1282596	.433091
Domestic Violence	.2806756***	.1282596	.433091
Cut1	00.11054	.0890294	
Cut2	1.248908	.0919719	
Cut 3	2.618962	.1104407	

Ref Group: ¹Always Married

Table 7.7 below examines a multivariate model containing family structure, marital conflict and child antisocial behaviour for the younger mother sample. Once marital conflict and family structure are entered into the model, all family structure groupings lose their previous significance. The marital conflict variables all retain significance with the exception of parental quarrelling. Therefore, for younger mothers there is a stronger relationship between disagreement about childrearing, domestic violence and child antisocial behaviour as rated by the mother, and once these variables are entered into a model alongside parental quarrelling and family structure, the latter two lose significance. This was partially confirmed by the model for the teacher report on child antisocial behaviour where only domestic violence retained significance (Appendix 13).

Table 7.7: Multivariate Model for Family Structure, Marital Conflict and the Mother's Report on Child Antisocial Behaviour (Younger Mother Sample)

Variable	Coef	95% CI	
Separated/Divorced ¹	.0106618	-.5580712	.579394
Stepfamilies	.3114765	-.1410844	.764037
Cohabiting	.095703	-.2428326	.434238
Always Solo	.7456244	-.252734	1.74398
Disagree about Childrearing	.3868983***	.2095594	.564237
Parental Quarrelling	.1762203	-.0010306	.353471
Domestic Violence	.3871691***	.193265	.581073
Cut1	-.4152176	.139668	
Cut2	.6985885	.1376253	
Cut3	1.973243	.160694	

Ref Group: ¹Always Married

Table 7.8 below depicts a model for older mothers containing family structure, marital conflict and child antisocial behaviour as rated by the mother. This model for older mothers is almost identical to the model for the weighted 'all' mother sample. Once family structure and marital conflict are entered in to the model, the previous association between family structure and child antisocial behaviour loses significance. The only family structure grouping to retain significance are those who cohabit whilst all marital conflict variables retain significance. The model for the teacher report on child antisocial behaviour, however, was non-significant (Appendix 13).

Table 7.8: Multivariate Model for Family Structure, Marital Conflict and the Mother's Report on Child Antisocial Behaviour (Older Mother Sample)

Variable	Coef	95% CI	
Separated/Divorced ¹	-.3075464	-1.140695	.525602
Stepfamilies	.2064132	-.6165542	1.02938
Cohabiting	.6263736**	.1983044	1.05444
Always Solo	-.219674	-.5180761	.078728
Disagree about Childrearing	.4636519***	.2996317	.627672
Parental Quarrelling	.3555592***	.1664835	.544634
Domestic Violence	.2896492**	.0825332	.496765
Cut1	.0562984	.1056133	
Cut2	1.358961	.1126941	
Cut3	2.807997	.1410366	

Ref Group: ¹Always Married

7.3: DISCUSSION

Previous research has shown that lone parents and stepfamilies are more likely to have children with high antisocial behaviour. In this chapter we examined how far levels of child antisocial behaviour differed according to our five family structure groups. Our five family structure groupings were always married, cohabiting, always solo, separated or divorced and stepfamilies. We found evidence to suggest that the always 'solo' mothers and stepfamilies were the most likely of all the groups to have a child with high antisocial behaviour as rated by the mother and teacher. Moreover, cohabiting families and those who were separated or divorced were as likely to have a child in any of the four antisocial behaviour groups. Only the always married were more likely to have a child with no or low antisocial behaviour as opposed to any other antisocial behaviour rating. Therefore, we can see that being always 'solo' or being part of a stepfamily is associated with increases in child antisocial behaviour. Furthermore, it is evident that there are differences in levels of child antisocial behaviour between cohabiting families and those families who were always married. Cohabiting families were very similar to those families who had undergone a divorce or separation in that their children were as likely to be in any of the antisocial behaviour categories.

Turning our attention to the sample according to the mother's age at first birth showed that younger mothers were much more likely to have a child with high antisocial behaviour as rated by the mother if they were separated or divorced, part of a stepfamily, cohabiting or always 'solo'. When younger mothers were always married they were as likely to have a child in any of the four antisocial behaviour groups. For older mothers, only those mothers

who were always married were more likely to have a child with no or low antisocial behaviour as rated by the mother. All other family structure groups for older mothers were more likely to have some level of child antisocial behaviour. It could be argued, therefore, that being always married may act as a protective factor in relation to child antisocial behaviour, especially for the children of younger mothers⁸⁰.

Our research gives partial support to previous research which has found a link between marital conflict and child antisocial behaviour. We examined three variables which assessed marital conflict; disagreement about child-rearing, parental quarrelling, and domestic violence and found a moderate association between child antisocial behaviour as rated by the mother and all three marital conflict variables. As disagreement about child-rearing, parental quarrelling and domestic violence increased so did child antisocial behaviour as rated by the mother. However, this was not the case for the teacher report on child antisocial behaviour and all of the marital conflict variables were not significant.

Examining the sample according to the mother's age at first birth and child antisocial behaviour as rated by the mother showed that although all three marital conflict variables were significant for both older and younger mothers, the association was stronger for younger mothers. More interestingly, however, even when younger mothers reported no or low disagreement about childrearing, no or low quarrelling and no or low domestic violence, they were still more likely than older mothers who reported the same levels to have a child

⁸⁰ Teacher reports were not significant for younger and older mothers.

with higher antisocial behaviour. Again the teacher reports for marital conflict according to sample group were non-significant, except for domestic violence for younger mothers.

We then examined which of our three indicators of marital conflict had the strongest association with child antisocial behaviour as previous research had identified disagreement about childrearing as being one of the best predictors of child antisocial behaviour. We found that all three indicators of marital conflict, disagreement about childrearing, parental quarrelling and domestic violence were significantly associated with child antisocial behaviour as rated by the mother. However, it is also evident, for the 'all' mother and older mother sample, that disagreement about childrearing appears to have a stronger relationship with child antisocial behaviour (mother's report) than both parental quarrelling and domestic violence. Moreover, for younger mothers both disagreement about childrearing and domestic violence were found to have a greater association with child antisocial behaviour than parental quarrelling. The teacher report on child antisocial behaviour, however, only showed that domestic violence was significant for younger mothers. All other marital conflict variables were non-significant for the teacher report on child antisocial behaviour.

We then entered family structure and marital conflict into a multivariate model to assess their relative contribution to child antisocial behaviour as rated by the mother. Our results indicate that once marital conflict is controlled for, most family structure groupings lose their previous significant association with child antisocial behaviour. The one exception to this was the association between cohabiting families and child antisocial behaviour, which

retained significance, and was replicated when we examined the older mother sample. All marital conflict variables, however, retained significance for all three sample groups. This suggests, therefore, that marital conflict may have a stronger association than family structure with child antisocial behaviour as rated by the mother and may mediate the effects of family structure on child antisocial behaviour. The only exception to this is for those families who cohabit. Even controlling for marital conflict, there is still a significant association between cohabitation and child antisocial behaviour as rated by the mother, and this association is especially the case for older mothers. However, the teacher report on child antisocial behaviour did not confirm these results and all variables were insignificant, bar domestic violence for younger mothers.

7.4: CONCLUSIONS

The findings of the present chapter may have a number of implications for research on family structure and marital conflict as well as on policy for children with antisocial behaviour. Our first finding, in relation to family structure, was that both the always 'solo' mothers and stepfamilies were the most likely to have a child with higher antisocial behaviour ratings, and the always married were the least likely to have a child with high antisocial behaviour. Furthermore, we found that the children of parents who cohabited were more similar to the children of parents who divorced in terms of levels of antisocial behaviour. This finding has implications for research which examines family structure as a binary phenomenon, for example, one parents vs. two parent families. If we had combined stepfamilies and the always married into one group called 'two parent' families, the

variability which exists within this group of two parent families, in relation to child antisocial behaviour, would have not been apparent. In our exploratory analysis, (not presented in the thesis), we did compare child antisocial behaviour in one parent families to two parent families, and found that one parent families were more likely to have higher child antisocial behaviour than two parent families, however, it is only when family structure was broken down into more discrete groups that we become fully aware of which family structures are associated with the greatest risk of child antisocial behaviour. It is, therefore, we suggest, not helpful, in the case of child antisocial behaviour, to compare one parent families to two parent families, and this relates not only to research but also to policy issues. Our second finding, in relation to marital conflict, was that although all of our three marital conflict variables, disagreement about childrearing, parental quarrelling and domestic violence, were significantly associated with child antisocial behaviour, disagreement about childrearing appeared to have the strongest association. This confirmed the results of previous research. However, this was only relevant to the mother's report on antisocial behaviour, and when the teacher report on antisocial behaviour was utilised disagreement about child-rearing was not significant. The only marital conflict variable to retain significance for the teacher report on child antisocial behaviour was domestic violence for the younger mother group. One possible explanation for the differences found between the two reports of child antisocial behaviour could be that the mother attributes blame for all arguments in the household to the child's behaviour and as a result there will be an association between disagreements about child-rearing and child antisocial behaviour.

We also found that, for younger mothers, the absence of marital conflict did not necessarily bring about a reduction in child antisocial behaviour as reported by the mother. However, the presence of marital conflict substantially increased the risk of child antisocial behaviour for the children of younger mothers⁸¹. Again, we find that there may be added risks associated with being a younger mother which means that even when the risk is absent, for example households where there is no domestic violence, there is still an increased risk of child antisocial behaviour. This is not the case for older mothers. Future research and policy, therefore, on both family structure and marital conflict may need to take into account the mother's age at first birth when interpreting results.

Finally, we introduced family structure and marital conflict into a multivariate model and found that family structure, on the whole, lost any significant association with child antisocial behaviour as reported by the mother whilst marital conflict retained significance. However, the teacher report on child antisocial behaviour indicated that only domestic violence retained significance for younger mothers, all other co-efficients were non-significant. Previous studies which have focused on family structure have shown that children in lone parent families and stepfamilies have higher rates of behavioural problems, substance abuse, under-achievement and disadvantage than those in never-divorced two parent families (Kiernan 2000; 1999; 1997; Cherlin et al 1991; Hetherington & Clingempeel 1992; Elliott & Richards 1991). However, it has also been argued by these authors that neither family disruption nor deprivation *per se* accounts for this. Rather it would seem from the available literature that the children's upbringing particularly the nature and consistency of the care provided by and their relationship with their parents may be the most influential

⁸¹ The teacher report was not significant.

(Utting et al 1993). Many researchers have concluded, therefore, that family process is more important than family type or structure in influencing children's adjustment (Amato 1994; Demo & Acock 1996) and that marital disagreements, for example, may be a key factor in the association with particular family forms and poorer child outcomes (Furstenberg 1988). Our findings would appear to tentatively support these conclusions, and it may be that family structure is associated with child behavioural problems, not as a result of family structure *per se*, but as a result of the marital conflict which occurs within the family, and which may have been the important factor in the breakdown of the relationship⁸². This would appear to be more pertinent for young mothers.

⁸² This finding was only relevant to the mother's report on child antisocial behaviour.

CHAPTER 8

SOCIAL EXCLUSION AND CHILD ANTISOCIAL BEHAVIOUR

8.1: INTRODUCTION

In this chapter we continue to extend our analysis beyond parenting (Bronfenbrenner 1979) by examining the effect of two indicators of social exclusion on child antisocial behaviour. We examine the effect of social exclusion on a child's behavioural development as previous research has indicated that many socially excluded children may be at risk of developing antisocial behavioural problems (Farrington 2000; Farrington and West 1993). Furthermore, research has shown that childhood antisocial behaviour predicts adverse economic, social, educational, psychological and physical health problems in adulthood (Pugh 1998; Rutter 1995, Scott 1998), and is one of the strongest predictors of adult antisocial behaviour and crime (Loeber and Dishion 1983, Scott 1998). We use two potential indicators of social exclusion: poverty, and, more unusually, parental antisocial behaviour, and assess their relative contribution to child antisocial behavioural outcomes at age 5 years old. The measure of poverty used in this analysis comprises a combined index which measures multiple deprivation. The poverty index consists of measures of income, housing tenure, receipt of benefits, unemployment and the use of a car. We also examine parental antisocial behaviour as a dimension of social exclusion as previous research has shown that individual values, behaviour and emotional states may lead to social exclusion (Levitas 1998). Moreover, we utilise the sampling frame of the E-Risk study and examine teenage parenting in more depth. We examine teenage parenting as previous research has

shown that teenage mothers are more likely to be social excluded and their children more likely to be disadvantaged (Social Exclusion Unit 1999).

8.1.1: What is Social Exclusion?

There is no one definition of social exclusion and any analysis which purports to examine social exclusion has to grapple with the dilemma of defining the term social exclusion. It is evident from the previous literature that social exclusion relates to more than poverty; however, it is also evident that poverty is a key component of social exclusion (Burchardt et al 2002). The Social Exclusion Unit defines social exclusion as 'a shorthand label for what can happen when individuals or areas suffer from a combination of linked problems such as unemployment, poor skills, low incomes, poor housing, high crime environments, bad health and family breakdown' (SEU 1997). However, there is no agreed definition of social exclusion. Other possible definitions are the 'inability to participate effectively in economic, social, political and cultural life....., alienation and distance from the mainstream society' (Duffy 1995), and 'if he or she does not participate in key activities of the society in which he or she lives' (Burchardt et al 2002:30).

Atkinson (1998) suggests that three elements recur in discussions of social exclusion: relativity, agency and dynamics. The term relativity means that people are excluded from a particular society in a particular time and place. Agency refers to the premise that social exclusion can be voluntary or in most cases involuntary. Whilst dynamics is concerned with the individual's current poverty but also the likelihood of future poverty. Burchardt, Le

Grand and Piachaud (1999) use these three concepts to attempt to define social exclusion. They suggest that 'an individual is socially excluded if he or she is geographically resident in a society....he or she cannot participate in the normal activities of the citizens in that society....he or she would like to so participate but is prevented from doing so by factors beyond his or her control' (CASEreport 17 2001:57).

The lack of an agreed definition of social exclusion has resulted in different writers using the term social exclusion to focus on different issues; some focusing on individual behaviour and values; some on the role of institutions and the State and others on discrimination. The difficulty in defining the term social exclusion has led to the development of a possible model which identifies three different approaches to social exclusion (Levitas 1998). The first approach, which derives from critical social policy, sees social exclusion as a consequence of poverty. People are, therefore, socially excluded because they lack the monetary resources to participate in society. The second approach focuses on labour-force attachment, and paid work is seen as the primary means of integrating individuals of working age into society. The excluded are therefore, those who are 'workless'. The third approach is a moral underclass discourse which emphasises moral and cultural causes of poverty, and which is concerned with 'dependency'. Theorists who subscribe to this discourse focus on particular groups such as the unemployed, lone parents and potentially criminal and antisocial individuals (Murray 1990; 1999; Morris 1994). This approach identifies an association between poverty and social exclusion but sees the causes of poverty as lying in cultural and moral (self) exclusion rather than the other way round. It is evident,

therefore, that these three contrasting approaches have different views of the causal relations between social exclusion and outcomes for children and adults.

Levitas's model posits three possible approaches to the study of social exclusion. In this research we utilise two possible indicators of social exclusion which relate to the three approaches to social exclusion described by Levitas. Our poverty indicator comprises measures of material deprivation which correspond to approach one (poverty) and approach two (workless households). Our measure of parental antisocial behaviour can be seen to correspond to approach three (moral underclass). Using these two indicators of social exclusion our research assesses the relative contribution of poverty, and parental antisocial behaviour to child antisocial behaviour outcomes at age 5 years old. Furthermore, our analysis enables us to examine which of the approaches to social exclusion, if any, best explains antisocial behaviour in children. In the sections below we discuss the previous literature on the impact of poverty and parental antisocial behaviour on child behavioural outcomes before continuing to discuss our results.

8.1.2: Poverty

Research in Britain has shown that child poverty has increased considerably over the last 20 years and that the child poverty rate in Britain is one of the highest among industrial countries (UNICEF 2000; Bradshaw 2000). In 1998/9, it was estimated that one-third of children were living in poverty (Paichaud & Sutherland 2002), and this has a number of implications for child outcomes ranging from social exclusion in childhood to later social

exclusion in adulthood (Sparkes & Glennerster 2002; Kiernan 2002; Hobcraft 1998). Childhood poverty is also important in relation to behavioural outcomes as research has shown that children living in poverty have more behavioural problems than children who are not living in poverty (Seccombe 2000). They are more likely to suffer from depression, to have low self esteem, to have behavioural and conduct disorders and to do badly at school (Seccombe 2000; Conger, Conger & Elder 1997; Conger et al 1993; 1992; Farrington 1991; Takeuchi, Williams & Adair 1991). Furthermore, the longer the child lives in poverty the more increased is the risk for antisocial behaviour (Dubow and Ippolito 1994). However, although previous research has found an association between poverty and child behavioural outcomes, not all research has found a strong association between the two and this may, it is argued, be a result of the poverty indicator used. For example, research that focuses on family income as an index of poverty suggests that family income has a selective effect on children's development (Blau 1999; Duncan et al 1997) and it is important to examine the outcome. For example, verbal ability and cognitive achievement appear to be more affected by family income than problem behaviour (Duncan, Yeung, Brooks-Gunn & Smith 1998). Therefore, it has been suggested that it may be the case that family income, as an index of poverty, may have little or no effect on children's social development, including behaviour and mental health (Duncan & Brooks-Gunn 2000).

There is considerable debate in the UK about an appropriate definition of poverty. Some researchers define poverty in terms of income, whilst others argue that poverty should be measured in terms of lack of access to social necessities (Gordon et al 2000). The UK has

no official poverty line as such and government statistics are based on a relative⁸³ measure of poverty: the number of people whose income is less than 60 per cent of the national average. This measure is defined in two ways: before housing costs and after housing costs. There are, however, numerous difficulties in measuring income, and even if it could be measured accurately, income by itself clearly only measures part of people's standard of living or well being (see Hills 2001 for discussion). More recently the British Government has published a range of indicators by which it will judge its commitment to end child poverty within 20 years (DSS 1999; 2000). These indicators include the number of workless households, long term income support claimants, poor housing, and health outcomes to name but a few. Both researchers and policy-makers, therefore, have shown great interest in developing measures of deprivation which go beyond income (Hills 2001). In this research we examine the impact of poverty on child antisocial behaviour by utilising six indicators to measure poverty. These indicators include both the mother and partner's unemployment, income, receipt of benefits, Local Authority Housing, and use of a car (Gordon et al 2000; Mack & Lansley 1985; Townsend 1979; DES 1999).

8.1.3: Parental Antisocial Behaviour

Antisocial behaviour in Britain runs strongly from generation to generation within families (Huesmann et al 1984; Rowe and Farrington 1997). Previous research has found a strong relationship between the parent's antisocial behaviour and child antisocial behaviour. For example, in the Cambridge Study (Farrington 2000) 63 per cent of boys with convicted fathers were themselves convicted, as were 61 per cent of boys with convicted mothers.

⁸³ Absolute measures of poverty are used in the USA and relative measures of poverty used in the UK and

Furthermore, when official records are searched over 50 per cent of the offences are concentrated in approximately 6 per cent of all families (Farrington, Barnes and Lambert 1996). The association between parental antisocial behaviour and child antisocial behaviour could be a result of a number of factors. Firstly, it could in part reflect a genetic factor. A study of Scandinavian adoptees (Bohman 1996) found that children who had neither antisocial parents (i.e. no genetic risk) or environmental risks had a 3 per cent rate of adult criminality; those who had only one source of risk either genetic or environmental had a 6-12 per cent risk, whilst those who were characterised by both genetic and environmental risk had a 40 per cent risk of adult criminality. Bohman argues that environmental risk led to negative outcomes primarily in the presence of genetic risk. Secondly, the association between parental antisocial behaviour and disruptive behaviour in children may also be explained by the parent providing a model of aggression and antisocial attitudes and values for their children. This may be exacerbated as a result of individuals with antisocial histories being substantially more likely to have children with partners who also have antisocial backgrounds (Farrington Barnes and Lambert 1996). Thirdly, previous research has indicated that antisocial parents may be more likely to lack the skill necessary for competent parenting. A variety of recent studies have reported an inverse association between the mother's antisocial behaviour and the quality of parenting (Bank et al 1993; Capaldi & Patterson 1991; Patterson & Capaldi 1991; Sampson & Laub 1993; Simons et al 1996). However, although previous research has found an association between parental antisocial behaviour and child antisocial behaviour much of the research, which has taken place, has concentrated either entirely on the father's antisocial behaviour, ignoring the mother's, or focused entirely on the effects of parental antisocial behaviour on male children. In this

Europe.

research we use the E-Risk data-set and examine the effects of both the mother and father's antisocial behaviour on child antisocial behaviour.

8.1.4: Teenage mothers

Britain has the highest teenage pregnancy rate in Europe (Social Exclusion Unit 1999). This is of concern as research has shown that teenage mothers and their children experience a range of adverse outcomes in adulthood (Social Exclusion Unit 1999). A link has been made, therefore, between teenage childbearing, and later adverse outcomes. However, several studies have challenged the link between teenage parenting and later disadvantage by indicating that pre-existing differences between teenage mothers and older mothers, such as levels of poverty, may account for the difficulties that they and their children face in adulthood (Geronimus & Korenman 1992). As a result it may not be being a teenage mother *per se* which is the cause of later disadvantage but other factors, such as poverty, which make it more likely that the individual will become a teenage mother and be disadvantaged. We utilise the sampling frame of the E-Risk study to examine how far younger mothers as a group differ from one another, and how far they differ from a group of older mothers. We hypothesise that it is not being a younger mothers *per se* that results in children facing multiple risk factors, but being a younger mother with high antisocial behaviour. Younger mothers with low antisocial behaviour, we hypothesise, will be different to younger mothers with high antisocial behaviour in terms of both child antisocial behaviour and levels of poverty, and marital conflict. It may be, therefore, that pre-existing differences between younger mothers, for example, in levels of antisocial behaviour, may explain differences in

levels of poverty, marital conflict and child behavioural problems between younger mothers as a group and between older and younger mothers.

8.2: RESEARCH QUESTIONS

We utilise two measures of social exclusion and examine their impact on child antisocial behaviour at age 5 years old. Our first indicator of social exclusion is our combined poverty measure which includes family income (before housing costs), car ownership, social housing, last five years unemployment for the mother and partner and receipt of non-universal benefits (see Chapter 5 for more detail). The six poverty indicators were combined together to form a poverty measure which was then categorised into quartiles: no or low poverty, moderate poverty, moderate to high poverty, and high poverty.

Our second indicator of social exclusion is parental antisocial behaviour and this was measured by the mother being interviewed using Achenbach (1997) questionnaires. Both questionnaires were modified with the permission of Achenbach to gather data for the E-Risk Study about lifetime behaviour. Mothers reported their own histories of antisocial behaviour using the Young Adult Self Report (Achenbach 1997), and also reported on the biological father's antisocial behaviour using the Young Adult Behaviour Checklist (Achenbach 1997).

Our research questions are as follows:

1. How far is poverty is associated with child antisocial behaviour?
2. How far is parental antisocial behaviour associated with child antisocial behaviour?
3. Which of our two indicators of social exclusion contributes the most to child antisocial behaviour at age 5 years old.
4. To what extent do differences in levels of maternal antisocial behaviour explain differences between younger mothers in relation to child behavioural outcomes and multiple risk factors?

8.3: RESULTS

8.3.1: Poverty Indicators and Child Antisocial Behaviour

In Table 8.1 below we examine our six poverty indicators and their relationship to child antisocial behaviour at age 5 years old for all three sample groups, before continuing in Section 8.3.2 to examine the impact of our combined measure of poverty. Table 8.1 shows that all six of our poverty indicators are independently significantly associated with child antisocial behaviour at age 5 years old as measured by the mother for the weighted 'all' mother sample. The families of children with high antisocial behaviour were more likely to reside in Local Authority housing, they were more likely to have no car, to have claimed 2 or more benefits in the last year, they were likely to have an annual income of less than £14,999, and have a resident male father figure who was unemployed for more than a year. However, examining the teacher report on child antisocial behaviour (Appendix 14) shows that only housing tenure, access to a car, number of benefits claimed and income were

significantly associated with child antisocial behaviour. Parental unemployment was not significant.

Examining the sample according to the mother's age at first birth showed that the effect of our poverty indicators on child antisocial behaviour as rated by the mother were stronger for younger mothers. Younger mothers, for example, were almost twice as likely as older mothers to have a child with high antisocial behaviour if they did not have a car or had a partner with high unemployment. Therefore, it may be a possibility that poverty *per se* has more of an impact on the behavioural outcomes of the children of younger mothers. Furthermore, it may be that younger mothers are more likely to have additional risk factors, other than poverty, which increase the likelihood of their child having higher antisocial behaviour. The teacher's report on child antisocial behaviour and poverty were non-significant for both younger and older mothers (Appendix 15).

Table 8.1: Descriptive Statistics for our Poverty Indicators and Child Antisocial Behaviour (Mother's Report).

Poverty indicators	No/Low ASB	Mod ASB	Mod/High ASB	High ASB
<u>Weighted 'All' Mother Sample</u>				
Housing Tenure				
Own House	33.83 (545)	28.51 (459)	23.89 (385)	13.77 (222)
Rented Private	20.64 (25)	26.76 (32)	25.60 (31)	27.00 (32)
Rent LA	17.74 (87)	21.78 (107)	26.43 (129)	34.05 (167)
Chi2 153.72, df6, p=0.000, gamma = 0.36				
Access to Car				
No Car	13.92 (28)	22.63 (46)	27.45 (56)	36.00 (73)
Access Only	19.99 (18)	29.69 (28)	22.51 (21)	27.81 (26)
Own Car	31.66 (612)	27.19 (526)	24.45 (473)	16.70 (323)
Chi2 84.26, df6, p=0.000, gamma = 0.33				

Poverty indicators	No/Low ASB	Mod ASB	Mod/High ASB	High ASB
Number of Benefits Claimed in last year				
No Benefits	34.68 (514)	28.47 (422)	23.00 (341)	13.85 (205)
1 Benefit	24.49 (70)	27.72 (79)	27.63 (78)	20.16 (57)
>=2 Benefits	16.26 (75)	21.18 (98)	28.14 (130)	34.42 (159)

Chi2 158.01, df6, p=0.000, gamma =0.34

Mother's Unemployment/Inactivity in last five years				
No/Low	32.57 (277)	26.53 (225)	26.10 (222)	14.80 (125)
Moderate	29.31 (240)	25.61 (209)	23.80 (195)	21.28 (174)
High	25.13 (139)	29.34 (162)	23.82 (131)	21.71 (120)

28.83, df6, p=0.001, gamma =0.10

Partner's Unemployment in last five years				
No unemployment	31.32 (553)	27.71 (489)	23.59 (417)	17.38 (307)
< 1 year	22.33 (44)	31.71 (63)	27.92 (55)	18.04 (36)
> 1 year	22.76 (58)	17.71 (45)	29.08 (75)	30.45 (78)

Chi2 52.48, df6, p=0.000

Income in last year				
< £14,999	17.71 (89)	21.85 (111)	29.09 (147)	31.35 (159)
£15-19,999	28.62 (87)	26.57 (81)	23.94 (73)	20.87 (64)
>£20K	34.14 (450)	28.84 (380)	22.95 (303)	14.07 (185)

107.81, df6, p=0.000, gamma=0.28

Mother's Age<=20 (Younger Mothers)

Housing Tenure				
Own House	28.54 (121)	25.24 (107)	24.24 (104)	21.98 (92)
Rent Private	13.16 (10)	21.05 (16)	26.32 (20)	39.47 (30)
Rent LA	15.26 (94)	18.67 (115)	28.90 (178)	37.17 (229)

Chi2 51.61, df6, p=0.000, gamma =0.27

Use of a Car				
No Car	10.89 (27)	18.15 (45)	27.82 (69)	43.14 (107)
Access Only	19.05 (16)	19.05 (16)	22.62 (19)	39.28 (33)
Own Car	23.04 (182)	22.53 (178)	27.59 (218)	26.84 (212)

Chi2 34.40, df6, p=0.000, gamma =0.12

Number of Benefits Claimed in Last Year				
No Benefits	28.01 (107)	25.13 (96)	26.70 (102)	20.16 (77)
1 Benefit	18.93 (39)	24.76 (51)	24.27 (50)	32.04 (66)
>=2 Benefits	14.85 (79)	17.11 (91)	28.94 (154)	39.10 (208)

Chi2 54.30, df6, p=0.000, gamma =. 26

Mother's Unemployment/Inactivity over the last 5 years				
No/Low Unemployment	21.74 (60)	21.74 (60)	29.71 (82)	26.81 (74)
Moderate	20.30 (95)	23.29 (109)	27.14 (127)	29.27 (137)
High	18.28 (68)	18.82 (70)	25.80 (96)	37.10 (138)

Chi2 10.22, df6, p=0.115, gamma = .09

Partners' Unemployment over the last five years				
No Unemployment	22.62 (166)	21.93 (161)	25.75 (189)	29.70 (218)
< 1 Year	17.39 (24)	28.26 (39)	28.99 (40)	25.36 (35)
> 1 Year	14.23 (35)	15.85 (39)	30.49 (75)	39.43 (97)

Chi2 22.75, df6, p=0.001, gamma = .14

Income				
---------------	--	--	--	--

Poverty indicators	No/Low ASB	Mod ASB	Mod/High ASB	High ASB
<£14,999	16.61 (92)	18.77 (104)	28.16 (156)	36.46 (202)
£15-19,999	18.56 (36)	27.32 (53)	25.26 (49)	28.86 (56)
>£20,000	25.30 (83)	21.04 (69)	28.66 (94)	25.00 (82)

Chi2 22.76, df6, p=0.001, gamma = .16

Mother's Age >=21 (Older Mothers)

Housing Tenure

Own House	34.45 (328)	29.10 (277)	23.95 (228)	12.50 (119)
Rent Private	24.07 (13)	29.63 (16)	25.93 (14)	20.37 (11)
Rent LA	24.00 (24)	29.00 (29)	21.00 (21)	26.00 (26)

Chi2 18.08, df6, p=0.006, gamma = 0.09

Use of a Car

No Car	20.45 (9)	31.82 (14)	27.27 (12)	20.46 (9)
Access Only	21.88 (7)	40.62 (13)	21.88 (7)	15.62 (5)
Own Car	33.91 (350)	28.59 (295)	23.74 (245)	13.76 (142)

Chi2 6.89, df6, p=0.330, gamma = .17

Number of Benefits Claimed in Last Year

No Benefits	35.42 (311)	29.16 (256)	22.55 (198)	12.87 (113)
1 Benefit	28.45 (33)	29.31 (34)	30.17 (35)	12.07 (14)
>=2 Benefits	19.30 (22)	28.07 (32)	27.19 (31)	25.44 (29)

Chi2 23.60, df6, p=0.001, gamma = .21

Mother's Unemployment/Inactivity over the last 5 years

No/Low Unemployment	34.50 (167)	27.69 (134)	25.62 (124)	12.19 (59)
Moderate	33.51 (128)	26.44 (101)	22.51 (86)	17.54 (67)
High	29.17 (70)	35.83 (86)	22.50 (54)	12.50 (30)

Chi2 12.4, df6, p=0.053, gamma =0.02

Partners' Unemployment over the last five years

No Unemployment	33.58 (315)	29.53 (277)	23.13 (217)	13.76 (129)
< 1 Year	26.19 (22)	33.33 (28)	27.38 (23)	13.10 (11)
> 1 Year	32.93 (27)	19.51 (16)	28.05 (23)	19.51 (16)

Chi2 7.53, df6, p=0.274, gamma = .09

Income

<£14,999	19.85 (27)	26.47 (36)	30.89 (42)	22.79 (31)
£15-19,999	33.82 (46)	25.74 (35)	23.53 (32)	16.91 (23)
>£20,000	35.20 (276)	30.23 (237)	22.19 (174)	12.38 (97)

Chi2 22.75, df6, p=0.001, gamma = .19

8.3.2: Child Antisocial Behaviour and Poverty

There was a moderate association between child antisocial behaviour as rated by the mother and teacher and our combined index of poverty (Table 8.2 and Appendix 16). As poverty

increased so did the likelihood that a child would have high antisocial behaviour. Furthermore, as poverty decreased so did the child's antisocial behaviour. Examining the sample according to the mother's age at first birth showed that the association between poverty and child antisocial behaviour as rated by the mother was stronger for younger mothers than for older mothers. (Table 8.2). For example, thirty seven per cent of younger mothers who reported high poverty levels also reported high antisocial behaviour in their children as compared to twenty five per cent of older mothers (Table 8.2). Furthermore, it is evident from Table 8.2 that even when younger mothers report low poverty levels they were more likely than older mothers to report higher antisocial behaviour in their children. The teacher report on child antisocial behaviour and poverty was not significant for older and younger mothers.

Table 8.2: Descriptive Statistics for Child Antisocial Behaviour (Mother's Report) and Poverty

Child ASB	Sample	POVERTY		
		No/Low	Moderate	High
No/Low ASB	Weighted	35.53 (360)	29.90 (209)	17.44 (91)
	Age<=20	27.73 (61)	22.08 (68)	16.16 (96)
	Age>=21	36.27 (222)	32.07 (118)	20.31 (26)
Moderate ASB	Weighted	26.88 (272)	30.78 (215)	21.64 (112)
	Age<=20	25.00 (55)	24.02 (74)	18.52 (110)
	Age>=21	27.12 (166)	33.15 (122)	26.56 (34)
Moderate/High ASB	Weighted	23.17 (234)	24.42 (104)	27.80 (144)
	Age<=20	25.91 (57)	26.95 (83)	27.95 (166)
	Age>=21	23.04 (141)	23.64 (87)	28.13 (36)
High ASB	Weighted	14.42 (146)	14.90 (104)	33.12 (172)
	Age<=20	21.36 (47)	26.95 (83)	37.37 (222)
	Age>=21	13.57 (83)	11.14 (41)	25.00 (32)

Weighted = Chi2 131.49, df6, p=0.000, Gamma = 0.26
 Age<= 20 (Younger Mothers) = Chi2 32.24, df6, p=0.000, Gamma = 0.21
 Age >=21 (Older Mothers) = Chi2 25.87, df6, p=0.000, Gamma = 0.11

8.3.3: Child Antisocial Behaviour and the Mother's Antisocial Behaviour

There is a moderate to strong positive relationship between child antisocial behaviour as rated by the mother and the teacher and the mother's antisocial behaviour (Table 8.3 and Appendix 17). As the mother's antisocial behaviour increased so did the child's antisocial behaviour. Forty per cent of mothers with high antisocial behaviour also had a child with high antisocial behaviour. Whilst 51 per cent of mothers with no or low antisocial behaviour had children with no or low antisocial behaviour (Table 8.3).

Examining the sample according to the mother's age at first birth showed that the relationship between the mother and children's antisocial behaviour as rated by the mother was stronger for younger mothers, although it was also highly significant for older mothers (Table 8.3). Fifty percent of younger mothers who reported high antisocial behaviour in themselves also reported high antisocial behaviour in their children. Whilst 33 per cent of older mothers with high antisocial behaviour reported high antisocial behaviour in their children. When mothers reported no or low antisocial behaviour, they were more likely to report no or low antisocial behaviour in their children regardless of the mother's age. The effect, however, was slightly stronger for older mothers. Therefore, it is possible that a reduction in levels of maternal antisocial behaviour may act as a protective factor in relation to child antisocial behaviour. The teacher report on child antisocial behaviour and maternal antisocial behaviour was only significant for younger mothers (Appendix 17).

Table 8.3: Descriptive Statistics for Child Antisocial Behaviour (Mother's Report) according to the Mothers Antisocial Behaviour.

Child ASB	Sample	Mothers Antisocial Behaviour			
		No/Low	Moderate	Mod/High	High
No/Low ASB	Weighted	51.03 (412)	24.69 (118)	16.50 (80)	10.57 (48)
	Age<=20	41.74 (101)	23.39 (51)	12.50 (37)	9.67 (35)
	Age>=21	52.60 (243)	25.00 (62)	18.64 (41)	11.24 (20)
Moderate ASB	Weighted	27.60 (223)	32.07 (153)	28.12 (136)	19.02 (87)
	Age<=20	30.17 (73)	31.19 (68)	19.26 (57)	11.33 (41)
	Age>=21	27.27 (126)	32.26 (80)	32.27 (71)	25.28 (45)
Mod/High ASB	Weighted	15.20 (123)	29.09 (139)	31.39 (152)	29.52 (135)
	Age<=20	17.36 (42)	27.53 (60)	33.10 (98)	29.00 (105)
	Age>=21	14.72 (68)	29.44 (73)	31.36 (69)	30.33 (54)
High ASB	Weighted	6.17 (50)	14.15 (67)	23.99 (116)	40.89 (187)
	Age<=20	10.73 (26)	17.89 (39)	35.14 (104)	50.00 (181)
	Age>=21	5.41 (25)	13.31 (33)	17.73 (39)	33.15 (59)

Weighted = Chi2 486.35, df 9, p=0.000, Gamma = 0.49

Age<=20 (Younger Mothers) = Chi2 222.04, df 9, p=0.000, Gamma = 0.46

Age>=21 (Older Mothers) = Chi2 201.39, df9, p=0.000, Gamma = 0.46

8.3.4: Child Antisocial Behaviour and the Biological Father's Antisocial Behaviour

In Table 8.4 we report on the relationship between the biological father's antisocial behaviour and that of their child. We examine all biological fathers regardless of whether they had ever lived with the family. As can be seen from Table 8.4 and Appendix 17 there is a moderate to strong positive relationship between the child's antisocial behaviour as rated by the mother and teacher and that of the biological father. As the biological father's antisocial behaviour increases so does the child's antisocial behaviour. Furthermore, as the biological father's antisocial behaviour decreases so does the child's.

Examining the sample according to the mother's age at first birth shows that there is a significant association between child antisocial behaviour as rated by the mother and the

teacher and the antisocial behaviour of the biological father for both sample groups (Table 8.4 and Appendix 17). However, what is also evident, is that when a child has both a father with high antisocial behaviour and is born to a younger mother, the child is nearly twice as likely as the children of older mothers to have high antisocial behaviour. This is confirmed by the teacher report on child antisocial behaviour (Appendix 17). Interestingly, however, when younger mothers have a child with men with no or low antisocial behaviour, they become very similar to older mothers, in that both groups are much more likely to have a child with no or low antisocial behaviour (Table 8.4 and Appendix 17). Therefore, having a father with no or low antisocial behaviour may act as a protective factor for children at risk of antisocial behaviour. This is especially the case for the children of younger mothers.

Table 8.4: Descriptive Statistics for Child Antisocial Behaviour (Mother's Report) according to all Biological Fathers Antisocial Behaviour

Child ASB	Sample	Biological Fathers Antisocial Behaviour			
		No/Low	Moderate	Mod/High	High
No/Low ASB	Weighted	48.21 (379)	30.69 (164)	13.36 (63)	12.19 (51)
	Age<=20	40.09 (85)	23.58 (58)	13.57 (35)	11.31 (45)
	Age>=21	49.13 (227)	32.85 (90)	13.48 (31)	13.24 (18)
Moderate ASB	Weighted	26.40 (208)	28.44 (152)	29.62 (141)	22.96 (96)
	Age<=20	25.47 (54)	27.64 (68)	22.48 (58)	14.32 (57)
	Age>=21	26.84 (124)	28.83 (79)	32.17 (74)	32.34 (44)
Mod/High ASB	Weighted	17.41 (137)	25.70 (137)	32.58 (155)	27.28 (115)
	Age<=20	22.65 (48)	23.58 (58)	33.72 (87)	27.89 (111)
	Age>=21	16.67 (77)	26.64 (73)	32.17 (74)	27.21 (37)
High ASB	Weighted	7.99 (63)	15.17 (81)	24.44 (116)	37.57 (158)
	Age<=20	11.79 (25)	25.20 (62)	30.23 (78)	46.48 (185)
	Age>=21	7.36 (34)	11.68 (32)	22.18 (51)	27.21 (37)

Weighted = Chi2 359.50, df 9, p=0.000, Gamma = 0.42

Age<=20 (Younger Mothers) = Chi2 145.12, df9, p=0.000, Gamma = 0.38

Age>=21 (Older Mothers) = Chi2 142.57, df9, p=0.000, Gamma = 0.39

8.3.5: Child Antisocial Behaviour and Parental Antisocial Behaviour

We entered both the mother's and fathers antisocial behaviour into an ordered logistic regression model to assess their relative contribution to child antisocial behaviour at age 5 years old. Table 8.5 below shows that both the mother and father's levels of antisocial behaviour are significantly associated with child antisocial behaviour as reported by the mother. However, it is also evident, from examining Table 8.5, that the mother's antisocial behaviour has a stronger association with child antisocial behaviour than the biological fathers. This result is replicated when the sample is split according to the mother's age at first birth (Table 8.5). However, examining the relationship between the teacher report on child antisocial behaviour and parental antisocial behaviour shows the opposite result (Appendix 17). The mother's antisocial behaviour becomes insignificant whilst the biological fathers antisocial behaviour is significantly associated with child antisocial behaviour for all three sample groups, especially younger mothers.

Table 8.5: Ordered Logistic Model for Parental Antisocial Behaviour and Child Antisocial Behaviour (Mother's Report).

Variable	Coef	95% Confidence Interval	
<u>Weighted 'All' Mother Sample</u>			
Mothers ASB	.5927826***	.4912682	.694297
Fathers ASB	.3874574***	.285782	.4891329
<u>Younger Mother Sample (Age <=20)</u>			
Mothers ASB	.6055789***	.4772468	.733911
Fathers ASB	.3527669***	.2302028	.4753309
<u>Older Mother Sample (Age >=21)</u>			
Mothers ASB	.5579106***	.4242217	.6915994
Fathers ASB	.3531915***	.2138449	.4925381

8.3.6: Poverty and Parental Antisocial Behaviour

Having shown that both poverty and parental antisocial behaviour were independently associated with child antisocial behaviour, we were interested in examining which of our two indicators of social exclusion contributed the most to child antisocial behaviour. We, therefore, entered poverty, and parental antisocial behaviour into an ordered logistic regression model alongside our dependent variable child antisocial behaviour. Table 8.6 below shows that for the weighted 'all' mother sample both poverty and parental antisocial behaviour are significantly associated with child antisocial behaviour at age 5 years old as reported by the mother. However, what is also apparent is that parental antisocial behaviour has a stronger association with child antisocial behaviour than poverty. Examining the teacher report on child antisocial behaviour, however, shows that only the biological father's antisocial behaviour is significantly associated with child antisocial behaviour (Appendix 17).

However, when we examine the sample according to the mother's age at first birth (Table 8.6), we find some surprising results. For the younger mother group, once parental antisocial behaviour is controlled for, poverty loses its previous significant association with child antisocial behaviour. This finding can be interpreted in a number of ways. First, it could suggest that, for younger mothers, parental antisocial behaviour may have more of an impact than poverty upon levels of child antisocial behaviour. Second, it may suggest that younger mothers may be more likely to have higher antisocial behaviour, and this reduces the significance of poverty on child antisocial behaviour outcomes. Third, it may suggest,

that for younger mothers parental antisocial behaviour may mediate the effects of poverty on child antisocial behaviour. The teacher report on child antisocial behaviour shows only that the biological father's antisocial behaviour is associated with antisocial behaviour in the children of younger mothers (Appendix 17). Given the above finding, and previous findings which suggest that younger mothers may face multiple risk factors we examine the situation of younger mothers in more detail, and concentrate on differences in levels of antisocial behaviour within the younger mother group as well as between younger mothers and older mothers.

Table 8.6: Ordered Logistic Model for Poverty, Parental Antisocial Behaviour and Child Antisocial Behaviour (Mother's Report).

Variable	Coef	95% Confidence Level	
Weighted 'All' Mother Sample			
Poverty	.1869493***	.0959178	.2779807
Mothers ASB	.5916964***	.4907736	.6926191
Fathers ASB	.3253293***	.2181424	.4325162
Younger Mother Sample (Age<=20)			
Poverty	.0998904	-.0235863	.2233671
Mothers ASB	.6014486***	.4725507	.7303465
Fathers ASB	.3335246***	.2095224	.4575268
Older Mother Sample (Age>=21)			
Poverty	.152148*	.0037466	.3005494
Mothers ASB	.5689026***	.4351211	.7026841
Fathers ASB	.3128047***	.1655426	.4600668

8.3.7: Younger Mothers, Maternal Antisocial Behaviour and Multiple Risk Factors

In the previous section we examined the effects of parental antisocial behaviour and poverty on child antisocial behaviour. We found that, for younger mothers, once parental antisocial behaviour was controlled for, poverty lost its previous significant association with child behaviour problems as reported by the mother. This was not the case for older mothers. We have suggested that younger mothers may be more likely to have higher levels of antisocial

behaviour which reduces the significance of poverty on child antisocial behaviour⁸⁴. Furthermore, in previous chapters of this thesis, we have suggested that younger mothers may be more likely to face multiple risk factors, and that this may explain why the absence of a particular risk factor does not result in the children of younger mothers becoming more likely to have lower antisocial behaviour as it does for older mothers. One exception to this finding was in cases where the mother had lower antisocial behaviour; in these cases the children of younger mothers became like the children of older mothers in that they were both much more likely to have lower antisocial behaviour as reported by the mother. We hypothesise, therefore, that younger mothers may be more likely to face multiple risk factors as a result of younger mothers being more likely to have higher antisocial behaviour. Therefore, we hypothesise that when maternal antisocial behaviour is reduced so is the likelihood of other risk factors being present. We, therefore, examined the situation of younger mothers in more detail. We divided our sample into four groups. Group 1 consisted of older mothers with low antisocial behaviour, Group 2 consists of younger mothers with low antisocial behaviour, Group 3 contains older mothers with high antisocial behaviour, and Group 4 consists of younger mothers with high antisocial behaviour. We examined to what extent child antisocial behaviour and the presence of multiple risk factors differed according to our four groups. We examine these factors in relation to the mother report on child antisocial behaviour only. As we can see from Table 8.7 below younger mothers with high antisocial behaviour are more likely than any other group to have children with high antisocial behaviour whilst older mothers with low antisocial behaviour are the least likely to have a child with high antisocial behaviour (Mother's Report). However,

⁸⁴ In Chapter 3 we found that younger mothers were much more likely than older mothers to have higher antisocial behaviour.

examining the differences between the other two groups shows that older mothers with high antisocial behaviour are more likely than younger mothers with low antisocial behaviour to have children with high antisocial behaviour. This finding suggests that the level of antisocial behaviour in the parent, for example the mother in this case, may have a stronger association, than the mother's age at first birth, with antisocial behaviour in the child. However, although this may be the case, it also evident that young age at first childbirth may also be a risk factor for increased child antisocial behaviour as our findings have shown that younger mothers with lower antisocial behaviour are more likely than older mothers with low antisocial behaviour to have children with behavioural problems. Furthermore, it is evident that when young age is combined with high antisocial behaviour in the mother this appears to exacerbate the risk of child antisocial behaviour as the worst outcome in terms of child behavioural problems are for those younger mothers with high antisocial behaviour.

Table 8.7: Descriptive Statistics for Maternal Antisocial Behaviour according to Mother's Age at First Birth

Child ASB	Group 1	Group 2	Group 3	Group 4
No/Low ASB	42.96 (305)	33.04 (152)	15.33 (61)	10.94 (72)
Mod ASB	29.01 (206)	30.65 (141)	29.15 (116)	14.89 (98)
Mod/High ASB	19.86 (141)	22.17 (102)	30.90 (123)	30.85 (203)
High ASB	8.17 (58)	14.14 (65)	24.62 (98)	43.32 (285)

Ref Groups:

- Group 1 = Older Mothers (Age \geq 21) with No, Low or Moderate ASB
- Group 2 = Younger Mothers (Age \leq 20) with No, Low or Moderate ASB
- Group 3 = Older Mothers (Age \geq 21) with Moderately High or High ASB
- Group 4 = Younger Mothers (Age \leq 20) with Moderately High or High ASB

We then examined whether the combination of maternal antisocial behaviour and young age increased the likelihood of multiple risk factors being present. Table 8.8 below shows the

descriptive statistics for our four groups. As can be seen from the descriptive statistics younger mothers with high antisocial behaviour are most likely to face multiple risk factors. These risk factors included increased poverty, marital conflict, a partner with high antisocial behaviour, being less likely to be always married, and poorer parenting. Furthermore, the group which consisted of older mothers with low antisocial behaviour were the least likely to face multiple risk factors. However, when we examine the other groups, for example group 2 and 3, we can see that older mothers with high antisocial behaviour are, in most cases, more likely than younger mother with low antisocial behaviour to have multiple risk factors. The two exceptions to this findings are in relationship to poverty and family structure. We can see that younger mothers with low antisocial behaviour are more likely than older mothers with high antisocial behaviour to be living in high poverty households as well as being less likely to be always married.

Table 8.8: Descriptive Statistics for Multiple Risk Factors, Mothers Antisocial Behaviour and Mothers Age at First Birth

Variables	Group 1	Group 2	Group 3	Group 4
Biological Fathers ASB				
No/Low ASB	54.67 (386)	31.44 (144)	19.19 (76)	10.37 (68)
Moderate ASB	24.08 (170)	31.88 (146)	26.26 (104)	15.24 (100)
Moderate/High ASB	15.30 (108)	20.52 (94)	30.81 (122)	25.00 (164)
High ASB	5.95 (42)	16.16 (74)	23.74 (94)	49.39 (324)
Poverty				
No/Low Poverty	55.49 (394)	13.48 (62)	48.74 (194)	12.77 (84)
Moderate Poverty	25.07 (178)	20.87 (96)	29.65 (118)	11.85 (78)
Mod/High Poverty	14.08 (100)	35.22 (162)	12.06 (48)	29.48 (194)
High Poverty	5.36 (38)	30.43 (140)	9.55 (38)	45.90 (302)
Family Structure				
Separated/Divorced	6.82 (48)	12.66 (58)	10.05 (40)	24.39 (160)
Stepfamily	1.70 (12)	11.35 (52)	4.02 (16)	12.50 (82)
Always Married	81.53 (574)	50.22 (230)	69.35 (276)	32.62 (214)
Cohabiting	7.96 (56)	21.83 (100)	15.08 (60)	22.26 (146)
Always Solo	1.99 (14)	3.94 (18)	1.50 (6)	8.23 (54)
Negative Comments				
Missing	12.25 (87)	11.09 (51)	6.78 (27)	9.57 (63)
No Neg Comments	18.03 (128)	12.61 (58)	20.35 (81)	9.88 (65)

Variables	Group 1	Group 2	Group 3	Group 4
Upto 2 Neg Comments	59.72 (4240)	55.87 (257)	63.08 (251)	54.56 (359)
>3 Neg Comments	10.00 (71)	20.43 (940)	9.80 (39)	25.99 (171)
Negativity				
Missing	12.39 (88)	11.30 (52)	7.29 (29)	9.88 (65)
No/Low Neg	56.90 (404)	43.04 (198)	59.30 (236)	36.93 (243)
Moderate Neg	23.80 (169)	31.52 (145)	23.87 (95)	33.28 (219)
High Neg	6.90 (49)	14.13 (650)	9.55 (38)	19.91 (131)
Warmth				
Missing	12.39 (88)	11.09 (51)	7.29 (29)	9.73 (64)
No/Low Warmth	13.52 (96)	20.00 (92)	14.07 (56)	24.92 (164)
Moderate Warmth	31.13 (221)	33.04 (152)	35.18 (140)	33.59 (221)
High Warmth	42.96 (305)	35.87 (165)	43.47 (173)	31.76 (209)
Frequency of Smacking				
Rarely/Occ	79.90 (473)	82.02 (292)	65.78 (246)	69.36 (412)
Monthly	9.97 (59)	9.83 (35)	21.12 (79)	16.16 (96)
Weekly/Daily	10.13 (60)	8.15 (29)	13.10 (49)	14.48 (86)
Disagreement about Childrearing				
No/Low	55.35 (362)	49.01 (198)	32.97 (120)	34.27 (170)
Moderate	19.57 (128)	27.23 (110)	25.27 (92)	23.39 (116)
High	25.08 (164)	23.76 (96)	41.76 (152)	42.34 (210)
Quarrelling				
No/Low	67.90 (478)	56.44 (254)	29.95 (118)	21.18 (136)
Moderate	18.75 (132)	20.44 (92)	30.46 (120)	29.28 (188)
High	13.35 (94)	23.12 (104)	39.59 (156)	49.54 (318)
Domestic Violence				
No Domestic Violence	81.82 (576)	65.33 (294)	47.72 (188)	30.22 (194)
Moderate Domestic Vio	9.94 (70)	12.44 (56)	17.26 (68)	14.33 (92)
High Domestic Violence	8.24 (58)	22.23 (100)	35.02 (138)	55.45 (356)

Ref Groups:

- Group 1 = Older Mothers (Age >=21) with No, Low or Moderate ASB
- Group 2 = Younger Mothers (Age <=20) with No, Low or Moderate ASB
- Group 3 = Older Mothers (Age >=21) with Moderately High or High ASB
- Group 4 = Younger Mothers (Age <=20) with Moderately High or High ASB

Given these findings we calculated relative risk ratios to estimate the differences between these four groups in more detail. Table 8.9 reports only the RRR's which are the most informative. Furthermore, we combine all of our family structure groups into a binary category (married or not married) as we found that some cells, when we used our five family structure category, had so few observations in them that the results were meaningless. Our findings show that younger mothers with high antisocial behaviour are much more likely, than all the other three groups, to face multiple risk factors. Furthermore, it is evident

that younger mothers with no antisocial behaviour are still more likely than both groups of older mothers to report high poverty levels and be more likely to not be married. Therefore, being a younger mother *per se* is associated with higher levels of poverty regardless of the mother's level of antisocial behaviour. However, our findings suggest that it is the level of a parent's antisocial behaviour as opposed to young age *per se* which increases the risk of additional risk factors being present. This risk, however, is increased if a mother with high antisocial behaviour is also a younger mother. Therefore, multiple risk factors are much more likely to be present if the mother is young and has high antisocial behaviour.

Table 8.9: Relative Risk Ratios (RRR'S) showing the difference in levels of Multiple Risk Factors according to Age at first Birth and Levels of Maternal Antisocial Behaviour

Variable	⁴ Older ¹ High ASB	Younger ² Low ASB	Younger ³ High ASB
Biological Father's ASB – High ⁵	11.3***	4.7***	43.7***
Poverty – High ⁶	1.4	10.0***	18.8***
Family Structure - Not Married ⁷	1.9***	4.3***	9.1***
Disagreement about Childrearing – High ⁸	2.7***	1.0	2.7***
Quarrelling – High ⁹	6.7***	2.0***	11.8***
Domestic Violence – High ¹⁰	7.2***	3.3***	18.2***
Maternal Negativity – High ¹¹	2.5***	2.5***	6.4**
Maternal Warmth – Low ¹²	1.6*	2.1***	4.4***
Freq of Smacking – Weekly/Daily ¹³	3.8***	0.5	2.6**
Negative Comments – High ¹⁴	2.8***	2.2***	4.7***

*** = 0.001, ** = 0.01, * = 0.05

Reference Group

¹Older mothers with high antisocial behaviour

²Younger mothers with no/low antisocial behaviour

³Younger mothers with high antisocial behaviour

⁴Older mothers with no/low antisocial behaviour

⁵Biological Fathers ASB – No/Low

⁶Poverty – Low

⁷Family Structure – Married

⁸Disagreement about childrearing – No/Low

⁹Quarrelling – No/Low

¹⁰Domestic Violence – No/Low

¹¹Maternal Negativity – No/Low

¹²Maternal Warmth – High

¹³Frequency of Smacking – No Smacking

¹⁴Maternal Negative Comments – No/Low

8.4: DISCUSSION

In this analysis we utilised two possible measures of social exclusion; poverty and parental antisocial behaviour and examined their associations with child antisocial behaviour. Our bivariate analysis has shown that poverty is associated with increases in levels of child antisocial behaviour for both the mother and teacher reports on antisocial behaviour. Furthermore, when we examined the results according to the mother's age at first birth it became apparent, for the mother's report on child antisocial behaviour, that younger mothers in high poverty households were substantially more likely than older mothers to report high antisocial behaviour in their children. Moreover, even when poverty rates were low for younger mothers, they were as likely to have a child in any of the four antisocial behaviour groups. This was not the case for older mothers who were substantially more likely to report no or low antisocial behaviour in their children if their poverty rating was low.⁸⁵ Therefore, it appears that younger mothers may have an increased risk of having a child with high antisocial behaviour even when their poverty level is low. This finding suggests to us that younger mothers may face additional risk factors, other than poverty, which results in their children being more at risk of antisocial behaviour even when a particular risk factor, such as poverty, is not present. This it appears is not the case for older mothers.

Examining the impact of parental antisocial behaviour on child antisocial behaviour as reported by the mother and teacher showed that both the biological father's and mother's antisocial behaviour were associated with child antisocial behaviour at age 5. Furthermore, the effect on the child's antisocial behaviour of having a mother or father with high antisocial behaviour was heightened if the mother was a younger mother. Younger mothers who had high antisocial behaviour themselves or whose partner had high antisocial behaviour were much more likely to have a child with high antisocial behaviour. However, we also found evidence that having a mother or father with no or low antisocial behaviour was associated with lower antisocial behaviour in the children of both younger and older mothers and it may be possible that lowered parental antisocial behaviour is a protective factor for all children, especially those of younger mothers. This is an important point as it is one of the first indications that we have uncovered in this thesis of an absence of a risk factor having a positive outcome for the children of younger mothers. In nearly all other cases, the children of younger mothers were still more likely to be rated as having higher antisocial behaviour even when a risk factor was not present, and this may be a consequence, we suggest, of the children of younger mothers facing multiple risk factors.

We then entered both the mother and father's antisocial behaviour into an ordered logistic regression model to assess their relative contribution to child antisocial behaviour at age 5 years old. We found evidence that both the mother and father's levels of antisocial behaviour are significantly associated with child antisocial behaviour as reported by the mother. Furthermore, it was also evident that the mother's antisocial behaviour had a

⁸⁵ The bivariate analysis for younger and older mothers was non-significant for the teacher report on child antisocial

stronger association with child antisocial behaviour than the father's antisocial behaviour. This was the case for all three sample groups. However, this was not the case for the teacher report on child antisocial, and only the biological father's antisocial behaviour was significantly associated with child antisocial behaviour for both the weighted sample and the younger mother sample.

Examining the relative contribution of our two indicators of social exclusion to child antisocial behaviour at age 5 years old, as rated by the mother, showed that for the weighted 'all' mother sample both poverty and parental antisocial behaviour were associated with child antisocial behaviour. However, what was also evident was that parental antisocial behaviour had a stronger association with child antisocial behaviour than poverty⁸⁶. Furthermore, when we examined the sample according to the mother's age at first birth, we found that, for younger mothers, once parental antisocial behaviour was controlled for, poverty lost its previous statistical significance with child antisocial behaviour, and was no longer significant. We have suggested that this may be a result of younger mothers being more likely to have higher antisocial behaviour ratings themselves, and have children with men with higher antisocial behaviour and as a result this reduces the significance of poverty on child antisocial behaviour.

Lastly, we examined whether younger mothers were more likely to face multiple risk factors, and have children with higher antisocial behaviour as a result of having higher antisocial behaviour themselves. We divided our sample into four groups. Group 1 consisted of older

behaviour and poverty.

mothers with low antisocial behaviour, Group 2 consists of younger mothers with low antisocial behaviour, Group 3 contains older mothers with high antisocial behaviour, and Group 4 consists of younger mothers with high antisocial behaviour. We found that younger mothers with high antisocial behaviour were more likely than any other group to have children with high antisocial behaviour. Furthermore, we found that younger mothers with high antisocial behaviour were much more likely to face multiple risk factors for child antisocial behaviour such as poverty, and marital conflict. Older mothers, on the other hand, with low antisocial behaviour were the least likely. However, when we examined the other two groups we found that older mothers with high antisocial behaviour were more likely than younger mothers with low antisocial behaviour to have both children with high antisocial behaviour and to face multiple risk factors. Therefore, we suggest that the mother's antisocial behaviour may partially explain some of the association between child antisocial behaviour and the presence of multiple risk factors. However, maternal antisocial behaviour does not explain all of the association and it would seem that the combination of maternal antisocial behaviour and young age increases both the likelihood of multiple risk factors being present and the likelihood that a child will have high antisocial behaviour.

8.5: CONCLUSIONS

In this chapter we examined the impact on child antisocial behaviour of two possible indicators of social exclusion: poverty and parental antisocial behaviour. We argued that our poverty indicator corresponded to approach one of Levitas's model of social exclusion

⁸⁶ Only the biological father's antisocial behaviour was associated with the teacher report on child antisocial behaviour, all other variables lost significance.

which states that social exclusion may be a result of poverty. Furthermore, we argue that our parental antisocial behaviour indicator corresponded to approach three which sees the causes of social exclusion as lying in cultural and moral values and behaviour. Our results suggests that both of these approaches to social exclusion can be used to examine relationships between social exclusion and child antisocial behaviour as reported by the mother. However, our findings also suggest that parental antisocial behaviour has a stronger association with child antisocial behaviour than poverty. Therefore, in relation to child antisocial behaviour and social exclusion it may be important, to utilise indicators of social exclusion which not only measure material deprivation and poverty, but also measure parental values and behaviour.

Furthermore, throughout this thesis, we have found that younger mothers are more likely to have children with higher antisocial behaviour even when a particular risk factor, for example marital conflict, is not present. This is not the case for older mothers, who are substantially more likely to have children with no antisocial behaviour if they live in low marital conflict households. We argue, therefore, that there appears to be additional multiple risk factors which are associated with being a younger mother, and which increase the likelihood that their children will have higher antisocial behaviour even when particular risk factors are not present. We believe that these multiple risk factors may be more prevalent amongst younger parents as a result of a group of younger parents being more likely to have higher antisocial behaviour ratings themselves and more likely to have children with men with higher antisocial behaviour ratings. This combination of increased antisocial behaviour and young age may result in them being more likely to be

unemployed, to face marital conflict, to lack parenting skills, and hence to face multiple risk factors (Rutter et al 1998; Rutter & Madge 1976). Our analysis has indicated that when parental antisocial behaviour is reduced, younger mothers are more likely to have children with low antisocial behaviour, and more likely to face less risk factors. Therefore, it may be possible that interventions which aim to address antisocial behaviour in parents may be important as they may have an associated effect on the antisocial behaviour of the children in the family, and may reduce the presence of other multiple risk factors such as unemployment and parenting problems.

CHAPTER 9

PARENTING AND THE PARENTING CONTEXT: RISK FACTORS FOR CHILD ANTISOCIAL BEHAVIOUR AT AGE 5 YEARS OLD

9.1: INTRODUCTION

Our research so far has looked at risk factors for antisocial behaviour either individually or in comparison with one other risk factor. However, previous research findings have shown that no single risk factor can explain antisocial behaviour in either adults or children (Rutter, Giller, & Hagell 1998; Loeber & Farrington 1998) and a large literature has accumulated which shows associations between all manner of risk factors and antisocial behaviour in children (see Rutter, Giller & Hagell 1998 for overview). Furthermore, Bronfenbrenner's Ecological Model (1979) has suggested that children's development, for example the development of antisocial behaviour, may be influenced by a number of factors including the family, the wider social context, and the cultural context. As a result, the origins of child antisocial behaviour may be multifactorial (Rutter 2003) and it is important, therefore, to examine risk factors for antisocial behaviour in a multivariate analysis which examines the predictive power of individual risk factors in the presence of other risk factors (Campbell et al 1996; Seifer 1995). This type of analysis allows researchers the opportunity to focus on identifying which factors may carry the greater risk in relation to childhood antisocial behaviour. In this chapter we examine, in a multivariate format, the predictive power of a number of well-documented risk factors for childhood antisocial behaviour (see Rutter et al

1998 for discussion) and identify which of our risk factors are most associated with child antisocial behaviour at age 5 years old. The risk factors examined in this chapter are family structure, marital conflict, parenting behaviour and attitude, maternal antisocial behaviour, the biological father's antisocial behaviour, and poverty.

However, although it is important to identify which factors carry the most risk in relation to child antisocial behaviour, it is also important to identify those factors which promote successful outcomes in at-risk children. The identification of protective factors for child antisocial behaviour is important as their identification may allow the development of interventions which enhance this protection factor (Buchanan & Flouri 2001). In this analysis we focus on examining how far parental discipline, as measured by frequency of smacking, acts as a protective factor moderating the effects of other risk factors, such as maternal antisocial behaviour, on child antisocial behaviour. We focus on frequency of smacking for three reasons. First, our preliminary exploratory analysis has shown that frequency of smacking has one of the strongest association with child antisocial behaviour. Second, it is possible, therefore, that a reduction in smacking may bring about an associated reduction in child antisocial behaviour. Third, it may be that a reduction in smacking may be easier to accomplish, through legislation, publicity and parenting education, than a reduction in, for example, maternal antisocial behaviour which may be more multi-faceted than an act of smacking. For these reasons, therefore, we focus on the protective effects of a reduction in the frequency of smacking.

9.2: RESEARCH QUESTIONS

We entered the following variables into a multivariate ordered logistic regression model using full maximum likelihood estimation: marital conflict (disagreement about childrearing, parental quarrelling, domestic violence), parenting behaviour and maternal attitude (frequency of smacking, maternal negativity, maternal negative comments, maternal warmth, maternal positive comments), poverty, family structure, and parental antisocial behaviour (biological mothers and fathers). The biological fathers antisocial behaviour relates to all fathers regardless of whether they had lived with the family as we did not want to exclude particular family structures, such as the always 'solo' who did not have a resident biological father present, from analysis. We examined marital conflict by focusing on three variables, parental quarrelling, domestic violence and disagreement about child-rearing as opposed to utilising our combined measure of marital conflict, as we wanted to assess the relative importance of each of the marital conflict variables. After estimating the model with all variables in it, we undertook backwards elimination of all individual variables by estimating a variety of nested sub-models. The significance of the change in the log likelihood ratio for the omitted variable determined whether the variable was kept in the final model. The aim was to find the most parsimonious model that fitted the data.

Our research questions are as follows:

1. What are the important risk factors for child antisocial behaviour at age 5 years old?
2. Which risk factors contribute the most to child antisocial behaviour?

3. How far does frequency of smacking act as a protective factor moderating the effect of other risk factors, such as disagreement about childrearing, on child antisocial behaviour?

9.3: RESULTS

The following results refer to the mother's report on child antisocial behaviour. We examine the results for the teacher report in Section 9.3.2.

9.3.1: Risk Factors for Child Antisocial Behaviour at age 5 years old as reported by the Mother

Table 9.1 details the change in log likelihood ratios for the significant variables for the mother's report on child antisocial behaviour, all variables which were not significant after backwards elimination are not shown due to space constraints. As can be seen from Table 9.1 maternal positive comments, domestic violence, poverty and family structure did not, statistically speaking, significantly contribute to child antisocial behaviour at age 5 years old as rated by the mother for the weighted 'all' mother sample and were omitted from the final model. Table 9.1 shows the significant variables which contributed to child antisocial behaviour and the variables are arranged in order of highest contribution for the weighted 'all' mother sample. As can be seen from the table below disagreement about childrearing and frequency of smacking contributed the most in relation to child antisocial behaviour at age 5 years old. This was followed by the mother's antisocial behaviour, the biological

father's antisocial behaviour, parental quarrelling, maternal negative comments, maternal negativity, and maternal warmth.⁸⁷

Examining the sample according to the mother's age at first birth shows again that disagreement about childrearing and frequency of smacking contributed the most in relation to child antisocial behaviour at age 5 years old for both younger and older mothers (Table 9.1). However, there were slight differences in the variables which were significant according to the mother's age at first birth. We can see from Table 9.2 below that domestic violence becomes significant for younger mothers whilst parental quarrelling becomes significant for older mothers. Furthermore, maternal warmth is only significant for the older mother group.

Table 9.1: Change in Log Likelihood Ratios for Omitted Variables for Child Antisocial Behaviour (Mother Report)

Variables	Sample	Log Likelihood Ratio	DF
Disagree Childrearing	Weighted	155.54***	2
	Age<=20	96.45***	2
	Age>=21	65.35***	2
Frequency of Smack	Weighted ¹	95.34***	3
	Age<=20 ²	61.46***	3
	Age>=21 ³	45.89***	3
Mothers ASB	Weighted	87.76***	3
	Age<=20	58.87***	3
	Age>=21	49.88***	3
Fathers ASB	Weighted	36.77***	3
	Age<=20	18.02***	3
	Age>=21	26.31***	3
Quarrelling	Weighted	18.60***	2
	Age<=20	0.73	2
	Age>=21	6.93*	2

⁸⁷ All tables hereafter after ordered in this way except in the case of the predicted probabilities.

Variables	Sample	Log Likelihood Ratio	DF
Maternal Neg Comments	Weighted	15.57***	2
	Age<=20	6.04*	2
	Age>=21	10.42**	2
Maternal Negativity	Weighted	14.90***	2
	Age<=20	6.33*	2
	Age>=21	7.92*	2
Maternal Warmth	Weighted	6.97*	2
	Age<=20	2.77	2
	Age>=21	6.64*	2
Domestic Violence	Weighted	3.90	2
	Age<=20	16.25***	2
	Age>=21	1.25	2

* Variables displayed in order of contribution for the weighted 'all' mother sample

¹ Weighted 'All' Mother Sample

² Younger Mothers

³ Older Mothers

* = 0.05, ** = 0.01, *** = 0.001

Table 9.2: Significant Variables for Child Antisocial Behaviour (Mother Report) according to Sample Group

Weighted 'All' Mother	Age<=20 (Younger Mothers)	Age>=21 (Older Mothers)
Disagree Childrearing	Disagree Childrearing	Disagree Childrearing
Frequency of Smacking	Frequency of Smacking	Frequency of Smacking
Mothers ASB	Mothers ASB	Mothers ASB
Fathers ASB	Fathers ASB	Fathers ASB
Parental Quarrelling	Not Significant	Parental Quarrelling
Maternal Negative Comments	Maternal Negative Comments	Maternal Negative Comments
Maternal Negativity	Maternal Negativity	Maternal Negativity
Maternal Warmth	Not Significant	Maternal Warmth
Not Significant	Domestic Violence	Not Significant

* Variables displayed in order of contribution for the weighted 'all' mother sample

The three tables below show the final multivariate ordered logistic models for all three samples. All three models explained 13% of the variance for child antisocial behaviour, and we report only the coefficients for the main effects. We did, however, test for interactions between variables, and found no evidence of any significant interactions. Table 9.3 below details the final ordered logistic model for the weighted 'all' mother sample for child antisocial behaviour.

Table 9.3: Final Ordered Logistic Model for Child Antisocial Behaviour as reported by the Mother (Weighted 'All' Mother Sample).

Variables	Coefficient	95% Confidence Interval	
Moderate Disagree Childrearing ¹	.3487909*	.0284739	.6691078
High Disagreement Childrearing	.3513477*	.0540165	.6486788
Rarely Smacked ²	.2592921	-.0648184	.5834026
Monthly Smacked	.5279502*	.1210723	.9348281
Weekly/Daily Smacked	1.234946***	.7667161	1.703176
Mothers ASB -Mod ³	.806653***	.4626011	1.150705
Mothers ASB -Mod/H	1.051216***	.7185841	1.389657
Mothers ASB High	1.48624***	1.075903	1.896577
Fathers ASB -Mod ⁴	.3171851	-.0049046	.6392747
Fathers ASB -ModH	.7550047***	.4283386	1.081671
Fathers ASB High	.9099658***	.4883133	1.331618
Moderate Quarrelling ⁵	.3288025*	.02119817	.6356232
High Quarrelling	.1929875	-.1370361	.523011
<= 2 Negative Comments ⁶	.1495998	-.1690425	.4682421
> 3 Negative Comments	.5757887*	.0820082	1.069569
Moderate Negativity ⁷	.4159348**	.1359222	.6959474
High Negativity	.3455975	-.1763313	.8675264
No/Low Warmth ⁸	.3940412*	.0313982	.7566841
Moderate Warmth	.2468341	-.0184254	.5120936
Cut1	.4488751	.2416771	
Cut2	1.898343	.2473518	
Cut3	3.467775	.2579787	

* = 0.05, ** = 0.01, *** = 0.001

* Variables displayed in order of contribution for the weighted 'all' mother sample

Reference Groups

¹ No/Low Disagreement about Childrearing

² No Smacking

³ Mothers ASB - No/Low

⁴ Fathers ASB - No/Low

⁵ No/Low Quarrelling

⁶ No Negative Comments

⁷ No/Low Negativity

⁸ High Warmth

Table 9.4 shows the final ordered logistic model for the mother's report on child antisocial behaviour for younger mothers. In comparison to the weighted sample, the co-efficients for the model below for younger mothers are higher indicating a stronger relationship between the significant variables and child antisocial behaviour.

Table 9.4: Final Ordered Logistic Model for Child Antisocial Behaviour as reported by the Mother (Younger Mothers (Younger Mothers Age <=20))

Variables	Coefficient	95% Confidence Interval	
Moderate Disagree Childrearing ¹	.0767263	-.3678199	.5212724
High Disagreement Childrearing	.4145815*	-.0007962	.8199593
Rarely Smacked ²	.3622583	-.0031163	.727633
Monthly Smacked	.8691297**	.303131	1.435129
Weekly/Daily Smacked	1.499398***	.9420878	2.056709
Mothers ASB -Mod ³	.3773	-.118071	.8727516
Mothers ASB -Mod/H	1.288234***	.8108704	1.765597
Mothers ASB High	1.712598***	1.149533	2.275663
Fathers ASB - Mod ⁴	.7666053**	.2814465	1.251764
Fathers ASB -ModH	.6045954*	.1324679	1.076723
Fathers ASB High	.930356***	.4291394	1.431573
<= 2 Negative Comments ⁵	.4534041*	.0078576	.8989507
> 3 Negative Comments	.8788236*	.1753209	1.582326
Moderate Negativity ⁶	.408529*	.0248077	.792502
High Negativity	.1673651	-.4781011	.8128313
Moderate Domestic Violence ⁷	-.1347988	-.6470885	.3774909
High Domestic Violence	-.2528117	-.6590977	.1534744
Cut1	.2327638	.2934463	
Cut2	1.515672	.2962317	
Cut3	3.087623	.3135514	

* = 0.05, ** = 0.01, *** = 0.001

* Variables displayed in order of contribution for the weighted 'all' mother sample

Reference Groups

¹ No/Low Disagreement about Childrearing

² No Smacking

³ Mothers ASB - No/Low

⁴ Fathers ASB - No/Low

⁵ No Negative Comments

⁶ No/Low Negativity

⁷ No/Low Domestic Violence

Table 9.5 below details the final ordered logistic regression model for older mothers aged 21 and over. The final model for older mothers differs from the model for younger mothers in that the co-efficients for the significant variables are not as high indicating less of an association between the variables and child antisocial behaviour for older mothers.

Table 9.5: Final Ordered Logistic Model for Child Antisocial Behaviour as reported by the Mother (Older Mothers (Older Mothers Age>=21))

Variables	Coefficient	95% Confidence Interval	
Moderate Disagree Childrearing ¹	.4956965*	.0963184	.8950746
High Disagreement Childrearing	.4142427*	.0445802	.7839053
Rarely Smacked ²	.2420545	-.2151724	.6992814
Monthly Smacked	.4305086	-.1167489	.9777661
Weekly/Daily Smacked	1.216152***	.6024541	1.828983
Mothers ASB -Mod ³	.9683871***	.5393378	1.397456
Mothers ASB -Mod/H	1.037309***	.6362335	1.438384
Mothers ASB High	1.451667***	.9030414	2.000292
Fathers ASB - Mod ⁴	.1674443	-.226239	.5611276
Fathers ASB -ModH	.7321857***	.3335145	1.130857
Fathers ASB High	.8413502**	.2027565	1.479944
Moderate Quarrelling ⁵	.427502*	.0540384	.8009656
High Quarrelling	.193259	-.2256086	.6121267
<= 2 Negative Comments ⁶	.0673946	-.3239161	.4587053
> 3 Negative Comments	.4985408	-.1096424	1.106724
Moderate Negativity ⁷	.3844412*	.0386725	.7302098
High Negativity	.4642281	-.2010792	1.129535
No/Low Warmth ⁸	.4069254	-.0431012	.8569521
Moderate Warmth	.3080839	-.0235437	.6397116
Cut1	.9661934	.2074584	
Cut2	2.472853	.2238101	
Cut3	4.077405	.2503295	

* = 0.05, ** = 0.01, *** = 0.001

* Variables displayed in order of contribution for the weighted 'all' mother sample

Reference Groups

¹ No/Low Disagreement about Childrearing

² No Smacking

³ Mothers ASB - No/Low

⁴ Fathers ASB - No/Low

⁵ No/Low Quarrelling

⁶ No Negative Comments

⁷ No/Low Negativity

⁸ High Warmth

Table 9.6 below shows the predicted probabilities for child antisocial behaviour according to the significant variables in the final models. The significant variables for all three sample groups are: disagreement about childrearing, frequency of smacking, maternal antisocial behaviour, the biological father's antisocial behaviour, maternal negative comments, maternal negativity, maternal warmth, domestic violence, and parental quarrelling.

We begin by examining the predicted probabilities for maternal antisocial behaviour.

Examining the predicted probabilities for the weighted 'all' mother model shows that

children who have a mother with high antisocial behaviour, controlling for all other variables, are more likely to have high antisocial behaviour (39 per cent), whilst children who have a mother with no or low antisocial behaviour are more likely to have no or low antisocial behaviour (49 per cent). Examining the sample according to the mother's age at first birth shows that younger mothers were substantially more likely than older mothers to have a child in the high antisocial behaviour group if they themselves were rated as having high antisocial behaviour (49 per cent compared to 30 per cent). Interestingly, however, both younger and older mothers were more likely to have a child with no or low antisocial behaviour if the mother herself had no or low antisocial behaviour (41 per cent for younger mothers, 51 per cent for older mothers), and, as stated earlier, it may be possible that lowered maternal antisocial behaviour may act as a protective factor for child antisocial behaviour for both younger and older mothers. Examining the biological father's antisocial behaviour reflects the above results. Those fathers with high antisocial behaviour were more likely to have a child with high antisocial behaviour (41 per cent for weighted 'all' mother sample), whilst those fathers with no or low antisocial behaviour were more likely to have a child with no or low antisocial behaviour (43 per cent for weighted). Examining the sample according to the mother's age at first birth indicates that the children of younger mothers who also had a biological father with high antisocial behaviour were substantially more likely to be in the high antisocial behaviour group than the children of older mothers (46 per cent compared to 29 per cent). It is evident, therefore, that in situations where parental antisocial behaviour is combined with young age, the risk of having a child with high antisocial behaviour substantially increases. However, it is also apparent that when the children of both older and younger mothers have biological parents with no or low antisocial behaviour

they are more likely to be rated as having no or low antisocial behaviour. Our findings suggest, therefore, that although parental antisocial behaviour is highly associated with increases in child antisocial behaviour, when parental antisocial behaviour is reduced, the risk of antisocial behaviour in children may also reduce. Therefore, interventions which aimed to address the level of parental antisocial behaviour may offer some protection for vulnerable children at risk of antisocial behaviour.

Our analysis has indicated that the significant parenting attitude and behaviour measures associated with child antisocial behaviour at age 5 years old, controlling for all other variables, are frequency of smacking, maternal negative comments, maternal negativity and maternal warmth. These are the parenting dimensions which were found to be significant in Chapter 6. We, therefore, only report the predicted probabilities for these factors. We begin by focusing on the predicted probabilities for frequency of smacking. It is evident from Table 9.6 that as smacking increases in frequency so does the probability that the child will have high antisocial behaviour. Furthermore, as smacking decreases in frequency so does the probability that a child will have high antisocial behaviour. Examining the sample according to the mother's age at first birth shows that the children of younger mothers who were smacked weekly or daily were much more likely than the children of older mothers to be rated as having high antisocial behaviour and we can see from Table 9.6 that over half of the children of younger mothers who were smacked daily or weekly were rated by the mother as having high antisocial behaviour. However, what is also evident from our tables is that when younger mothers do not smack their child they are more likely to have a child with no or low antisocial behaviour. Examining the rarely smacked group of children,

however, shows that younger mothers are as likely to have a child in any of the four antisocial behaviour groups when they smacked rarely. Older mothers, on the other hand, were much more likely to have a child with no or low antisocial behaviour when they smacked rarely (37 per cent). Our findings show, therefore, that when younger mothers do not smack, their children are more likely to have no or low antisocial behaviour. However, when smacking is used by younger mothers, even when it is rarely, this is associated with increases in child behaviour problems culminating in substantial increases when the child is smacked on a weekly or daily basis. However, although we have found that this may be the case what is also evident is that when smacking is reduced, for example, from weekly/daily to rarely, this is associated with a reduction in the antisocial behaviour reported amongst the children of younger mothers.

The predicted probabilities for maternal negative comments show that as the number of negative comments made by the mother about the child increases so does the child's antisocial behaviour. For example, 39 per cent of children who experienced more than 3 negative comments were also rated as having high antisocial behaviour, whilst 40 per cent of children who experienced no negative comments were rated as having no or low antisocial behaviour. Younger mothers who were rated as having made 3 negative comments or more about their child were more likely than older mothers to have a child with high antisocial behaviour (46 per cent compared to 30 per cent). However, when no negative comments were made, younger mothers like older mothers were more likely to have a child with no or low antisocial behaviour. This is an important point. Throughout this thesis we have found that the absence of a single risk factor does not necessarily correspond to a positive outcome

in terms of behaviour for the children of younger mothers. The only exceptions to this, found in this thesis, were in cases where both the parents had low antisocial behaviour, where there was low maternal negative comments, and no smacking. When either of these four risk factors were absent, for example, there was no smacking, the children of younger mothers were more likely to be rated as having no or low antisocial behaviour, and became more like the children of older mothers.

Examining the predicted probabilities for maternal negativity showed that children who experienced high maternal negativity were more likely to have high antisocial behaviour (41 per cent), whilst those children who experience no or low negativity were more likely to have no or low antisocial behaviour (35 per cent). This was also the case for older mothers in that as maternal negativity increased so did child antisocial behaviour and as maternal negativity decreased so child antisocial behaviour decreased. This, however, was not the case for younger mothers. As a younger mother's maternal negativity increased so did child antisocial behaviour, however, when there was no maternal negativity reported, younger mothers were as likely to have a child in any of the four antisocial behaviour groups.

The predicted probabilities for maternal warmth indicated that children who experienced no or low maternal warmth were more likely to have high antisocial behaviour (36 per cent) whilst those children who experienced high maternal warmth were more likely to have no or low antisocial behaviour (34 per cent). Maternal warmth was non-significant for younger mothers and we discuss only the predicted probabilities for older mothers. The predicted probabilities for older mothers showed that, like the weighted 'all' mother sample, as warmth

increased so antisocial behaviour decreased. However, when no maternal warmth was rated older mothers were as likely to have a child in any of the four antisocial behaviour categories.

Lastly, we examine the predicted probabilities for marital conflict, which we define as disagreement about child-rearing, parental quarrelling and domestic violence. Our findings suggest that children who experienced high parental disagreement about childrearing were more likely to be rated as having higher antisocial behaviour (30 per cent), whilst those children who experienced no or low parental disagreement about childrearing were less likely to be rated as having high antisocial behaviour (13 per cent) and more likely to be rated as having no or low antisocial behaviour (37 per cent). Examining the younger and older mother samples showed substantial differences. The children of younger mothers, who experienced high parental disagreement about childrearing, were almost twice as likely than the children of older mothers to have high antisocial behaviour (41 per cent compared to 22 per cent). However, when younger mothers report no parental disagreement about childrearing they were still more likely than older mothers to have a child with higher antisocial behaviour. Our findings show that younger mothers who reported no or low disagreement about child-rearing, were as likely to have a child in any of the four antisocial behaviour groups, whilst, older mothers were more likely to have a child with no or low antisocial behaviour if they reported no disagreement about childrearing.

Examining the predicted probabilities for parental quarrelling showed that children who experienced high parental quarrelling were more likely to have high antisocial behaviour (31

per cent), whilst children who experienced no or low parental quarrelling were more likely to have no or low antisocial behaviour (37 per cent). Parental quarrelling was non-significant for younger mothers but significant for older mothers. The children of older mothers who experienced high quarrelling were more likely to be rated as having moderately high antisocial behaviour than any other antisocial behaviour group (30 per cent), and more likely to have no or low antisocial behaviour if no or low quarrelling was reported (41 per cent).

Domestic violence was non-significant for the weighted 'all' mother sample and the older mother sample, but was significant for the younger mother sample. The children of younger mothers who experienced high parental domestic violence were more likely to have high antisocial behaviour (39 per cent) whilst those children who experienced no domestic violence were as likely to be in any of the four antisocial behaviour groups.

Table 9.6: Predicted Probabilities for Child Antisocial Behaviour as reported by the mother according to Sample Group.

VARIABLES	CHILD ASB	WEIGHTED¹ AGE<=20² AGE>=21³		
<u>Mother Antisocial Behaviour</u>				
No/Low ASB -Mothers	No/Low ASB	.4975	.4184	.5196
	Mod ASB	.2846	.2733	.2860
	Mod/High ASB	.1560	.2129	.1421
	High ASB	.0617	.0951	.0522
Moderate ASB - Mothers	No/Low ASB	.2347	.2514	.2419
	Mod ASB	.2937	.2671	.3123
	Mod/High ASB	.2891	.2980	.2861
	High ASB	.1823	.1833	.1595
Mod/High ASB - Mothers	No/Low ASB	.1605	.1132	.1985
	Mod ASB	.2474	.1780	.2889
	Mod/High ASB	.3191	.3290	.3094
	High ASB	.2728	.3796	.2030
High ASB - Mothers	No/Low ASB	.0911	.0695	.1255
	Mod ASB	.1858	.1301	.2353
	Mod/High ASB	.3243	.3050	.3317

VARIABLES	CHILD ASB	WEIGHTED¹ AGE<=20² AGE>=21³		
	High ASB	.3987	.4952	.3072
<u>Biological Fathers Antisocial Behaviour</u>				
No/Low ASB - Fathers	No/Low ASB	.4322	.3735	.4521
	Mod ASB	.2816	.2518	.2915
	Mod/High ASB	.1893	.2307	.1770
	High ASB	.0967	.1438	.0792
Moderate ASB -Fathers	No/Low ASB	.2683	.1989	.3126
	Mod ASB	.2834	.2264	.3048
	Mod/High ASB	.2691	.2958	.2464
	High ASB	.1791	.2787	.1360
Mod/High ASB - Fathers	No/Low ASB	.1557	.1605	.1568
	Mod ASB	.2402	.2038	.2608
	Mod/High ASB	.3174	.3144	.3257
	High ASB	.2865	.3212	.2565
High ASB - Fathers	No/Low ASB	.0864	.0806	.1190
	Mod ASB	.1784	.1410	.2384
	Mod/High ASB	.3227	.3092	.3432
	High ASB	.4122	.4690	.2992
<u>Frequency of Smacking</u>				
No Smacking	No/Low ASB	.4142	.3608	.4838
	Mod ASB	.2691	.2539	.2709
	Mod/High ASB	.2010	.2340	.1654
	High ASB	.1155	.1511	.0796
Rarely Smacked	No/Low ASB	.3078	.2305	.3726
	Mod ASB	.2693	.2238	.2937
	Mod/High ASB	.2507	.2911	.2199
	High ASB	.1719	.2544	.1135
Monthly Smacked	No/Low ASB	.1755	.1079	.2201
	Mod ASB	.2391	.1598	.2834
	Mod/High ASB	.3014	.3013	.3991
	High ASB	.2837	.4307	.1971
Weekly/Daily Smacked	No/Low ASB	.1114	.0713	.1463
	Mod ASB	.1769	.1175	.2171
	Mod/High ASB	.2902	.2690	.3021
	High ASB	.4213	.5420	.3342
<u>Maternal Negative Comments</u>				
No Negative Comments	No/Low ASB	.4021	.3385	.4429

VARIABLES	CHILD ASB	WEIGHTED¹	AGE<=20²	AGE>=21³
	Mod ASB	.2727	.2391	.2875
	Mod/High ASB	.2092	.2509	.1860
	High ASB	.1159	.1714	.0834
Upto 2 Negative Comments	No/Low ASB	.2780	.2038	.3304
	Mod ASB	.2693	.2169	.2937
	Mod/High ASB	.2634	.2960	.2406
	High ASB	.1891	.2832	.1351
> 3 Negative Comments	No/Low ASB	.1147	.0949	.1504
	Mod ASB	.1882	.1459	.2315
	Mod/High ASB	.3029	.2946	.3106
	High ASB	.3940	.4644	.3073
<u>Maternal Negativity</u>				
No/Low Negativity	No/Low ASB	.3517	.2815	.3884
	Mod ASB	.2820	.2395	.2965
	Mod/High ASB	.2326	.2730	.2132
	High ASB	.1335	.2057	.1017
Moderate Negativity	No/Low ASB	.1929	.1359	.2460
	Mod ASB	.2407	.1841	.2740
	Mod/High ASB	.2968	.3100	.2787
	High ASB	.2695	.3698	.2011
High Negativity	No/Low ASB	.1085	.1014	.1496
	Mod ASB	.1803	.1504	.2270
	Mod/High ASB	.2980	.2927	.3046
	High ASB	.4129	.4553	.3186
<u>Maternal Warmth</u>				
No/Low Warmth	No/Low ASB	.1483	NA	.2060
	Mod ASB	.2018	NA	.2488
	Mod/High ASB	.2890	NA	.2870
	High ASB	.3606	NA	.2580
Moderate Warmth	No/Low ASB	.2352	NA	.2837
	Mod ASB	.2540	NA	.2816
	Mod/High ASB	.2806	NA	.2619
	High ASB	.2300	NA	.1727
High Warmth	No/Low ASB	.3487	NA	.3887
	Mod ASB	.2790	NA	.2949
	Mod/High ASB	.2341	NA	.2122
	High ASB	.1381	NA	.1039
<u>Disagreement about Childrearing</u>				
No/Low Disagreement	No/Low ASB	.3710	.2619	.4396
	Mod ASB	.2758	.2282	.2926

VARIABLES	CHILD ASB	WEIGHTED ¹	AGE<=20 ²	AGE>=21 ³
	Mod/High ASB	.2201	.2763	.1846
	High ASB	.1328	.2334	.0830
Moderate Disagreement	No/Low ASB	.2123	.1989	.2342
	Mod ASB	.2543	.2132	.2848
	Mod/High ASB	.2851	.2957	.2848
	High ASB	.2481	.2920	.1960
High Disagreement	No/Low ASB	.1692	.1216	.2167
	Mod ASB	.2265	.1681	.2689
	Mod/High ASB	.3009	.2999	.2938
	High ASB	.3032	.4101	.2204
<u>Parental Quarrelling</u>				
No/Low Quarrelling	No/Low ASB	.3766	NA	.4184
	Mod ASB	.2795	NA	.2906
	Mod/High ASB	.2158	NA	.1939
	High ASB	.1279	NA	.0969
Moderate Quarrelling	No/Low ASB	.1899	NA	.2332
	Mod ASB	.2437	NA	.2796
	Mod/High ASB	.2977	NA	.2861
	High ASB	.2685	NA	.2010
High Quarrelling	No/Low ASB	.1508	NA	.1968
	Mod ASB	.2216	NA	.2705
	Mod/High ASB	.3083	NA	.3054
	High ASB	.3190	NA	.2271
<u>Domestic Violence</u>				
No Domestic Violence	No/Low ASB	NA	.2555	NA
	Mod ASB	NA	.2252	NA
	Mod/High ASB	NA	.2698	NA
	High ASB	NA	.2493	NA
Moderate Dom Violence	No/Low ASB	NA	.1762	NA
	Mod ASB	NA	.2010	NA
	Mod/High ASB	NA	.3043	NA
	High ASB	NA	.3183	NA
High Domestic Violence	No/Low ASB	NA	.1236	NA
	Mod ASB	NA	.1736	NA
	Mod/High ASB	NA	.3100	NA
	High ASB	NA	.3926	NA

¹ Weighted 'All' Mother Sample

² Younger Mother Sample

³ Older Mother Sample

Missing Data predicted probabilities not shown.

9.3.2: Risk Factors for Child Antisocial Behaviour at age 5 years old as reported by the Teacher.

The risk factors identified for child antisocial behaviour as reported by the teacher differed to some degree from those identified by using the mother report on child antisocial behaviour. Appendix 18 shows the final ordered model for the teacher reports on child antisocial behaviour. We can see that for the weighted sample only three variables are significantly associated with child antisocial behaviour at age 5 years old as reported by the teacher. These variables are the biological father's antisocial behaviour, the frequency that a child is smacked, and maternal negativity. Disagreement about child-rearing and maternal antisocial behaviour are not significantly associated with child antisocial behaviour as reported by the teacher although they are significantly associated with child antisocial behaviour as rated by the mother.

Examining the sample according to the mother's age at first birth shows that for younger mothers the risk factors associated with child antisocial behaviour are the biological fathers antisocial behaviour, the frequency that a child is smacked, and domestic violence whilst for older mothers only the frequency that the child is smacked is significantly associated with child antisocial behaviour (Appendix 18).

9.3.3: How far does frequency of smacking act as a protective factor moderating the effects of marital conflict, poverty, parental antisocial behaviour and family structure on child antisocial behaviour

In Section 9.3.1 we identified four risk factors which had the greatest association with child antisocial behaviour at age 5 years old as rated by the mother. They were, in order of importance, disagreement about childrearing, frequency of smacking, maternal antisocial behaviour, and the biological father's antisocial behaviour. In this section we focus on possible protective factors and examine how far parental discipline as measured by frequency of smacking acts as a protective factor moderating the effects of disagreement about childrearing, maternal antisocial behaviour, and the biological father's antisocial behaviour on child antisocial behaviour as rated by the mother (Rutter 1985). We examine the moderating protective effects of frequency of smacking as opposed to the protective effects of our other three risk factors as our analysis has indicated that frequency of smacking has one of the strongest associations with child antisocial behaviour. Moreover, our analysis has indicated that the frequency that a child is smacked has a stronger association, than any of other parenting measures, with child behavioural problems. We also suggest that it may be easier to bring about a reduction in the frequency that children are smacked as opposed to reducing marital conflict or parental antisocial behaviour. We focus on how far a reduction in smacking from weekly/daily to rarely moderates the effects of our three factors as opposed to a reduction from weekly/daily smacking to no smacking. The rationale behind this is that previous research has shown that many parents find smacking an acceptable disciplinary tool (Graxiano, Hamblen & Plante 1996), and as a result any legislation which hopes to ban smacking may prove unpopular. Therefore, it may be more

profitable to examine how far a reduction in smacking moderates the effects of other risk factors on child antisocial behaviour, as reducing smacking through publicity and education may be easier to achieve than a legislative ban on smacking. We hypothesise, therefore, that a reduction in the frequency of smacking, for example from weekly/daily to rarely smacking, may moderate the effects of our three risk factors on levels of child antisocial behaviour. However, we also hypothesise that the presence of frequent smacking and high disagreement about childrearing or the presence of frequent smacking and high parental antisocial behaviour together will substantially increase the risk of child antisocial behaviour. We examine our results in relation to our three sample groups.

Table 9.7 below shows the predicted probabilities for child antisocial behaviour according to levels of both maternal antisocial behaviour and frequency of smacking. What is evident from this table is that mother's with high antisocial behaviour who also smack daily or weekly are almost twice as likely as those mothers with the same antisocial behaviour rating but who smack rarely to have a child with high antisocial behaviour. This applies for both older and younger mothers. A reduction in smacking, therefore, may potentially reduce the likelihood of a mother with high antisocial behaviour having a child with high antisocial behaviour. To examine this hypothesis further we compared Table 9.6 above, which shows the predicted probabilities for maternal antisocial behaviour only, with Table 9.7 below, which shows the predicted probabilities for maternal antisocial behaviour and frequency of smacking. We found that younger mothers, for example, with high antisocial behaviour have a 49 per cent chance of having a child with high antisocial behaviour (Table 9.6) whilst younger mothers with high antisocial behaviour who smack rarely have a 45 per cent chance

of having a child with high antisocial behaviour. However, what is also evident in Table 8.7 is that a combination of high maternal antisocial behaviour and weekly or daily smacking almost doubles the risk of child antisocial behaviour for all sample groups. Younger mothers, for example, who have high antisocial behaviour and who smack weekly or daily have a massive 72 per cent chance of having a child with high antisocial behaviour whilst younger mothers with high antisocial behaviour but who smack rarely have a 45 per cent. This finding suggests, therefore, that it is a possibility that a reduction in the frequency a child is smacked may reduce the effect of high maternal antisocial behaviour on child behavioural problems. Our analysis has shown that there is a substantial increase in child antisocial behaviour when frequent smacking is combined with high maternal antisocial behaviour. This could suggest that there was an interaction effect between the mother's antisocial behaviour and the frequency that a child was smacked. However, as stated earlier, our analysis found no significant interactions between any of the variables. Therefore, it would appear that the substantial increase in child antisocial behaviour when frequent smacking and high maternal antisocial behaviour are combined in the same household may be an additive effect as opposed to an interaction effect.

Table 9.7: Predicted Probabilities for Child Antisocial Behaviour (Mother's Report) and Frequency of Smacking according to levels of Maternal Antisocial Behaviour (All Samples).

Frequency of Smacking	Child ASB	Maternal Antisocial Behaviour			
		No/Low	Mod ASB	Mod/High	High ASB
Weighted 'All' Mother Sample					
No Smacking	No/Low	.589991	.3411752	.2435282	.1418638
	Moderate	.2583836	.3270014	.3123816	.2494282
	Mod/High	.1100931	.2243724	.2813816	.3348653
	High	.0415323	.107451	.1627086	.2738427
Rarely	No/Low	.5200927	.271309	.1934957	.1093833
	Moderate	.2902952	.3235591	.2926739	.2169234

Frequency of Smacking	Child ASB	Maternal Antisocial Behaviour			
		No/Low	Mod ASB	Mod/High	High ASB
Monthly	Mod/High	.1358245	.2631612	.3095177	.3396499
	High	.0537876	.1419707	.2043127	.3340434
	No/Low	.390163	.1801941	.1240641	.0676036
	Moderate	.3259967	.284138	.2343219	.154743
	Mod/High	.196007	.3167488	.3385002	.3182804
	High	.0878333	.2189191	.3031138	.459373
Weekly/Daily	No/Low	.2777633	.1167071	.0784604	.0417642
	Moderate	.3248905	.2258609	.1729069	.104909
	Mod/High	.2592777	.3394409	.3288237	.2676688
	High	.1380685	.317992	.419809	.585658

Younger Mother Sample (Age <=20)

No Smacking	No/Low	.5328121	.3624313	.2083931	.1303021
	Moderate	.2644424	.2997339	.2674124	.2103241
	Mod/High	.1429332	.2246489	.3081372	.3331119
	High	.0598123	.1131859	.2160573	.3262619
Rarely/Occ	No/Low	.418428	.2561238	.1392924	.0781135
	Moderate	.2977678	.2909081	.2228031	.1509936
	Mod/High	.1957599	.2850938	.3375903	.3204108
	High	.0880443	.1678743	.3003142	.4504821
Monthly	No/Low	.2722998	.1518751	.0776341	.0422083
	Moderate	.2952628	.2339086	.150296	.0916676
	Mod/High	.2758704	.3347303	.3199345	.254289
	High	.156567	.279486	.4521354	.6118351
Weekly/Daily	No/Low	.1853098	.0981667	.0486732	.026089
	Moderate	.2584592	.1781386	.1034778	.0597991
	Mod/High	.3222923	.3341483	.2720023	.1924288
	High	.2339387	.3895464	.5758467	.7216831

Older Mother Sample (Age >=21)

No Smacking	No/Low	.597097	.3331047	.2753417	.1713059
	Moderate	.2619241	.3394194	.3343728	.2881333
	Mod/High	.1054002	.2288175	.2644958	.331400
	High	.0355787	.0986584	.1257897	.2091599
Rarely/Occ	No/Low	.5335888	.2710826	.2258675	.1435106
	Moderate	.2928213	.33639	.3224917	.2673049
	Mod/High	.1279787	.264356	.2938246	.3431599
	High	.0456112	.1281714	.1578162	.2460246
Monthly	No/Low	.4020461	.1793671	.146776	.0896482
	Moderate	.3346547	.2969497	.2700487	.2010284
	Mod/High	.1880984	.3235913	.3418151	.3523267
	High	.0752008	.200091	.2413602	.3569967
Weekly/Daily	No/Low	.2912106	.1178233	.0948449	.0567593
	Moderate	.3397468	.2394156	.2087947	.1435016
	Mod/High	.2515975	.352302	.353483	.3236855
	High	.1174451	.2904591	.3428774	.4760536

Table 9.8 shows the predicted probabilities for child antisocial behaviour according to the biological father's antisocial behaviour and frequency of smacking. It is evident from Table 9.8 below that the combination of frequent smacking and paternal high antisocial behaviour substantially increases the risk of child antisocial behaviour for all sample groups. For example the probability of a child having high antisocial behaviour almost doubles when high paternal antisocial behaviour is combined with weekly smacking as opposed to rarely smacking. This would suggest that a reduction in the frequency that a child is smacked may moderate the effects of high paternal antisocial behaviour on child antisocial behaviour. Again we wanted to examine this hypothesis and compared Table 9.6 above, which shows the predicted probabilities for paternal antisocial behaviour, to Table 9.8 below which depicts the predicted probabilities for paternal antisocial behaviour and frequency of smacking. The comparison of the two tables indicates that when a biological father is rated as having high antisocial behaviour only, they have a 46 per cent chance of having a child with antisocial behaviour, however, when this is combined with smacking which occurs rarely the probability drops to 39 per cent (younger mother sample). There is, therefore, a reduction in child antisocial behaviour when smacking is reduced in frequency, and this may temper the association between the biological father's antisocial behaviour and a child's antisocial behaviour. Furthermore, a reduction in the frequency of smacking is also important as it is apparent in Table 8.8 that when paternal antisocial behaviour is combined with frequent smacking the probability that a child would be rated as having high antisocial behaviour increases substantially (69 per cent)⁸⁸.

⁸⁸ Our analysis, however, found no evidence of an interaction between the biological father's antisocial behaviour and frequency of smacking.

Table 9.8: Predicted Probabilities for Child Antisocial Behaviour (Mother's Report) and Frequency of Smacking according to levels of the Biological Father's Antisocial Behaviour (All Samples).

Frequency of Smacking	Child ASB	Biological Father's Antisocial Behaviour			
		No/Low	Mod ASB	Mod/High	High ASB
Weighted 'All' Mother Sample					
No Smacking	No/Low	.5935811	.4092345	.2608595	.1903806
	Moderate	.2513861	.3118286	.3075502	.276999
	Mod/High	.1104294	.1893261	.2696717	.3078341
	High	.0446034	.08916101	.1619186	.2247864
Rarely	No/Low	.4891571	.3181851	.1944839	.1396412
	Moderate	.2926088	.3176287	.2800959	.2381562
	Mod/High	.1513063	.2358917	.3039491	.324858
	High	.0669277	.1282945	.2214711	.2973446
Monthly	No/Low	.3126277	.1814418	.1028807	.0715741
	Moderate	.3172058	.2718835	.1973387	.152272
	Mod/High	.2389659	.3101158	.3252032	.3049944
	High	.1312006	.236559	.3745774	.4711595
Weekly/Daily	No/Low	.2338817	.1295134	.0714732	.0491997
	Moderate	.2992806	.2280622	.1521091	.1129865
	Mod/High	.283175	.3265896	.3048797	.267491
	High	.1836627	.3158348	.471538	.5703227
Younger Mother Sample (Age<=20)					
No Smacking	No/Low	.5461372	.3648627	.2813582	.1857591
	Moderate	.2500921	.2861507	.2783757	.2398011
	Mod/High	.1397034	.2235818	.2664472	.3091647
	High	.0640673	.1254048	.173819	.2652752
Rarely/Occ	No/Low	.3986523	.2247254	.1707642	.1077424
	Moderate	.2866496	.2630249	.2327385	.1762624
	Mod/High	.2068219	.2956116	.3163002	.3170095
	High	.1078761	.216638	.2801972	.3989857
Monthly	No/Low	.2288765	.1148713	.0844161	.0512906
	Moderate	.2647897	.1840183	.1480436	.099519
	Mod/High	.2936861	.3192795	.3024587	.2519717
	High	.2126477	.3818308	.4650816	.5972186
Weekly/Daily	No/Low	.162814	.0783708	.0569699	.0342121
	Moderate	.2269966	.1399699	.1086152	.0700223
	Mod/High	.3183086	.2964083	.2641651	.2022385
	High	.2918808	.4852511	.5702498	.6935271
Older Mother Sample (Age>=21)					
No Smacking	No/Low	.5896736	.4223866	.2541102	.2410009
	Moderate	.2611708	.3213802	.3207755	.3165981
	Mod/High	.1097234	.181582	.2775101	.2857192
	High	.0394322	.0746513	.1476042	.1566819

Frequency of Smacking	Child ASB	Biological Father's Antisocial Behaviour			
		No/Low	Mod ASB	Mod/High	High ASB
Rarely/Occ	No/Low	.4973818	.3488719	.2020309	.1954999
	Moderate	.2996083	.3311906	.299072	.295351
	Mod/High	.1457561	.2190838	.3070616	.3108748
	High	.057538	.1008537	.1918355	.1982742
Monthly	No/Low	.3158815	.2000002	.1056524	.1018394
	Moderate	.3309857	.2979417	.2134544	.2084233
	Mod/High	.2379655	.3082547	.343702	.3433199
	High	.1151673	.1938034	.3371912	.3464174
Weekly/Daily	No/Low	.2389933	.1453266	.0743727	.0715982
	Moderate	.3157499	.2575064	.1673383	.1626756
	Mod/High	.2846298	.336025	.3303816	.3277506
	High	.160627	.261142	.4279074	.4379756

Table 9.9 shows the predicted probabilities for child antisocial behaviour according to frequency of discipline and disagreement about childrearing. We can see that when high disagreement about childrearing is combined with smacking which occurs weekly or daily as opposed to smacking which occurs rarely the probability of a child having high antisocial behaviour doubles⁸⁹. This increase in child antisocial behaviour in households where high disagreement about childrearing is combined with weekly/daily smacking as opposed to rarely smacking may suggest that a reduction in the frequency that a child may act in a protective manner by moderating the effects of disagreement about childrearing on child behavioural outcomes. We, therefore, compared Table 9.6 above, which shows the predicted probabilities for disagreement about childrearing to Table 9.9 below, which shows the predicted probabilities for disagreement about childrearing and frequency of smacking. What is apparent from the comparison of the predicted probabilities for these two tables is that when disagreement about childrearing is high a child has a 41 per cent chance of being rated as having high antisocial behaviour (younger mother sample), however, when

⁸⁹ This substantial increase in child antisocial behaviour when disagreement about childrearing and frequent smacking are combined could imply an interaction effect. However, our analysis found no evidence of an interaction between the frequency that a child was smacked and disagreement about childrearing.

disagreement about childrearing is high and smacking occurs rarely, the probability of having a child with high antisocial behaviour drops to 33 percent. The frequency that a child is smacked, therefore, may temper the effects of disagreement about childrearing on child antisocial behaviour.

Table 9.9: Predicted Probabilities for Child Antisocial Behaviour (Mother's Report) and Frequency of Smacking according to levels of Disagreement about Childrearing (All Samples).

Frequency of Smacking	Child ASB	Disagreement about Childrearing		
		No/Low	Moderate	High
Weighted 'All' Mother Sample				
No Smacking	No/Low	.5267519	.3488773	.2897931
	Moderate	.2652754	.2981737	.2928639
	Mod/High	.1438665	.228382	.2599114
	High	.0641061	.124567	.1574316
Rarely	No/Low	.4372009	.2626165	.2281657
	Moderate	.2930415	.2911669	.2792549
	Mod/High	.1813832	.2716731	.2895518
	High	.0883745	.1745435	.2030276
Monthly	No/Low	.2680701	.1437706	.122324
	Moderate	.2926158	.2253626	.2045799
	Mod/High	.2687649	.3212382	.3223068
	High	.1705492	.3096285	.3507892
Weekly/Daily	No/Low	.1961742	.1006283	.0849786
	Moderate	.2634149	.1798924	.1595213
	Mod/High	.3046021	.3171847	.3077162
	High	.2358088	.4022946	.4477839
Younger Mother Sample (Age<=20)				
No Smacking	No/Low	.4328242	.3269489	.2280718
	Moderate	.2669342	.2704088	.2462643
	Mod/High	.1945803	.2460976	.2918593
	High	.1056614	.1565447	.2338046
Rarely/Occ	No/Low	.2974799	.2168627	.5101322
	Moderate	.2680472	.2429512	.2017872
	Mod/High	.260518	.2966034	.3126259
	High	.1739549	.2435826	.3354548
Monthly	No/Low	.1661698	.1152975	.0767564
	Moderate	.2137078	.1707244	.1267852
	Mod/High	.3109863	.3077173	.2789466
	High	.3091361	.4062607	.5175119
Weekly/Daily	No/Low	.1109748	.0754708	.0494979
	Moderate	.16633	.1251231	.0884894
	Mod/High	.3060009	.277331	.2306937
	High	.4166943	.5220751	.6313189

Frequency of Smacking	Child ASB	Disagreement about Childrearing		
		No/Low	Moderate	High
Older Mother Sample (Age>=21)				
No Smacking	No/Low	.5507619	.3567698	.3123037
	Moderate	.2670111	.3132269	.3120833
	Mod/High	.1317817	.2249168	.2501829
	High	.0504453	.1050865	.1254301
Rarely/Occ	No/Low	.4740292	.2748289	.2573135
	Moderate	.2974984	.3119523	.3075575
	Mod/High	.1620275	.2684636	.2789086
	High	.066445	.1447552	.1562203
Monthly	No/Low	.2920278	.1478155	.1368672
	Moderate	.3151293	.2460949	.2358391
	Mod/High	.2582618	.3361176	.3392788
	High	.1345811	.269972	.2880149
Weekly/Daily	No/Low	.2198673	.1059569	.0977533
	Moderate	.2937528	.2015527	.1909875
	Mod/High	.3009771	.341316	.3393795
	High	.1854028	.3511744	.3718797

9.4: DISCUSSION

In this chapter we have examined a number of risk factors for child antisocial behaviour at age 5 years old. Our risk factors were marital conflict (disagreement about childrearing, parental quarrelling, domestic violence), parenting behaviour and maternal attitude (frequency of smacking, maternal negativity, maternal negative comments, maternal warmth, maternal positive comments), poverty, family structure, and parental antisocial behaviour (biological mothers and fathers). We entered all of these variables into a multivariate ordered logistic regression model, carrying out backwards elimination of each variable, and only retaining variables which significantly contributed to the final model ($p \leq 0.05$). For the weighted model the significant variables for child antisocial behaviour as rated by the mother, in order of importance, were disagreement about childrearing, frequency of smacking, the mother's antisocial behaviour, the biological father's antisocial behaviour,

parental quarrelling, maternal negative comments, maternal negativity, and maternal warmth. The teacher report on child antisocial behaviour for the weighted sample, however, showed that only frequency of smacking, the biological father's antisocial behaviour, and maternal negativity were significantly associated. It is evident, therefore, that maternal antisocial behaviour and disagreement about childrearing were highly significant for the mother report on child antisocial behaviour but were not significant for the teacher report. This difference in significance between the mother and teacher reports for these risk factors may be a result of several factors. First, mothers with high antisocial behaviour may be more likely to rate their children as having high antisocial behaviour and as a result there will be an association between maternal antisocial behaviour and child antisocial behaviour as reported by the mother. Second, mothers with high antisocial behaviour may be more likely to not only rate their children as having high antisocial behaviour but also blame all disagreements in the households on the child's behaviour. As a result there will not only be an association between high maternal antisocial behaviour and child antisocial behaviour, but an association between child antisocial behaviour and disagreements about child-rearing. However, although there are differences between the risk factors for antisocial behaviour depending on who rates the child's antisocial behaviour, it is important to take into account that both the teacher and mother reports agree that frequency of smacking, maternal negativity and the biological father's antisocial behaviour are associated with child antisocial behaviour problems.

Examining the models according to the mother's age at first birth showed that some risk factors for child antisocial behaviour at age 5 are more relevant for particular age groups.

For example, the risk factors associated with child antisocial behaviour for the children of younger mothers differed from those of the weighted 'all' sample in that domestic violence became significantly associated with child antisocial behaviour for younger mothers whilst maternal warmth lost significance (mother report). The risk factors for the children of older mothers, however, differed from those of younger mothers in that domestic violence was not significant and parental quarrelling and maternal warmth became significant (mother report). Examining the teacher report on child antisocial behaviour showed, however, that for younger mothers only the biological father's antisocial behaviour, the frequency that the child was smacked and domestic violence was associated with child antisocial behaviour. For older mothers only the frequency of smacking was associated with child antisocial behaviour. Both the mother and teacher reports, therefore, agree that domestic violence is associated with antisocial behaviour in the children of younger mothers.

Our analysis also indicated that poverty, the number of maternal positive comments and family structure were not, statistically, significantly associated with child antisocial behaviour at age 5 years old. We have argued previously in Chapter 7 that family structure *per se* may not be significantly associated with child antisocial behaviour. Instead we have suggested that it is the family dynamics such as marital conflict which carries the greater risk. Family structure, therefore, may be associated in bivariate terms with child antisocial behaviour because marital conflict has not been controlled for. Our analysis, in Chapter 7, has indicated that it is the marital conflict which may be associated with differing family structure, which carries the real risk in relation to child antisocial behaviour at age 5 years old. The number of maternal positive comments were also not significant, and this may

suggest that it is negative interactions which matter more for child antisocial behaviour at age 5 years old as opposed to positive interactions. The finding that poverty was not, statistically, significantly associated with child antisocial behaviour may be a result of a number of factors. First, our analysis did not examine how long children had lived in poverty. Previous research has indicated that the longer a child lives in poverty the higher the likelihood of negative outcomes (Duncan et al 1994). It may be possible, therefore, that if we had examined the length of time that children had been in high poverty households this may have resulted in a statistically significant association. Second, previous research has indicated that the effects of poverty may not always be immediate and may emerge in later life (Clarke & Clarke 1981). Our data-set examined the effects of poverty on five year old children, and it may be possible, therefore, that these effects may become associated with behavioural problems at a later date. Third, it may be possible that our finding that poverty does not have a statistically significant association with child behavioural problems may be a result of another variable, such as maternal antisocial behaviour, mediating the effects of poverty. Therefore, poverty may have an indirect effect on child antisocial behaviour through its effect on other factors such as parental antisocial behaviour. Previous research supports such an hypothesis and has indicated that the effects of economic pressure, for example, may be mediated by parental depression, marital conflict and parental hostility (Conger et al 1992; Conger et al 1993, Conger et al 1994). Fourth, it may be possible that our five indicators of poverty did not measure poverty very adequately, and a measure which has more indicators of multiple deprivation may be more suited to an examination of child behavioural problems. Lastly, it may be possible that poverty is not statistically associated with child behavioural problems *per se*. Previous research has indicated that poverty has

more of an effect on academic and cognitive outcomes, and less of an effect on behavioural outcomes. It may be, therefore, that the effect of poverty on child antisocial behaviour is minimal.

Our analysis also found further evidence that the effect of a risk factor on childhood behaviour is often a function of the mother's age. Younger mothers were substantially more likely to have a child with high antisocial behaviour, than older mothers, if a risk factor, such as frequent smacking, was present. For example, in the case of weekly or daily smacking, younger mothers had greater than a 50 per cent chance of having a child with high antisocial behaviour if they smacked this frequently as compared to older mothers who had a 30 per cent chance. Therefore, it may be possible that the presence of a risk factor has a greater effect on the children of younger mothers. Furthermore, when we examine the absence of a risk factor we can see that there are also differences between the two sample groups. Older mothers are, on the whole, more likely to have a child with no or low antisocial behaviour if a risk factor such as low maternal warmth is not present. However, this is not always the case for younger mothers. What is apparent for younger mothers is that when a risk factor is absent, the children of younger mothers are as likely to be in any of the four antisocial behaviour categories. In other words they have a one in four chance of being in any of the antisocial behaviour groups. The absence, therefore, of a risk factor does not have the same effect for younger mothers as it does for older mothers. There were, however, four exceptions, to this finding. Examining the variables maternal antisocial behaviour, the biological father's antisocial behaviour, no smacking and low maternal negative comments showed that a reduction in either of these factors substantially reduced the likelihood of a

younger mother having a child with high antisocial behaviour, and substantially increased the likelihood of a younger mother having a child with no or low antisocial behaviour.

Lastly, we examined how far frequency of smacking acted as a protective factor moderating the effects of maternal antisocial behaviour, paternal antisocial behaviour and disagreement about childrearing on child antisocial behaviour outcomes. We found that less frequent smacking may moderate the effects of these three factors on child antisocial behaviour.

9.5: CONCLUSIONS

In this chapter we examined how far a number of well-documented risk factors were associated with child antisocial behaviour at age 5 years old. Our analysis indicates that frequency of smacking, the biological father's antisocial behaviour, maternal negativity and domestic violence⁹⁰ were significantly associated with both the teacher and mother reports on child antisocial behaviour at age 5 years old. We suggest that what these factors have in common is that they are all concerned with negative interactions within the family home. Coercion Theory (Patterson 1982), for example, suggests that negative and hostile parenting behaviour may elicit hostile responses from children and thus coercive cycles of interchange are set up which results in behavioural problems in children becoming entrenched. Our analysis would appear to give some support to Patterson's Theory that negative parenting interactions are implicated in early onset of antisocial behaviour. Furthermore, we suggest that the association between the biological fathers' antisocial behaviour, domestic violence

⁹⁰ Domestic violence was relevant for younger mothers only.

and child antisocial behaviour may be a result of children experiencing or seeing other forms of negative interactions between either their parents (domestic violence) or with their father and other people (biological father's antisocial behaviour). If this is the case, it may be that negative interactions are key to the development of antisocial behaviour in young children. This hypothesis will be examined in more detail in Chapter 11.

Lastly, our research has also indicated that the absence of a risk factor does not always appear to have the same effect on the children of younger mothers as it does for older mothers. One of the four exceptions to this was in cases where the mother had low antisocial behaviour. In this case, younger mothers with low antisocial behaviour were more likely to have children with low antisocial behaviour. We have argued previously in this thesis that younger mothers may be more likely to face multiple risk factors which increases the prevalence of child antisocial behaviour even when a particular risk factor is absent. Furthermore, in Chapter 8 we have argued that many younger mothers may be more likely to face multiple risk factors as a result of a sub-set of younger mothers being more likely to have higher antisocial behaviour themselves⁹¹. This increased antisocial behaviour may make it more likely that they also face multiple risk factors. Therefore, our finding that younger mothers with low antisocial behaviour are more likely to have children with low antisocial behaviour may be a result of the mother's low antisocial behaviour resulting in a reduction in the number of risk factors which the family faces. Therefore, interventions which aim to reduce antisocial behaviour in younger mothers may have a knock-on effect of

⁹¹ Younger mothers are significantly more likely to have high antisocial behaviour. However, this does not mean that all younger mothers are more likely to have high antisocial behaviour. Our results have shown that there are a substantial number of younger mothers who do not have high antisocial behaviour (see Chapter 6).

reducing the likelihood of both multiple risk factors being present and child antisocial behaviour.

However, previous research has suggested that teenage parenthood may be a manifestation of antisocial behaviour (Rutter, Giller & Hagell 1998).

CHAPTER 10
PARENTING BEHAVIOUR, MATERNAL ATTITUDE
AND THE PARENTING CONTEXT

10.1: INTRODUCTION

Previous research has shown parenting practices to be one of the most robust risk factors for child antisocial behaviour (Patterson, DeGarmo, & Knutson 2000; Sampson & Laub 1993, Webster Stratton 2001), and our analysis in Chapter 9 has confirmed the importance of the association between negative parenting interactions and child behavioural problems. However, parenting practices do not occur in isolation (Belsky 1994), and any analysis of parenting behaviour and maternal attitude needs to examine how far the wider social and economic context, within which parenting practices are situated, impacts on parenting practices themselves (Conger et al 2000; Bronfenbrenner 1979; Patterson 1992). This type of analysis is important for two reasons. First, interventions which aim to improve parenting practices need also to be informed about which additional factors have an effect on parenting practices. For example, it has been hypothesised that marital conflict may impact on parenting practices and as a result interventions which aim to improve parenting practices may also need to focus on reducing marital conflict (Cummings & Davies 1994; Fauber et al 1990; Patterson 1982). Second, it is important to understand the mechanisms through which risk factors affect child behaviour. The Family Stress Model (Conger et al 2000; Conger & Elder 1994; Elder & Caspi 1988), for example, suggests that the economic stress associated with poverty influences child outcomes by having a negative impact on parenting practices

(Conger et al 2000; Elder & Caspi 1988; McLoyd 1989) whilst Patterson (1992), for example, has suggested that the effect of parental antisocial behaviour on child antisocial behaviour may be mediated by parenting practices. It has been suggested, therefore, that risk factors for antisocial behaviour operate on children and adults at both distal and proximal levels (Rutter, Giller & Hagell 1998). Distal risk factors, for example, could include demographic factors such as family structure and family poverty, whilst a proximal factor could be parenting practices (Rutter, Giller & Hagell 1998). As a result distal risk factors, such as family structure for example, may have an indirect effect on child outcomes by operating through proximal risk factors such as parenting. It is, therefore, important to examine the mechanisms through which risk factors, such as family structure, may affect child outcomes. The results of such an analysis will be important in respect to both designing possible interventions as well as informing policy and research. In this research we examine the social emotional context in which parenting practices are situated and examine how far family structure, marital conflict, poverty, and parental antisocial behaviour impact on parenting behaviour and attitude. Furthermore, we examine to what extent parenting behaviour and maternal attitude can be said to mediate the effect of poverty, marital conflict, family structure and parental antisocial behaviour on child antisocial behavioural outcomes. In the sections below we examine the previous literature on the relationship between parenting practices, marital conflict, family structure, poverty and parental antisocial behaviour before continuing on to discuss our results.

10.1.1: Marital Conflict, Parenting Behaviour and Maternal Attitude

Previous research has shown that marital conflict may affect child development in a number of ways. First, modelling the aggressive behaviour of significant others is one possible direct mechanism (Bandura 1977). Children exposed to aggressive marital conflict may learn that this is an acceptable strategy for dealing with disagreements. Second, marital conflict may affect a child's development because it may increase a child's stress levels and research has shown that young children show signs of distress when witnessing angry interactions between family members (Cummings, Zahn-Waxler & Radke-Yarrow 1981). Third, marital conflict has been hypothesised to affect child behavioural outcomes by having a negative effect on the parenting that the child is exposed to (Cummings & Davies 1994; Patterson 1982; Fauber, Forehand, Thomas & Wierson 1990). Previous research has indicated that marital conflict is associated with increases in parental negativity towards the child (Patterson, DeBaryshe and Ramsey 1989) and increases in the use of physical discipline (Jouriles, Barling & O'Leary 1987). Other parenting behaviours and attitudes associated with marital conflict may include a lack of warmth and responsiveness (Miller et al 1993; Webster-Stratton & Hammond 1999), and the presence of rejecting and controlling behaviours (Davies & Cummings 1994). Previous work on marital conflict, therefore, has focused on the role of parenting practices as a possible mediator of the effects of marital conflict on child behavioural outcomes. However, the results are not consistent. Some research has found that disruptions in parenting practices mediates the link between marital conflict and child problems (Fauber, Forehand, Thomas & Wierson 1990; Harold & Conger

1997), whilst other research find no such mediating link (Neighbors, Forehand and Bau 1997; Jenkins & Smith 1991).

10.1.2: Poverty, Parenting Behaviour and Maternal Attitude

Previous research has shown that one of the mechanisms through which poverty may affect behavioural outcomes is through its effect on parenting practices (Elder 1979, Galambos & Silbereisen 1987). In particular, low income parents are, it is argued, more likely to use physical punishment (Conger et al 1993; 1992; Hashima & Amato 1994; McLoyd 1990), and show lower levels of warmth and support to their children (Conger, Conger & Elder 1997; Dodge, Pettit and Bates 1994; McLeod and Shanahan 1993; McLoyd et al 1994). Therefore, it may be that poverty is associated with increases in child antisocial behaviour, not as a result of poverty *per se*, but as a result of the effect that poverty has on parenting practices.

10.1.3: Family Structure, Parenting Behaviour and Maternal Attitude

Many possible explanations have been put forward for the association between lone parenthood, repartnering, divorce and poorer child outcomes. In Chapter 7, for example, we suggested that the association between family structure and child antisocial behaviour may be a result of the marital conflict which had occurred within the relationship. However, it may also be possible that family structure, for example, may have an effect on child antisocial behaviour through its impact on parenting practices. It is, therefore, important to examine alternative routes of mediation. Previous research has found differences in the

parenting styles in one and two parent families. There is evidence that parental involvement and supervision may be weaker in one parent families than in two parent families (McLanahan & Sandefur 1994). Furthermore, previous research has shown that divorced parents are more likely to engage in ineffective parenting than those who are married (Amato 1993; Simons et al 1996). For example, a number of studies have indicated that divorced parents are less supportive, use harsher discipline, provide less supervision, and have more conflictual relationships with their children (Astone & McLanahan 1991; Hetherington & Clingempeel 1991). It is evident, therefore, that parenting practices may differ between one and two parent families. However, research has also indicated that parenting behaviour and attitude may differ within two parent families. Research has shown that the quality of the parent-child relationship and parenting style may be different in stepfamilies as compared to first time marriages (Fine & Kurdek 1995; Ishii-Kuntz & Ihinger-Tallman 1991; Bray 1990).

However, although parenting practices between one and two parent families may differ, the most obvious difference between lone family and two parent families is the difference in their income levels. Previous research has shown that lone parents are more likely to live on a lower income than two-parent families and it may be that it is low income which may account for the association between lone parenthood and adverse behavioural outcomes rather than single parenthood as such (Kiernan et al 1998; Marsh and McKay 1993; McKay and Marsh 1994). However, although children raised in single parent households are more likely to be poor, poverty does not fully explain their poorer behavioural outcomes. For example, it has been found that re-partnership does not necessarily change the behavioural

outcomes of the children. Children raised in stepparent families, for example, have similar levels of behavioural problems to those raised in single parent families and this finding suggests that income is not the only factor accounting for the negative effects of parental absence (Kiernan 1992). Other factors which could be involved include higher rates of depression, and anxiety (Aseltine & Kessler 1993; Demo & Acock 1996)), lower rates of parenting satisfaction (McLoyd 1990), frequency of residential moves (McLanahan & Booth 1989) and levels of parental conflict (Amato & Keith 1991; Cherlin 1992).

10.1.4: Parental Antisocial Behaviour, Parenting Behaviour and Maternal Attitude

Previous research has suggested that the strong association between parental and child antisocial behaviour could be the result of a number of factors. Firstly, as stated in Chapter 8, it could in part reflect a genetic factor. Secondly, the association between parental antisocial behaviour and disruptive behaviour in children may also be explained by the parent providing a model of aggression and antisocial attitudes for their children (Farrington Barnes and Lambert 1996). Thirdly, previous research has indicated that antisocial parents may be less likely to use competent or effective parenting (Bank et al 1993; Capaldi & Patterson 1991; Patterson & Capaldi 1991; Sampson & Laub 1993; Simons et al 1996). Thus a parent's antisocial lifestyle may indirectly affect their child's antisocial behaviour through its disruptive effect on parenting. However, little is known about the links between parental antisocial behaviour and parenting, and what is known has come from small scale studies which have focused entirely on the mother's antisocial behaviour (Capaldi &

Patterson 1991). This is problematic in that, in general, the rate of antisocial behaviour in females is lower than that for males.

10.2: RESEARCH QUESTIONS

Previous research has indicated that marital conflict; family structure, poverty and parental antisocial behaviour may be associated with differences in parenting behaviour and attitude. Furthermore, previous research has raised the question of how far parenting behaviour and attitude mediates the effects of these four factors on child antisocial behaviour outcomes. The Family Stress Model (Conger et al 2000; Conger & Elder 1994; Elder & Caspi 1988), for example, suggests that the economic strain associated with poverty may influence child outcomes by having a negative impact on parenting practices (Elder & Caspi 1988 McLoyd 1989). However, Social Causation theories suggest that poverty, for example, has a direct effect on child antisocial behaviour outcomes as being 'poor' stops parents from being able to provide experiences and environments which are beneficial to the child (Becker 1991; Becker & Thomas 1986).

We, therefore, examine the following research questions:

1. To what extent does marital conflict effect parenting behaviour and attitude?
2. How far does poverty effect parenting behaviour and maternal attitude?
3. To what extent is parenting behaviour and maternal attitude effected by family structure?

4. To what extent does parental antisocial behaviour effect parenting behaviour and maternal attitude?
5. How far does parenting behaviour and maternal attitude mediate the effects of marital conflict, family structure, poverty, and parental antisocial behaviour on child antisocial behaviour outcomes?

We use both multinomial and ordered logistic regression models to answer our research questions, and examine our results in relation to our three sample groups. Our parenting behaviour and maternal attitude measures are number of maternal negative comments, maternal negativity, maternal warmth and frequency of punishment. In Chapter 6 we found that maternal positive comments were not significant for child antisocial behaviour, and our exploratory analysis for Chapter 9 also found this to be the case. We, therefore, excluded this measure from our analysis.

Marital Conflict was measured by our three indicators of marital conflict: domestic violence, quarrelling between partners and parental disagreement about child-rearing (see Chapter 5 for more detail). We utilised these three measures of marital conflict as opposed to our single combined measure of marital conflict as we wanted to examine in more detail whether particular types of marital conflict are associated with particular parenting styles. However, when we examine how far parenting behaviour and attitude mediates the effect of marital conflict on child antisocial behaviour we use our combined measure of marital conflict, as we did not want to further complicate an already complicated matter.

Poverty was measured by a combined index which included parental unemployment, number of benefits received, income, ownership of a car, and housing tenure. Our analysis uses the 'Life History Calendar' (LHC), which was collected in the study, to measure family structure (see Chapter 5 for discussion of LHC). We divide our sample into five groups to reflect the dynamic nature of family structure (see Chapter 5 for more detail). These groups are always married, cohabiting, always 'solo', stepfamilies and divorced/separated.

Both the mother and biological fathers antisocial behaviour was measured by Achenbach's questionnaires (1991). However, for this analysis the biological father's antisocial behaviour relates only to those father's who had always lived in the household. Biological fathers who had never lived with the family or who had lived with the family for a limited time were excluded from analysis. We concentrated only on those biological fathers who had always lived in the household as we were looking at parenting behaviour and attitude and it was important to analyse this in relation to father's who were present in the family for a substantial part of the child's life, and thus may have had an effect on the parenting that a child received.

10.3: RESULTS

10.3.1: Parenting Behaviour, Maternal Attitude and Marital Conflict

In this section we examine the effect of our three marital conflict variables, disagreement about childrearing, parental quarrelling and domestic violence, on parenting behaviour and maternal attitude. We anticipate, for example, that frequent smacking will be more probable

in households where there is domestic violence (Holden & Ritchie 1991), and that high maternal negativity may be more likely to be associated with households where parental quarrelling and disagreement about childrearing are present.

10.3.1.1: Parenting Behaviour, Maternal Attitude and Disagreement about Childrearing

Examining the cross-tabulations shows that all of the parenting variables are significantly associated with disagreement about childrearing (Table 10.1). We can see that as parental disagreement about childrearing increases so does the frequency that a child will be smacked, the number of maternal negative comments and the level of maternal negativity. Furthermore, as parental disagreement about childrearing increases so maternal warmth decreases. This is the case for all sample groups. However, there are some differences between older and younger mothers. Younger mothers, for example, who report high parental disagreement about childrearing are almost twice as likely as older mothers to be rated as having high maternal negativity and low maternal warmth. High parental disagreement about childrearing, therefore, is associated with higher levels of negative parenting for younger mothers.

Table 10.1: Descriptive Statistics for Parenting Behaviour, Maternal Attitude and Disagreement about Childrearing

Parenting	Sample	No/Low Disagree	Moderate Disagree	High Disagree
Frequency of Smack				
No Smacking	Weighted	16.87 (147)	11.20 (48)	9.11 (55)
	Age<=20	19.17 (69)	16.00 (36)	8.82 (27)
	Age>=21	16.22 (78)	9.17 (20)	9.29 (29)

Parenting	Sample	No/Low Disagree	Moderate Disagree	High Disagree
Rarely/Occ	Weighted ¹	66.62 (581)	64.76 (276)	59.65 (360)
	Age<=20 ²	63.89 (230)	64.89 (146)	63.07 (193)
	Age>=21 ³	67.36 (324)	65.14 (142)	58.65 (183)
Monthly	Weighted	8.64 (75)	14.12 (60)	17.16 (104)
	Age<=20	7.22 (26)	10.22 (23)	15.36 (39)
	Age>=21	9.14 (44)	15.60 (34)	17.63 (55)
Weekly/Daily	Weighted	7.87 (69)	9.92 (42)	14.08 (85)
	Age<=20	9.72 (35)	8.89 (20)	12.75 (39)
	Age>=21	7.28 (35)	10.09 (22)	14.43 (45)
¹ Weighted 'All' Mothers = Chi2 40.54, df6, p=0.000				
² Age<=20 (Younger Mothers) = Chi2 24.76, df6, p=0.000				
³ Age >=21 (Older Mothers) = Chi2 33.21, df6, p=0.000				
Number of Negative Comments				
Missing Data	Weighted	10.82 (92)	7.17 (32)	10.29 (64)
	Age<=20	11.14 (41)	7.96 (18)	9.80 (30)
	Age>=21	10.58 (51)	6.36 (14)	10.76 (34)
No Neg Comm	Weighted	16.47 (140)	17.49 (78)	14.95 (93)
	Age<=20	11.14 (41)	17.26 (39)	10.13 (31)
	Age>=21	20.54 (99)	17.73 (39)	19.62 (62)
Upto 2 Neg	Weighted	59.03 (506)	57.85 (258)	57.23 (356)
	Age<=20	56.25 (207)	53.10 (120)	55.56 (170)
	Age>=21	62.03 (299)	62.73 (138)	58.86 (186)
>3 Neg	Weighted	13.18 (112)	17.49 (78)	17.52 (109)
	Age<=20	21.47 (79)	21.68 (49)	24.51 (75)
	Age>=21	6.85 (33)	13.18 (29)	10.76 (34)
Weighted = Chi2 11.34, df6, 0.078				
Age <=20 = Chi2 8.17, df6, p=0.200				
Age >=21 = Chi2 11.90, df6, p=0.072				
Negativity				
Missing Data	Weighted	10.94 (93)	7.85 (35)	10.61 (66)
	Age<=20	11.41 (42)	8.41 (19)	10.13 (31)
	Age>=21	10.58 (51)	7.27 (16)	11.08 (35)
No/Low Neg	Weighted	55.88 (475)	47.09 (210)	48.07 (299)
	Age<=20	47.28 (174)	39.82 (90)	37.58 (115)
	Age>=21	62.45 (301)	54.55 (120)	58.23 (184)
Moderate Neg	Weighted	23.65 (201)	29.15 (130)	28.30 (176)
	Age<=20	26.90 (99)	33.19 (75)	32.58 (100)
	Age>=21	21.16 (102)	25.00 (55)	24.05 (76)
High Neg	Weighted	9.53 (81)	15.92 (71)	13.02 (81)
	Age<=20	14.40 (53)	18.58 (42)	19.61 (60)
	Age>=21	5.81 (28)	13.18 (29)	6.65 (21)
Weighted = Chi2 24.24, df6, p=0.000				
Age <=20 = Chi2 10.88, df6, p=0.092				
Age >=21 = Chi2 16.43, df6, p=0.012				

Parenting	Sample	No/Low Disagree	Moderate Disagree	High Disagree
Warmth				
Missing Data	Weighted	10.82 (92)	7.62 (34)	10.61 (66)
	Age<=20	11.14 (41)	7.96 (18)	10.13 (31)
	Age>=21	10.58 (51)	7.27 (16)	11.08 (35)
No Warmth	Weighted	16.00 (136)	19.06 (85)	17.68 (110)
	Age<=20	21.47 (79)	19.47 (44)	23.20 (71)
	Age>=21	111.83 (57)	18.64 (41)	12.34 (39)
Mod Warmth	Weighted	31.06 (264)	36.55 (163)	31.83 (198)
	Age<=20	30.43 (112)	38.05 (86)	32.35 (99)
	Age>=21	31.54 (152)	35.00 (77)	31.33 (99)
High Warmth	Weighted	42.12 (358)	36.77 (164)	39.87 (248)
	Age<=20	36.96 (136)	34.51 (78)	34.31 (105)
	Age>=21	46.06 (222)	39.09 (86)	45.25 (143)
Weighted = Chi2 9.97, df 6, p=0.126				
Age<=20 = Chi2 5.18, df6, p=0.520				
Age>=21 = Chi2 10.21, df6, p=0.116				

We then entered all of our parenting behaviour and maternal attitude variables into an multinomial logistic regression model alongside parental disagreement about childrearing. Examining the relative risk ratios for the weighted 'all' mother sample shows that, controlling for all other parenting factors, the parenting variables associated with parental disagreement about childrearing are frequency of smacking, number of maternal negative comments, and maternal negativity (Table 10.2). Maternal warmth lost significance once all other parenting variables were controlled for. Therefore, we can see that those families with high parental disagreement about childrearing are nearly three times as likely to report weekly/daily smacking as opposed to no smacking, they are twice as likely to have a mother who is rated as having made a high level of negative comments about her child, and nearly 2.5 times more likely to be rated as having a mother with high maternal negativity. However, examining the sample according to the mother's age at first birth shows that it is older mothers who carry most of the risk for the association, shown above, between

disagreement about childrearing, frequency of smacking, maternal negativity and maternal negative comments. Younger mother's, on the other hand, who report high parental disagreement about childrearing are 2.4 times more likely to be rated as having no maternal warmth and 3 times more likely to report monthly smacking as opposed to no smacking.

Table 10.2: Relative Risk Ratios for Parenting Behaviour, Maternal Attitude and Disagreement about Childrearing

Parenting	Sample	Mod Disagree	High Disagree ¹
Frequency of Smack²			
Rarely	Weighted	1.5	1.3
	Age<=20	1.0	1.9*
	Age>=21	1.5	1.3
Monthly	Weighted	3.0*	3.3**
	Age<=20	1.3	3.7**
	Age>=21	3.0*	3.3**
Weekly/Daily	Weighted	1.7	2.6*
	Age<=20	0.7	2.3
	Age>=21	1.7	2.6*
Number of Negative Comments³			
Upto 2 Neg	Weighted	1.8**	1.6*
	Age<=20	1.8	0.9
	Age>=21	1.7	2.0**
>3 Neg	Weighted	1.9	2.0*
	Age<=20	1.4	0.6
	Age>=21	2.0	3.0**
Negativity⁴			
Moderate Neg	Weighted	1.2	1.3
	Age<=20	0.8	1.6
	Age>=21	1.4	1.1
High Neg	Weighted	1.8	2.4**
	Age<=20	0.7	1.8
	Age>=21	3.5*	3.6**
Warmth⁵			
No Warmth	Weighted	1.1	1.0
	Age<=20	3.1**	2.4*
	Age>=21	0.6	0.7
Mod Warmth	Weighted	1.2	0.9
	Age<=20	1.7	1.2
	Age>=21	1.1	0.9

Note: *= $p=0.05$, **= $p=0.01$, ***= $p=0.001$

Reference Groups:

¹No/Low Disagreement

²No Smacking

³No/Low Negative Comments

⁴No/Low Negativity

⁵High Warmth

10.3.1.2: Parenting Behaviour, Maternal Attitude and Parental Quarrelling

Examining the cross-tabulations for parenting behaviour, maternal attitude and parental quarrelling shows that for the weighted 'all' mother sample and younger mother sample all parenting variables were significant (Table 10.3). For older mothers, however, only frequency of smacking, and maternal negative comments retained significance for parental quarrelling. We can see, therefore, from the cross-tabulations, that as parental quarrelling increases so does maternal negativity, maternal negative comments, and the frequency that a child will be smacked. Furthermore, as parental quarrelling increases so maternal warmth decreases.

Table 10.3: Descriptive Statistics for Parenting Behaviour, Maternal Attitude and Parental Quarrelling

Parenting	Sample	No/Low Quarrel	Moderate Quarrel	High Quarrel
Frequency of Smack				
No Smacking	Weighted	16.23 (173)	9.31 (48)	9.16 (54)
	Age<=20	19.79 (76)	10.11 (28)	12.11 (51)
	Age>=21	15.23 (90)	9.13 (23)	7.32 (18)
Rarely/Occ	Weighted	66.39 (707)	62.16 (321)	64.45 (379)
	Age<=20	64.33 (247)	63.54 (176)	62.47 (263)
	Age>=21	66.84 (395)	62.30 (157)	65.85 (162)
Monthly	Weighted	8.99 (96)	18.19 (94)	13.05 (77)
	Age<=20	8.07 (31)	15.16 (42)	13.31 (56)
	Age>=21	9.48 (56)	18.65 (47)	13.01 (32)
Weekly/Daily	Weighted	8.39 (89)	10.34 (53)	13.34 (78)
	Age<=20	7.81 (30)	11.19 (31)	12.11 (51)
	Age>=21	8.45 (50)	9.92 (25)	13.82 (34)
Weighted 'All' Mother = Chi2 47.15, df6, p=0.000				
Age<=20 (Younger Mothers) = Chi2 24.72, df6, p=0.000				
Age>=21 (Older Mothers) = Chi2 28.97, df6, p=0.000				
Number of Negative Comments				
Missing Data	Weighted	9.63 (95)	11.65 (62)	9.97 (67)
	Age<=20	8.72 (34)	12.86 (36)	9.72 (41)
	Age>=21	10.23 (61)	10.32 (26)	10.40 (26)

Parenting	Sample	No/Low Quarrel	Moderate Quarrel	High Quarrel
No Neg Comm	Weighted	15.92 (157)	14.66 (78)	13.99 (94)
	Age<=20	11.03 (43)	11.07 (31)	11.37 (48)
	Age>=21	19.13 (114)	18.65 (47)	18.40 (46)
Upto 2 Neg	Weighted	60.24 (594)	56.77 (302)	56.10 (377)
	Age<=20	57.18 (223)	54.64 (153)	53.55 (226)
	Age>=21	62.25 (371)	59.13 (149)	60.40 (151)
>3 Neg	Weighted	14.20 (14)	16.92 (90)	19.94 (134)
	Age<=20	23.08 (90)	21.43 (60)	25.36 (107)
	Age>=21	8.39 (61)	11.90 (30)	10.80 (27)
Weighted = Chi2 11.86, df6, p=0.065				
Age<=20 = Chi2 4.56, df6, p=0.601				
Age>=21 = Chi2 2.98, df6, p=0.811				
Negativity				
Missing Data	Weighted	9.74 (96)	12.03 (64)	10.42 (70)
	Age<=20	8.72 (34)	12.86 (36)	9.48 (40)
	Age>=21	10.07 (60)	10.32 (26)	10.40 (26)
No/Low Neg	Weighted	53.65 (529)	44.17 (235)	45.09 (303)
	Age<=20	43.59 (170)	34.29 (96)	39.10 (165)
	Age>=21	60.23 (359)	55.16 (139)	55.20 (138)
Moderate Neg	Weighted	26.06 (257)	30.45 (162)	29.91 (201)
	Age<=20	31.79 (124)	35.00 (98)	32.23 (136)
	Age>=21	22.32 (133)	25.40 (64)	26.00 (65)
High Neg	Weighted	10.55 (104)	13.35 (71)	14.58 (98)
	Age<=20	15.90 (62)	17.50 (49)	18.48 (78)
	Age>=21	7.05 (420)	8.73 (22)	8.00 (20)
Weighted = Chi 19.61, df6, p=0.003				
Age<=20 = Chi2 8.16, df6, p=.226				
Age>=21 = Chi2 3.26, df6, p=0.774				
Warmth				
Missing Data	Weighted	9.74 (96)	11.84 (63)	10.27 (69)
	Age<=20	8.72 (34)	12.86 (36)	9.95 (42)
	Age>=21	10.40 (62)	10.71 (27)	10.80 (27)
No Warmth	Weighted	16.33 (161)	18.61 (99)	20.39 (137)
	Age<=20	22.82 (89)	20.00 (560)	24.41 (103)
	Age>=21	12.08 (72)	17.06 (43)	13.60 (34)
Mod Warmth	Weighted	32.86 (324)	30.45 (1620)	34.67 (233)
	Age<=20	34.62 (135)	30.36 (85)	33.41 (141)
	Age>=21	31.71 (9189)	30.56 (77)	36.80 (92)
High Warmth	Weighted	41.08 (405)	39.10 (208)	34.67 (233)
	Age<=20	33.85 (132)	36.79 (103)	32.23 (136)
	Age>=21	45.81 (273)	41.67 (105)	38.80 (97)
Weighted = Chi2 11.10, df6, p=0.085				
Age<=20 = Chi2 6.17, df6, p=0.403				
Age>=21 = Chi2 7.28, df6, p=0.295				

Examining the relative risk ratios derived from a multinomial logistic regression model (Table 10.4) shows that for the weighted 'all' mother sample only maternal negativity and frequency of smacking retains significance for parental quarrelling once all other parenting variables are controlled for. Furthermore, when we examine the sample according to the mother's age at first birth we can see that younger mothers who report high quarrelling are twice as likely to be rated as having high levels of maternal negativity whilst older mothers are 4 times more likely to smack on a week/daily basis as opposed to not smacking.

Table 10.4: Relative Risk Ratios for Parenting Behaviour, Maternal Attitude and Parental Quarrelling

Parenting	Sample	Moderate Quarrel	High Quarrel ¹
Frequency of Smack²			
Rarely	Weighted	1.6	1.9**
	Age<=20	0.7	1.1
	Age>=21	1.7	2.8*
Monthly	Weighted	3.3***	2.9***
	Age<=20	0.4	1.2
	Age>=21	3.6**	4.3**
Weekly/Daily	Weighted	1.8	2.5**
	Age<=20	0.5	1.1
	Age>=21	1.8	4.1**
Number of Negative Comments³			
Upto 2 Neg	Weighted	1.3	1.3
	Age<=20	0.8	1.1
	Age>=21	1.5	1.3
>3 Neg	Weighted	1.3	1.2
	Age<=20	0.6	1.2
	Age>=21	1.8	1.0
Negativity⁴			
Moderate Neg	Weighted	1.4	1.4*
	Age<=20	2.7***	1.6*
	Age>=21	1.0	1.3
High Neg	Weighted	1.4	1.8
	Age<=20	2.3	2.1*
	Age>=21	1.2	1.4
Warmth⁵			
No Warmth	Weighted	1.1	1.5
	Age<=20	1.7	1.8
	Age>=21	0.8	1.2
Mod Warmth	Weighted	0.9	1.0
	Age<=20	1.0	1.8
	Age>=21	0.8	0.9

Note: *= $p=0.05$, **= $p=0.01$, ***= $p=0.001$

Reference Groups:

¹No/Low Quarrelling

²No Smacking

³No/Low Negative Comments

⁴No/Low Negativity

⁵High Warmth

10.3.1.3: Parenting Behaviour, Maternal Attitude and Domestic Violence

Examining the cross tabulations for parenting behaviour, maternal attitude and domestic violence for the weighted 'all' mother sample and younger mother sample shows that all parenting variables are significant (Table 10.5). For older mothers only frequency of smacking retained significance. Again, it is evident from an examination of the cross-tabulations that as domestic violence increases this is associated with increases in the frequency that a child is smacked, the number of maternal negative comments and maternal negativity. Furthermore, as domestic violence increases so maternal warmth decreases.

Table 10.5: Descriptive Statistics for Parenting Behaviour, Maternal Attitude and Domestic Violence

Parenting	Sample	No/Low Domvio	Moderate Domvio	High Domvio
Frequency of Smack				
No Smacking	Weighted	15.16 (206)	11.47 (32)	6.92 (37)
	Age<=20	18.14 (88)	14.58 (21)	10.15 (46)
	Age>=21	14.40 (109)	10.29 (14)	4.08 (8)
Rarely/Occ	Weighted	66.47 (905)	66.21 (183)	60.04 (320)
	Age<=20	65.15 (316)	71.53 (103)	58.94 (267)
	Age>=21	66.97 (507)	63.97 (87)	61.22 (120)
Monthly	Weighted	10.26 (140)	14.43 (40)	16.32 (87)
	Age<=20	7.23 (35)	9.03 (13)	17.88 (81)
	Age>=21	10.96 (83)	16.91 (23)	14.80 (29)
Weekly/Daily	Weighted	8.11 (110)	7.89 (22)	16.72 (89)
	Age<=20	9.48 (46)	4.86 (7)	13.03 (59)
	Age>=21	7.67 (58)	8.83 (12)	19.90 (39)
Weighted 'All' Mother = Chi2 64.14, df6, p=0.000				
Age<=20 (Younger) = Chi2 44.78, df6, p=0.000				
Age>=21 (Older) = Chi2 42.91, df6, p=0.000				
Number of Negative Comments				
Missing Data	Weighted	9.74 (122)	11.89 (34)	10.43 (68)
	Age<=20	8.81 (43)	13.51 (20)	10.53 (48)
	Age>=21	10.34 (79)	10.14 (14)	10.20 (20)
No Neg Comm	Weighted	16.29 (204)	14.69 (42)	12.73 (83)

Parenting	Sample	No/Low Domvio	Moderate Domvio	High Domvio
	Age<=20	11.89 (58)	12.84 (19)	9.87 (45)
	Age>=21	19.11 (146)	16.67 (23)	19.39 (38)
Upto 2 Neg	Weighted	59.98 (751)	55.24 (158)	55.83 (364)
	Age<=20	57.38 (280)	48.65 (72)	54.82 (250)
	Age>=21	61.65 (471)	62.32 (86)	58.16 (114)
>3 Neg	Weighted	13.98 (175)	18.18 (52)	21.01 (137)
	Age<=20	21.93 (107)	25.00 (37)	24.78 (113)
	Age>=21	8.90 (68)	10.87 (15)	12.24 (24)
Weighted = Chi2 19.72, df6, p=0.003				
Age<=20 = Chi2 6.4, df6, p=0.379				
Age>=21 = Chi2 2.7, df6, p=0.839				
Negativity				
Missing Data	Weighted	9.90 (124)	12.59 (360)	10.74 (70)
	Age<=20	8.81 (43)	14.19 (21)	10.96 (50)
	Age>=21	10.60 (81)	10.87 (15)	10.20 (20)
No/Low Neg	Weighted	52.56 (658)	46.85 (134)	42.18 (275)
	Age<=20	43.44 (212)	37.16 (550)	35.96 (164)
	Age>=21	58.38 (446)	57.25 (79)	56.63 (111)
Moderate Neg	Weighted	27.00 (338)	27.62 (79)	31.13 (203)
	Age<=20	32.17 (157)	28.38 (42)	34.87 (159)
	Age>=21	23.69 (181)	26.81 (37)	22.45 (44)
High Neg	Weighted	10.54 (132)	12.94 (37)	15.95 (104)
	Age<=20	15.57 (76)	20.27 (30)	18.20 (83)
	Age>=21	7.33 (560)	5.07 (7)	10.71 (21)
Weighted = Chi2 24.12, df6, p=0.000				
Age<=20 = Chi2 10.26, df6, p=0.114				
Age>=21 = Chi2 4.51, df6, p=0.607				
Warmth				
Missing Data	Weighted	9.90 (1240)	12.24 (35)	10.58 (69)
	Age<=20	8.81 (43)	13.51 (20)	10.75 (49)
	Age>=21	10.60 (81)	10.87 (15)	10.20 (20)
No Warmth	Weighted	17.49 (219)	17.48 (50)	19.63 (128)
	Age<=20	22.95 (1120)	24.32 (36)	21.93 (100)
	Age>=21	14.01 (107)	10.14 (14)	14.29 (28)
Mod Warmth	Weighted	31.63 (396)	29.02 (83)	36.81 (240)
	Age<=20	31.76 (155)	27.70 (41)	36.18 (165)
	Age>=21	31.54 (241)	30.43 (42)	38.27 (75)
High Warmth	Weighted	40.97 (513)	41.26 (118)	32.98 (215)
	Age<=20	36.48 (178)	34.46 (51)	31.14 (142)
	Age>=21	43.85 (335)	48.55 (67)	37.24 (73)
Weighted = Chi2 15.05, df6, p=0.020				
Age<=20 = Chi2 8.08, df6, p=0.359				
Age>=21 = Chi2 4.04, df6, p=0.853				

However, when we examine the relative risk ratios we found that for all sample groups only frequency of smacking retains significance with domestic violence when all other parenting variables are controlled for (Table 10.6). Therefore, we can see that younger mother's, for example, who report high domestic violence were 15 times more likely to have children who were smacked on a daily basis as opposed to not smacked.

Table 10.6: Relative Risk Ratios for Parenting Behaviour, Maternal Attitude and Domestic Violence

Parenting	Sample	Moderate Domvio	High Domvio ¹
Frequency of Smack²			
Rarely	Weighted	1.3	2.3***
	Age<=20	1.5	6.1***
	Age>=21	1.1	1.5
Monthly	Weighted	1.6	2.9***
	Age<=20	2.3	10.0***
	Age>=21	1.0	3.4***
Weekly/Daily	Weighted	0.8	4.4***
	Age<=20	1.2	15.5***
	Age>=21	0.4	1.9
Number of Negative Comments³			
Upto 2 Neg	Weighted	1.0	0.9
	Age<=20	0.6	0.7
	Age>=21	1.2	0.9
>3 Neg	Weighted	0.7	0.8
	Age<=20	0.7	0.8
	Age>=21	0.5	0.8
Negativity⁴			
Moderate Neg	Weighted	1.4	1.1
	Age<=20	1.6	1.4
	Age>=21	1.4	0.8
High Neg	Weighted	2.1	1.4
	Age<=20	2.4	1.4
	Age>=21	2.1	1.1
Warmth⁵			
No Warmth	Weighted	0.9	1.5
	Age<=20	1.1	1.6
	Age>=21	0.8	1.1
Mod Warmth	Weighted	1.0	1.1
	Age<=20	1.1	1.0
	Age>=21	1.0	1.2

Note: *= $p=0.05$, **= $p=0.01$, ***= $p=0.001$

Reference Groups:

¹No/Low Domestic Violence

²No Smacking

³No/Low Negative Comments

⁴No/Low Negativity

⁵High Warmth

10.3.2: Poverty, Parenting Behaviour and Maternal Attitude

The cross-tabulations in Table 10.7 below show that there are significant associations between poverty, maternal negativity, maternal negative comments and maternal warmth (weighted 'all' mother sample). Furthermore, it is evident from the cross-tabulations that the frequency that a child is smacking is not significantly associated with poverty. Examining the sample according to the mother's age at first birth shows that for younger mothers there are significant associations between poverty, and maternal warmth. The associations between poverty, and maternal negativity, therefore, appear to relate only to older mothers.

Table 10.7: Descriptive Statistics for Poverty, Parenting Behaviour and Maternal Attitude

Parenting	Sample	Poverty Levels		
		No/Low	Moderate	High
Frequency of Smacking				
No Smacking	Weighted	12.14 (121)	13.59 (94)	12.34 (63)
	Age<=20	15.07 (33)	12.70 (39)	14.68 (86)
	Age>=21	11.74 (71)	13.66 (50)	8.66 (11)
Rarely	Weighted	64.79 (649)	66.58 (463)	62.47 (321)
	Age<=20	68.49 (150)	63.52 (195)	61.60 (361)
	Age>=21	64.30 (389)	67.49 (247)	65.35 (83)
Monthly	Weighted	12.94 (129)	10.97 (76)	13.05 (67)
	Age<=20	7.31 (16)	10.75 (33)	13.99 (82)
	Age>=21	13.71 (83)	11.48 (42)	10.24 (13)
Weekly/Daily	Weighted	10.13 (101)	8.86 (61)	12.14 (62)
	Age<=20	9.31 (20)	13.03 (40)	9.73 (57)
	Age>=21	10.25 (62)	7.37 (27)	15.75 (20)
Negative Comments				
No/Low Negative Com	Weighted	18.78 (170)	18.25 (115)	14.93 (70)

Weighted 'All' Mothers = Chi2 2.8, df6, p=0.833, Gamma = 0.01

Age<=20 (Younger Mothers) = Chi2 10.90, df6, p=0.091, Gamma =0.04

Age>=21 (Older Mothers) = Chi2 10.73, df6, p=0.097, Gamma =-.02

Parenting	Sample	Poverty Levels		
		No/Low	Moderate	High
	Age<=20	13.99 (27)	13.43 (38)	14.36 (78)
	Age>=21	19.56 (107)	19.82 (65)	15.45 (17)
Upto 2 Neg Comments	Weighted	66.67 (605)	67.15 (423)	61.72 (288)
	Age<=20	68.39 (132)	61.48 (174)	60.41 (328)
	Age>=21	66.36 (363)	69.20 (227)	64.55 (71)
>3 Negative Comments	Weighted	14.55 (132)	14.60 (92)	23.35 (109)
	Age<=20	17.62 (34)	25.09 (71)	25.23 (137)
	Age>=21	14.08 (77)	10.98 (36)	20.00 (22)
Weighted = Chi2 21.54, df4, p=0.000				
Age<=20 = Chi2 5.38, df4, p=0.250				
Age>=21 = Chi2 6.29, df4, p=0.178				
Negativity				
No/Low Negativity	Weighted	61.59 (556)	59.91 (376)	47.34 (220)
	Age<=20	54.69 (105)	44.33 (125)	44.10 (239)
	Age>=21	62.75 (342)	65.14 (213)	53.64 (59)
Moderate Negativity	Weighted	29.81 (269)	29.55 (186)	32.64 (152)
	Age<=20	29.69 (57)	34.75 (98)	35.79 (194)
	Age>=21	29.54 (161)	27.83 (91)	26.36 (29)
High Negativity	Weighted	8.60 (78)	10.54 (66)	20.02 (93)
	Age<=20	15.62 (30)	20.92 (59)	20.11 (109)
	Age>=21	7.71 (42)	7.03 (23)	20.00 (22)
Weighted = Chi2 43.17, df4, p=0.000				
Age<=20 = Chi2 7.16, df4, p=0.12				
Age>=21 = Chi2 19.63, df4, p=0.001				
Warmth				
No/Low Warmth	Weighted	12.91 (117)	17.19 (108)	28.07 (131)
	Age<=20	19.27 (37)	24.82 (70)	29.15 (158)
	Age>=21	12.27 (67)	14.63 (48)	25.45 (28)
Moderate Warmth	Weighted	35.83 (324)	33.72 (212)	38.30 (178)
	Age<=20	32.29 (62)	40.78 (115)	41.70 (226)
	Age>=21	36.26 (198)	31.40 (103)	31.82 (35)
High Warmth	Weighted	51.26 (464)	49.09 (309)	33.63 (156)
	Age<=20	48.44 (93)	34.40 (97)	29.15 (158)
	Age>=21	51.47 (281)	53.96 (177)	42.73 (47)
Weighted = Chi2 69.43, df4, p=0.000				
Age<=20 = Chi2 24.22, df4, p=0.000				
Age>=21 = Chi2 14.59, df4, p=0.006,				

We wanted to test this further so we entered all of our parenting variables along with poverty into a multinomial logistic regression model (Table 10.8). The only significant finding of interest was the association between poverty and maternal warmth. Mothers who

experience high levels of poverty were 2.3 times more likely to be rated as showing no or low warmth towards their children. No other parenting variables were significant. Examining the sample according to the mother's age at first birth confirmed this result and indicated that the association between poverty and maternal warmth could be explained by the mother's age at first birth. We found that younger mothers were nearly 3 times as likely to be rated as having no or low maternal warmth when there was high levels of poverty in their household (Table 10.8).

Table 10.8: RRR's Poverty, Parenting Behaviour and Maternal Attitude

Parenting	Sample	Poverty Levels	
		Moderate	High ¹
Frequency of Smacking²			
Rarely	Weighted	0.9	0.8
	Age<=20	0.9	0.8
	Age>=21	0.9	1.3
Monthly	Weighted	0.7	0.7
	Age<=20	1.2	1.4
	Age>=21	0.8	0.7
Weekly/Daily	Weighted	0.8	0.9
	Age<=20	1.2	0.7
	Age>=21	0.6	1.3
Negative Comments³			
Upto 2 Neg Comments	Weighted	1.0	0.8
	Age<=20	0.5	0.4*
	Age>=21	1.1	1.0
>3 Negative Comments	Weighted	0.9	0.8
	Age<=20	0.8	0.8
	Age>=21	0.9	0.7
Negativity⁴			
Moderate Negativity	Weighted	0.9	1.2
	Age<=20	1.5	1.5
	Age>=21	0.8	1.0
High Negativity	Weighted	1.0	1.7
	Age<=20	0.8	0.7
	Age>=21	0.7	2.4
Warmth⁵			
No/Low Warmth	Weighted	1.4	2.3**
	Age<=20	1.6	2.9*
	Age>=21	1.4	1.5
Moderate Warmth	Weighted	0.9	1.3
	Age<=20	1.8*	2.6***
	Age>=21	0.7	0.8

Note: *=p=0.05, **=p=0.01, ***=p=0.001

Reference Groups:

¹No/Low Poverty

²Rarely/Occ Smack

³No/Low Negative Comments

⁴No/Low Negativity

⁵High Warmth

10.3.3: Family Structure, Parenting Behaviour and Maternal Attitude

Examining the bivariate cross-tabulations (Table 10.9) suggests that, for the weighted 'all' mother sample, there were differences in parenting behaviour and maternal attitude between our five family structure groups. Table 10.9 shows that the always married group were in nearly all cases more likely than all the other groups to be rated as having positive parenting styles (high warmth/low negativity). Mothers in cohabiting families, on the other hand, were more likely to be rated as having made more negative comments about their child, whilst mothers who were always 'solo' were more likely to be rated as having high maternal negativity. Moreover, mothers who were separated or divorced were more likely to be rated as showing less maternal warmth towards their child. It is evident from the bivariate tables, therefore, that there are differences in parenting behaviour and maternal attitude according to family structure. Mothers who are always married are more likely than mothers in stepfamilies, mothers who are divorced, separated, cohabiting or always solo to have lower maternal negativity, and to be rated as having higher maternal warmth.

The bivariate results have suggested that there may be differences in parenting behaviour and maternal attitude according to family structure. To test this further we entered all our parenting variables into a multinomial logistic regression model to examine which parenting variables retained significance once all other parenting variables were controlled for (Table 10.10). We also controlled for poverty, as we did not want to confound any association between poverty and parenting practices with family structure and parenting practices. For the 'all' mother sample the only significant result of interest was that mothers who were

Table 10.9: Descriptive Statistics for Parenting Behaviour, Maternal Attitude and Family Structure

PARENTING	SAMPLE	FAMILY STRUCTURE				
		Sep/Div	Stepfamily	Married	Cohabiting	Always Solo
Frequency of Smacking						
No Smacking	Weighted	7.31 (19)	18.35 (21)	13.31 (196)	11.52 (35)	8.76 (6)
	Age<=20	11.06 (24)	20.61 (27)	15.12 (67)	13.47 (33)	6.94 (5)
	Age>=21	3.49 (3)	14.81 (4)	12.91 (109)	10.34 (12)	10.53 (2)
Rarely	Weighted	71.17 (175)	60.98 (69)	64.59 (949)	61.08 (185)	70.22 (47)
	Age<=20	65.44 (142)	58.78 (77)	63.43 (281)	64.08 (157)	65.28 (47)
	Age>=21	76.74 (66)	70.37 (19)	64.81 (547)	58.62 (68)	78.95 (15)
Monthly	Weighted	12.81 (31)	10.34 (12)	11.85 (174)	16.33 (50)	9.03 (6)
	Age<=20	15.67 (34)	12.98 (17)	9.03 (40)	13.06 (32)	11.11 (8)
	Age>=21	10.47 (9)	0.00 (0)	12.56 (106)	18.97 (22)	5.26 (1)
Weekly/Daily	Weighted	8.71 (21)	10.33 (12)	10.25 (151)	11.07 (34)	11.99 (8)
	Age<=20	7.83 (17)	7.63 (10)	12.42 (55)	9.39 (23)	16.67 (12)
	Age>=21	9.30 (8)	14.82 (4)	9.72 (82)	12.07 (14)	5.26 (1)
Weighted 'All' Mother = Chi2 21.10, df12, p=0.04 Age <=20 (Younger Mother) = Chi2 22.05,df12, p=0.037 Age >=21 (Older Mother) = Chi2 19.37, df12, p=0.080						
Negative Comments						
Missing Data	Weighted	9.63 (125)	10.49 (37)	12.09 (37)	9.12 (33)	16.30 (15)
	Age<=20	8.48 (38)	11.94 (16)	10.55 (23)	10.16 (25)	16.67 (12)
	Age>=21	10.24 (87)	3.57 (1)	15.91 (14)	6.90 (8)	15.00 (3)
No Negative Comments	Weighted	18.26 (237)	8.64 (14)	7.19 (22)	12.98 (47)	10.87 (10)
	Age<=20	14.06 (630)	8.21 (15)	6.88 (150)	11.79 (29)	5.56 (4)
	Age>=21	20.47 (174)	10.71 (3)	7.95 (7)	15.52 (18)	30.00 (6)

PARENTING	SAMPLE	FAMILY STRUCTURE				
		Sep/Div	Stepfamily	Married	Cohabiting	Always Solo
Upto 2 Neg Comments	Weighted	59.32 (770)	61.11 (99)	56.86 (174)	55.52 (201)	48.91 (45)
	Age<=20	56.70 (254)	58.96 (79)	56.42 (123)	50.81 (1250)	51.39 (37)
	Age>=21	60.71 (516)	71.43 (20)	57.95 (51)	65.52 (76)	40.00 (8)
>3 Negative Comments	Weighted	9.63 (125)	10.49 (17)	12.09 (37)	9.12 (33)	16.30 (15)
	Age<=20	20.76 (93)	20.90 (28)	26.15 (57)	27.24 (670)	26.39 (19)
	Age>=21	8.59 (73)	14.29 (4)	18.18 (16)	12.07 (14)	15.00 (3)
Weighted 'All' Mother = Chi2 67.65, df12, p=0.000 Age <=20 (Younger Mother) = Chi2 20.74, df12, p=0.054 Age >=21 (Older Mother) = Chi2 26.97, df12, p=0.008						
Negativity						
Missing Data	Weighted	9.86 (128)	10.49 (17)	12.75 (39)	9.67 (35)	15.22 (14)
	Age<=20	8.48 (38)	11.94 (16)	11.47 (250)	10.98 (27)	15.28 (11)
	Age>=21	10.59 (90)	3.57 (1)	15.91 (14)	6.90 (8)	15.00 (3)
No/low negativity	Weighted	55.08 (715)	40.12 (650)	33.66 (103)	43.92 (159)	38.04 (35)
	Age<=20	46.65 (209)	35.07 (47)	31.65 (69)	37.40 (92)	34.72 (25)
	Age>=21	59.53 (506)	64.29 (18)	38.64 (34)	57.76 (67)	50.00 (10)
Some negativity	Weighted	25.25 (329)	36.42 (59)	36.27 (111)	26.52 (96)	34.78 (32)
	Age<=20	28.79 (129)	38.81 (52)	37.16 (81)	29.67 (73)	38.89 (28)
	Age>=21	23.53 (200)	25.00 (7)	34.09 (30)	19.83 (23)	20.00 (4)
High negativity	Weighted	9.71 (126)	12.96 (21)	17.32 (530)	19.89 (72)	11.96 (11)
	Age<=20	16.07 (72)	14.18 (19)	19.72 (430)	21.95 (54)	11.11 (8)
	Age>=21	6.35 (54)	7.14 (2)	11.36 (910)	15.52 (18)	15.00 (3)
Weighted 'All' Mother = Chi2 81.05, df12, p=0.000 Age <=20 (Younger Mother) = Chi2 27.30, df12, p=0.007 Age >=21 (Older Mother) = Chi2 30.54, df12, p=0.002						

PARENTING	SAMPLE	FAMILY STRUCTURE				
		Sep/Div	Stepfamily	Married	Cohabiting	Always Solo
Warmth Missing Data	Weighted	9.86 (128)	10.49 (17)	12.09 (37)	9.39 (34)	16.30 (15)
	Age<=20	8.48 (380)	11.94 (16)	10.55 (23)	10.57 (26)	16.67 (12)
	Age>=21	10.59 (90)	3.57 (1)	15.91 (14)	6.90 (8)	15.00 (3)
No/Low warmth	Weighted	15.49 (201)	20.37 (33)	25.82 (79)	20.99 (76)	19.57 (18)
	Age<=20	19.18 (89)	22.39 (30)	27.98 (61)	24.39 (60)	20.83 (15)
	Age>=21	13.18 (112)	10.71 (3)	20.45 (18)	13.79 (16)	15.00 (3)
Moderate warmth	Weighted	32.20 (418)	33.95 (55)	34.97 (107)	33.98 (123)	33.70 (31)
	Age<=20	33.93 (152)	33.58 (450)	33.49 (73)	31.71 (78)	36.11 (26)
	Age>=21	31.29 (266)	35.71 (10)	38.64 (34)	38.79 (45)	25.00 (5)
High warmth	Weighted	42.45 (551)	35.19 (57)	27.12 (83)	35.64 (129)	30.43 (28)
	Age<=20	37.72 (169)	32.09 (43)	27.98 (61)	33.33 (82)	26.39 (19)
	Age>=21	44.94 (382)	50.00 (14)	25.00 (22)	40.52 (47)	45.00 (9)

Weighted 'All' Mother = Chi2 40.76, df12, p=0.000
Age <=20 (Younger Mother) = Chi2 15.26, df12, p=.227
Age >=21 (Older Mother) = Chi2 19.92, df12, p=0.069

Table 10.10: Relative Risks Ratios for Family Structure, Parenting Behaviour and Maternal Attitude Controlling for Poverty

PARENTING	FAMILY STRUCTURE (RRR)			
	Sep/Div	Stepfamily	Cohabiting	Always Solo
Rarely	2.0*	0.6	0.9	1.9
Monthly Frequency Smacking ²	1.8	0.5	1.1	1.3
Weekly/Daily Frequency Smacking	0.9	0.6	0.8	1.8
Upto 2 Negative Comments ³	0.5*	0.5*	0.9	1.2
>3 Negative Comments	0.8	0.3*	1.0	0.4
Some Negativity ⁴	1.2	1.6	1.4	1.6
High Negativity	1.0	1.8	1.8	4.0*
No/Low Warmth ⁵	1.0	0.9	0.9	0.6
Moderate Warmth	0.9	0.7	1.2	1.0
Moderate Poverty ⁶	6.4***	2.1	2.3***	1.0
High Poverty	47.4***	20.2***	5.3***	25.4***

* = 0.05, ** = 0.01, *** = 0.001

Reference Groups

¹Always Married

²Rarely Smacked

³No/Low Negative Comments

⁴No/Low Negativity

⁵High Warmth

⁶No/Low Poverty

always 'solo' were four times more likely than mothers who had always been married to be rated as having high maternal negativity. All other parenting variables were non-significant or of a non-substantive interest. We were unable to examine the sample according to the mother's age at first birth due to a lack of observations in certain cells which made the results unstable. However, what is evident is that, even controlling for poverty, there is a difference between levels of maternal negativity in always 'solo' families and always married families.

10.3.4: Parenting Behaviour, Maternal Attitude and Parental Antisocial Behaviour

In the bivariate cross-tabulations below we can see that all parenting behaviour and maternal attitude variables were significantly associated with the mother's antisocial behaviour. Mothers with high antisocial behaviour were more likely to smack more frequently, to be rated as having made a high number of negative comments about their child, to have higher maternal negativity, and to have lowered maternal warmth. (Table 10.11). Examining the sample according to the mother's age at first birth showed that for younger mothers there was a significant association between the mother's antisocial behaviour and all the parenting variables. For older mothers, the significant parenting variables associated with maternal antisocial behaviour were frequency of smacking, maternal negativity and maternal negative comments. Maternal warmth was not significant for older mothers (Table 10.11).

Table 10.11: Descriptive Statistics for Mothers Antisocial Behaviour, Parenting Behaviour and Maternal Attitude

Mothers Antisocial Behaviour					
Parenting	Sample	No/Low	Moderate	Mod/High	High
Frequency of Smacking					
No Smacking	Weighted	17.43 (139)	15.84 (74)	6.27 (30)	7.79 (35)
	Age<=20	24.89 (59)	18.35 (40)	7.85 (23)	10.00 (36)
	Age>=21	15.93 (73)	14.81 (36)	5.48 (12)	6.18 (11)
Rarely/Occ	Weighted	69.33 (554)	62.35 (292)	66.40 (320)	57.84 (264)
	Age<=20	64.99 (154)	63.30 (138)	68.26 (200)	58.89 (212)
	Age>=21	70.09 (321)	62.55 (152)	65.75 (144)	57.30 (102)
Monthly	Weighted	6.26 (50)	11.46 (54)	17.57 (85)	18.46 (84)
	Age<=20	5.06 (12)	10.55 (23)	11.26 (33)	17.50 (63)
	Age>=21	6.77 (31)	11.52 (28)	20.55 (45)	19.10 (34)
Weekly/Daily	Weighted	6.98 (56)	10.35 (48)	9.76 (47)	15.91 (73)
	Age<=20	5.06 (12)	7.80 (17)	12.63 (37)	13.61 (49)
	Age>=21	7.21 (33)	11.12 (27)	8.22 (18)	17.42 (31)
Weighted 'All' Mother = Chi2 112.28, df 9, p=0.000, Gamma = 0.28					
Age<=20 (Younger Mothers) = Chi2 68.95, df9, p=0.000, Gamma = 0.30					
Age>=21 (Older Mothers) = Chi2 67.96, df9, p=0.000, Gamma = 0.29					
Negative Comments					
Missing Data	Weighted	13.07 (92)	9.87 (46)	6.78 (350)	10.19 (55)
	Age<=20	12.40 (30)	9.63 (21)	7.09 (21)	11.60 (42)
	Age>=21	13.42 (620)	10.08 (25)	6.36 (14)	7.30 (13)
No Neg Comments	Weighted	14.35 (101)	18.24 (85)	14.92 (77)	12.78 (69)
	Age<=20	11.57 (28)	13.76 (30)	9.46 (28)	10.22 (37)
	Age>=21	15.80 (73)	22.18 (55)	22.27 (49)	17.98 (32)
Upto 2 Neg Com	Weighted	59.52 (419)	56.22 (2620)	58.91 (304)	56.67 (306)
	Age<=20	55.79 (135)	55.96 (122)	56.76 (168)	52.76 (191)
	Age>=21	61.47 (2840)	56.45 (140)	61.82 (136)	64.61 (115)
>=3 Neg Com	Weighted	13.07 (920)	15.67 (73)	19.38 (100)	20.37 (110)
	Age<=20	20.25 (49)	20.64 (45)	26.69 (79)	25.41 (92)
	Age>=21	9.31 (43)	11.29 (28)	9.55 (21)	10.11 (18)
Weighted = Chi2 29.91, df9, p=0.000					
Age<=20 = Chi2 11.33, df9, p=0.254					
Age>=21 = Chi2 16.36, df9, p=0.060					
Negativity					
Missing Data	Weighted	13.07 (92)	10.30 (48)	9.98 (36)	10.74 (58)
	Age<=20	12.40 (30)	10.09 (22)	7.09 (21)	12.15 (44)
	Age>=21	13.42 (62)	10.48 (260)	6.82 (15)	7.87 (14)
No/Low Neg	Weighted	52.98 (373)	49.14 (2290)	46.71 (241)	44.07 (238)
	Age<=20	47.11 (1140)	38.53 (84)	38.85 (115)	35.36 (128)
	Age>=21	56.06 (259)	58.47 (1450)	57.27 (126)	61.80 (110)
Moderate Neg	Weighted	25.57 (180)	28.76 (134)	29.26 (151)	30.19 (163)

Mothers Antisocial Behaviour					
Parenting	Sample	No/Low	Moderate	Mod/High	High
	Age<=20	28.93 (70)	34.40 (75)	31.76 (94)	34.53 (125)
	Age>=21	23.81 (110)	23.79 (59)	25.91 (57)	21.35 (38)
High Neg	Weighted	8.38 (59)	11.80 (55)	17.05 (88)	15.00 (81)
	Age<=20	11.57 (28)	16.97 (37)	22.30 (66)	17.96 (65)
	Age>=21	6.71 (31)	7.26 (18)	10.00 (22)	8.99 (16)
Weighted = Chi2 39.33, df9, p=0.000					
Age<=20 = Chi2 20.81, df9, p=0.013					
Age>=21 = Chi2 11.80, df9, p=0.224					
Warmth					
Missing Data	Weighted	13.07 (92)	10.09 (47)	6.98 (36)	10.56 (57)
	Age<=20	12.40 (30)	9.63 (21)	7.09 (21)	11.88 (43)
	Age>=21	13.42 (62)	10.48 (26)	6.82 (15)	7.87 (14)
No/Low Warmth	Weighted	15.34 (108)	17.17 (80)	20.74 (107)	20.93 (113)
	Age<=20	19.83 (48)	20.18 (44)	25.00 (74)	24.86 (90)
	Age>=21	12.99 (60)	14.52 (36)	15.00 (33)	12.92 (23)
Moderate Warmth	Weighted	31.68 (223)	32.19 (150)	34.50 (178)	33.89 (183)
	Age<=20	32.64 (79)	33.49 (73)	33.11 (98)	33.98 (123)
	Age>=21	31.17 (144)	31.05 (77)	36.36 (80)	33.71 (60)
High Warmth	Weighted	39.91 (281)	40.56 (189)	37.79 (195)	34.63 (187)
	Age<=20	35.12 (85)	36.70 (80)	34.80 (103)	29.28 (106)
	Age>=21	42.42 (196)	43.95 (109)	41.82 (92)	45.51 (81)
Weighted = Chi2 22.03, df9, p=0.009					
Age<=20 = Chi2 10.85, df9, p=0.286					
Age>=21 = Chi2 10.27, df9, p=0.329					

We then examined all our parenting behaviour and maternal attitude variables in a multinomial logistic regression model along with maternal antisocial behaviour. In Table 10.12 below we can see that, for the weighted 'all' mother sample, only frequency of smacking, and maternal negative comments are associated with the mother's antisocial behaviour, when controlling for all parenting variables. Mother's with high antisocial behaviour were 4 times more likely to smack on a weekly/daily basis as opposed to not smacking, and were twice as likely to be rated as making a high amount of negative comments about their child.

Examining the sample according to the mother's age at first birth shows that younger mother's who reported high antisocial behaviour in themselves were nearly 5 times as likely to smack weekly/daily as opposed to not smacking, and twice as likely to be rated as having high maternal negativity towards their child. Older mothers, on the other hand, with high antisocial behaviour were 5 times as likely to smack weekly or daily as opposed to not smacking and 2.6 times more likely to be rated as having made a high amount of negative comments about their child.

Table 10.12: Mother's Antisocial Behaviour, Parenting Behaviour and Maternal Attitude (RRR's)

Mothers Antisocial Behaviour				
Parenting	Sample	Moderate	Mod/High	High¹
Frequency of Smacking²				
Rarely	Weighted	0.9	2.8***	1.6
	Age<=20	1.1	2.9**	2.0*
	Age>=21	0.8	3.5**	1.8
Monthly	Weighted	1.9	8.0***	4.9***
	Age<=20	2.0	6.4***	7.1***
	Age>=21	1.8	11.2***	5.2**
Weekly/Daily	Weighted	1.8	4.2***	4.3***
	Age<=20	1.7	5.8**	4.7**
	Age>=21	2.0	4.6*	5.4**
Negative Comments³				
Upto 2 Neg Com	Weighted	1.4	1.2	1.2
	Age<=20	1.5	0.8	0.7
	Age>=21	1.4	1.5	1.5
>=3 Neg Com	Weighted	2.2*	1.7	2.0*
	Age<=20	1.4	0.9	1.0
	Age>=21	2.4	2.2	2.6*
Negativity⁴				
Moderate Neg	Weighted	0.6	1.3	1.1
	Age<=20	1.1	1.9*	2.0*
	Age>=21	0.5	1.1	0.8
High Neg	Weighted	0.4	1.2	1.4
	Age<=20	1.5	2.1	2.5*
	Age>=21	0.2	0.9	1.0
Warmth⁵				
No/Low Warmth	Weighted	0.9	1.3	1.6
	Age<=20	1.1	1.7	1.9
	Age>=21	0.8	1.1	1.3

Moderate Warmth	Weighted	0.8	1.0	1.1
	Age<=20	0.8	1.4	1.4
	Age>=21	0.8	0.8	1.0

Note: *=p=0.05, **=p=0.01, ***=p=0.001

Reference Groups:

¹No/low antisocial behaviour

²No Smacking

³No/Low Negative Comments

⁴No/Low Negativity

⁵High Warmth

Table 10.13 below shows the bivariate cross-tabulations for the biological father's antisocial behaviour and parenting behaviour and maternal attitude. We can see that there are significant associations for the weighted 'all' mother sample between the biological father's antisocial behaviour and all parenting behaviour and attitude variables. As the father's antisocial behaviour increased this was associated with an increase in the frequency that a child was smacked, the number of maternal negative comments and maternal negativity. Furthermore, as the father's antisocial behaviour increased so the mother's maternal warmth decreased. The above finding indicates that the father's antisocial behaviour, therefore, may have an effect on the mother's parenting attitude, however, it is more probable that this association can be explained by assortative mating, for example, the theory that antisocial behaviour may co-exist in partners.

Examining the sample according to the mother's age at first birth showed that, for the younger mother sample, the following parenting behaviour and maternal attitude variables were significant for the biological father's antisocial behaviour: frequency of smacking, maternal negative comments and maternal negativity. For the older mother sample frequency of smacking, maternal negativity, and maternal warmth were significant. Furthermore, examining the two sample groups in more detail showed that if a child had both a younger mother and a biological father with high antisocial behaviour

they were twice as likely as the children of older mothers to be smacked more frequently, and to have a mother who made more negative comments about them.

Table 10.13: Descriptive Statistics for the Biological Father's Antisocial Behaviour (Fathers always lived with family) and Parenting Behaviour and Maternal Attitude

Biological Fathers (always lived with family) Antisocial Behaviour					
Parenting	Sample	No/Low	Moderate	Mod/High	High
Frequency of Smacking					
No Smacking	Weighted	14.60 (114)	14.14 (75)	9.90 (47)	10.45 (43)
	Age<=20	20.38 (43)	16.39 (40)	10.67 (27)	11.87 (47)
	Age>=21	13.57 (62)	13.24 (36)	9.57 (22)	9.02 (12)
Rarely/Occ	Weighted	68.12 (530)	64.71 (343)	63.56 (300)	59.58 (247)
	Age<=20	65.40 (138)	67.62 (165)	64.03 (162)	59.85 (237)
	Age>=21	68.49 (313)	63.97 (174)	63.48 (146)	60.15 (80)
Monthly	Weighted	8.64 (67)	13.29 (70)	13.65 (64)	17.03 (71)
	Age<=20	7.11 (15)	9.84 (24)	12.25 (31)	15.40 (61)
	Age>=21	9.19 (42)	14.34 (39)	14.35 (33)	18.05 (24)
Weekly/Daily	Weighted	8.64 (67)	7.86 (42)	12.89 (61)	12.94 (54)
	Age<=20	7.11 (15)	6.15 (15)	13.05 (33)	12.88 (51)
	Age>=21	8.75 (40)	8.45 (23)	12.60 (29)	12.78 (17)
Weighted 'All' Mothers = Chi2 39.88, df9, p=0.000, Gamma =0.16					
Age<=20 (Younger Mothers) = Chi2 31.46, df 9, p=0.000, Gamma = 0.20					
Age>=21 (Older Mothers) = Chi2 17.30, df9, p=0.000, Gamma = 0.15					
Negative Comments					
Missing Data	Weighted	12.02 (81)	8.85 (46)	9.22 (45)	10.30 (55)
	Age<=20	10.85 (23)	9.35 (23)	11.24 (290)	9.80 (39)
	Age>=21	12.55 (58)	8.39 (230)	6.96 (16)	11.76 (16)
No Neg Comments	Weighted	17.51 (1180)	16.92 (88)	13.73 (67)	10.86 (58)
	Age<=20	16.51 (35)	12.30 (30)	9.30 (24)	8.54 (34)
	Age>=21	17.97 (83)	21.17 (58)	18.70 (430)	17.65 (24)
Upto 2 Neg Com	Weighted	60.09 (405)	59.62 (310)	55.94 (273)	55.43 (296)
	Age<=20	56.13 (119)	55.28 (136)	52.33 (135)	56.03 (223)
	Age>=21	61.90 (286)	63.50 (174)	60.00 (138)	53.68 (73)
>=3 Neg Com	Weighted	10.39 (70)	14.62 (76)	21.11 (103)	23.41 (125)
	Age<=20	16.51 (35)	23.17 (57)	27.13 (70)	25.63 (102)
	Age>=21	7.58 (35)	6.93 (19)	14.35 (33)	16.91 (23)
Weighted = Chi2 53.10, df9, p=0.000					
Age<=20 = Chi2 16.61, df9, p=0.055					
Age>=21 = Chi2 24.86, df9, p=0.003					
Negativity					
Missing Data	Weighted	12.46 (84)	8.65 (45)	9.84 (48)	10.49 (56)
	Age<=20	11.32 (240)	8.94 (22)	12.02 (31)	10.05 (40)
	Age>=21	12.99 (60)	8.39 (230)	7.39 (17)	11.76 (16)
No/Low Neg	Weighted	56.23 (379)	53.65 (279)	44.47 (217)	38.39 (205)

Biological Fathers (always lived with family) Antisocial Behaviour					
Parenting	Sample	No/Low	Moderate	Mod/High	High
	Age<=20	51.42 (109)	43.50 (107)	34.88 (90)	33.92 (135)
	Age>=21	58.44 (270)	62.77 (172)	55.22 (127)	51.47 (70)
Moderate Neg	Weighted	23.44 (158)	27.12 (141)	29.71 (145)	32.96 (176)
	Age<=20	25.94 (55)	30.89 (76)	32.95 (85)	36.18 (144)
	Age>=21	22.29 (103)	23.72 (65)	26.09 (60)	23.53 (32)
High Neg	Weighted	7.86 (53)	10.58 (55)	15.98 (78)	18.16 (97)
	Age<=20	11.32 (24)	16.67 (41)	20.16 (52)	19.85 (79)
	Age>=21	6.28 (29)	5.11 (14)	11.30 (26)	13.24 (18)
Weighted = Chi2 69.39, df9, p=0.000					
Age<=20 = Chi2 26.12, df9, p=0.002					
Age>=21 = Chi2 22.04, df9, p=0.009					
Warmth					
Missing Data	Weighted	12.31 (83)	8.65 (45)	9.43 (46)	10.67 (57)
	Age<=20	10.85 (23)	8.94 (22)	11.24 (29)	10.30 (41)
	Age>=21	12.99 (60)	8.39 (23)	7.39 (17)	11.76 (16)
No/Low Warmth	Weighted	13.50 (91)	15.96 (83)	20.49 (100)	24.34 (130)
	Age<=20	16.04 (34)	19.92 (49)	25.19 (65)	26.88 (107)
	Age>=21	12.34 (57)	12.41 (34)	15.22 (35)	16.91 (23)
Moderate Warmth	Weighted	30.86 (208)	33.85 (176)	33.20 (162)	34.46 (184)
	Age<=20	30.19 (64)	35.37 (87)	32.95 (85)	33.92 (135)
	Age>=21	31.17 (144)	32.48 (89)	33.48 (77)	36.03 (49)
High Warmth	Weighted	43.32 (292)	41.54 (216)	36.89 (180)	30.52 (163)
	Age<=20	42.92 (91)	35.77 (88)	30.62 (79)	28.89 (115)
	Age>=21	43.51 (201)	46.72 (128)	43.91 (101)	35.29 (48)
Weighted = Chi2 42.32, df9, p=0.000					
Age<=20 = Chi2 19.54, df9, p=0.021					
Age>=21 = Chi2 12.16, df9, p=0.204					

We then entered all of the parenting behaviour and maternal attitude variables into a multinomial logistic regression model along with the biological father's antisocial behaviour. We found that for the weighted 'all' mother sample, the parenting variables associated with the biological father's antisocial behaviour were frequency of smacking and maternal negativity. Father's who had high antisocial behaviour were twice as likely to smack monthly as opposed to not smacking, and were 6.4 times more likely to have a wife/partner who was rated as having high negativity towards their child (Table 10.14).

Examining the sample according to the mother's age at first birth showed that younger mother's, whose children's biological father was rated as having high antisocial behaviour, were ten times more likely to be rated as high maternal negativity and nearly three times as likely to smack on a monthly basis.

Table 10.14: Biological Father's Antisocial Behaviour, Parenting Behaviour and Maternal Attitude (RRR's)

Biological Fathers (always lived with family) Antisocial Behaviour				
Parenting	Sample	Moderate	Mod/High	High¹
Frequency of Smacking²				
Rarely	Weighted	0.9	1.2	1.1
	Age<=20	1.0	2.8	1.3
	Age>=21	1.0	1.7	1.3
Monthly	Weighted	1.3	1.8	2.2*
	Age<=20	1.3	2.8	2.7*
	Age>=21	1.4	1.7	2.9
Weekly/Daily	Weighted	0.9	1.6	1.4
	Age<=20	1.0	3.6*	2.5
	Age>=21	1.0	1.4	1.6
Negative Comments³				
Upto 2 Neg Com	Weighted	1.1	1.6*	2.0
	Age<=20	1.3	1.3	1.6
	Age>=21	1.1	1.8	2.1
>=3 Neg Com	Weighted	1.2	1.1	1.3
	Age<=20	2.2	0.9	0.9
	Age>=21	1.2	1.2	1.6
Negativity⁴				
Moderate Neg	Weighted	0.9	1.5*	1.4
	Age<=20	1.9	2.6**	3.5**
	Age>=21	0.8	1.3	0.9
High Neg	Weighted	1.2	2.7*	6.4***
	Age<=20	0.9	4.4*	10.5***
	Age>=21	1.3	2.1	4.5*
Warmth⁵				
No/Low Warmth	Weighted	1.0	0.9	0.4
	Age<=20	1.0	0.6	0.7
	Age>=21	0.8	0.9	0.0
Moderate Warmth	Weighted	0.9	1.0	1.0
	Age<=20	0.7	0.7	0.6
	Age>=21	0.9	1.0	0.9

Note: *p=0.05, **p=0.01, ***p=0.001

Reference Groups:

¹No/low antisocial behaviour

²No Smack

³No/Low Negative Comments

⁴No/Low Negativity

⁵High Warmth

10.3.5: Parenting Behaviour and Maternal Attitude as a Mediator of the Effect of Marital Conflict, Poverty, Family Structure, and Parental Antisocial Behaviour on Child Antisocial Behaviour?

In the section above we have shown that marital conflict, poverty, family structure and parental antisocial behaviour may be associated with differences in parenting behaviour and maternal attitude. In this section we examine how far parenting behaviour and maternal attitude mediates the effect of marital conflict, poverty, family structure and parental antisocial behaviour on child antisocial behaviour.

For parenting practices to mediate the effects of another variable on child antisocial behaviour, four conditions need to be met (Baron & Kenny 1986).

- ◆ First, the variable under examination, for example marital conflict, family structure, poverty and parental antisocial behaviour (X), need to be associated with child antisocial behaviour (Y). This step establishes that there is an effect that may be mediated. In Chapter 7 we have shown that marital conflict and family structure are associated with child antisocial behaviour as rated by the mother. In Chapter 8 we found evidence that both poverty and parental antisocial behaviour are associated with child antisocial behaviour as rated by the mother.
- ◆ Second, we need to establish whether marital conflict, poverty, family structure, and parental antisocial behaviour (X) are correlated with the possibly mediating variable, in this case, parenting behaviour and maternal attitude (Z). In this chapter we have shown that marital conflict, family

structure, poverty and parental antisocial behaviour are associated with differences in parenting behaviour and maternal attitude.

- ◆ Third, parenting behaviour and maternal attitude (*Z*) needs to be associated with child antisocial behaviour (*Y*). As was shown earlier in Chapter 6, parenting behaviour and maternal attitude (*Z*) is associated with child antisocial behaviour (*Y*).
- ◆ Fourth, to establish that *Z* completely mediates the X-Y relationship, the effect of X on Y controlling for *Z* should be zero (Baron & Kenny 1986). In other words, to test whether parenting behaviour and maternal attitude completely mediates the relationship between marital conflict (*X*), and child antisocial behaviour (*Y*), entering parenting behaviour and maternal attitude (*Z*) into the model should have the effect of reducing the previous significant association between marital conflict and child antisocial behaviour to non-significance. However, it may also be possible that parenting behaviour and maternal attitude may partially mediate the effects of marital conflict on child antisocial behaviour (Baron & Kenny 1986). Therefore, instead of marital conflict losing significance, what we may find is that once parenting behaviour and maternal attitude is entered into the model, the coefficient for marital conflict would reduce, but remain significant. At the same time, for a partial mediation to be a possibility, the coefficients for parenting behaviour and maternal attitude would remain significant. The reduction in the coefficient for marital conflict would then need to be tested for significance⁹².

⁹² Baron and Kenny (1986) show how to test for partial mediation. This includes calculating the difference between the unstandardised coefficients in Model 1 and Model 2 for the variable which is to be mediated.

If significant, we would have found evidence that parenting behaviour and maternal attitude may partially mediate the effect of marital conflict, for example, on child antisocial behaviour.

Figure 10.1: Mediation



The parenting behaviour and attitude variables entered into the models below are frequency of smacking, maternal warmth, maternal negative comments and maternal negativity as they were the only parenting variables to retain significance after backwards elimination. Maternal positive comments were non-significant.

10.3.5.1: Parenting Behaviour and Maternal Attitude as a Mediator of the Effects of Marital Conflict on Child Antisocial Behaviour

The marital conflict variable is the sum of all observations for disagreement about childrearing, parental quarrelling, and domestic violence combined into one variable. We entered our marital conflict variable into a ordered logistic regression model along with the dependent variable child antisocial behaviour. As can be seen from Table 10.15 Model 1 below marital conflict is highly associated with the mother’s report on child antisocial behaviour at age 5 years old. We then entered our parenting variables into the

The difference between these two co-efficients is then divided by an estimate of its standard error, and a t-test performed on the result. Partial mediation is a possibility if the difference is significant at the 5 per cent level or less.

model (Table 10.15 Model 2). We can see that both marital conflict, and parenting behaviour and maternal attitude retain significance, although there is slight attenuation of the co-efficients for marital conflict. Therefore, there is no evidence that parenting behaviour and maternal attitude completely mediates the effects of marital conflict on child antisocial behaviour. However, it may be possible that parenting behaviour and maternal attitude partially mediates the effect of marital conflict on child antisocial behaviour. We, therefore, tested for partial mediation (results not shown) and found evidence to suggest that parenting behaviour and maternal attitude may partially mediate the effects of marital conflict on child antisocial behaviour ($t=3.87, p=0.001$) The model testing for the mediatory effect of parenting behaviour and maternal attitude on the association between marital conflict and the teacher's report on child antisocial behaviour was not significant.

Table 10.15: Models to Test for the Mediatory Effect of Parenting Behaviour and Maternal Attitude upon the association between Marital Conflict and Child Antisocial Behaviour (Mother's Report)

Model 1	Coef	95% Confidence Interval	
Moderate Marital Conflict ¹	.8463329***	.609937	1.082672
High Marital Conflict	1.490009***	1.244301	1.735717

* = 0.05, ** = 0.01, *** = 0.001

Reference Group:

¹No/Low Marital Conflict

Model 2	Coef	95% Confidence Interval	
Moderate Marital Conflict ¹	.6377005***	.3618493	.9135517
High Marital Conflict	1.169195***	.8930065	1.445384
Freq of Smacking - Rarely	.2440621	-.0635642	.5516883
Freq of Smacking - Monthly ²	.6795576***	.2989954	1.06012
Freq of Smack - Weekly/daily	1.211554***	.7599905	1.663118
Mod Neg Comments ³	.2546932	-.0290392	.5384256
High Neg Comments	.6990061**	.2510996	1.146913
Mod Negativity ⁴	.4299829***	.1765643	.6868041
High Negativity	.3704292	-.0813343	.8221927
No Warmth ⁵	.4326668**	.1223043	.7430293
Moderate Warmth	.2352757	-.0102842	.4808356

* = 0.05, ** = 0.01, *** = 0.001

Reference Group:

¹No/Low Marital Conflict

²No Smacking

³No/Low Negative Comments

⁴No/Low Negativity

⁵High Warmth

10.3.5.2: Parenting Behaviour and Maternal Attitude as a Mediator of the Effects of Poverty on Child Antisocial Behaviour

In Table 10.16 Model 1 below we show the co-efficients for the model containing poverty and the dependent variable child antisocial behaviour as reported by the mother. In Table 10.16 Model 2 we show the model containing poverty, child antisocial behaviour (mother) and our four significant parenting attitude and behaviour variables. As can be seen from Model 2 below the inclusion of the parenting variables does not lead to poverty becoming non-significant. Although there is a slight attenuation of the co-efficients for poverty, high poverty remains highly significant when parenting is controlled for⁹³. Therefore, we conclude that parenting behaviour and maternal attitude does not completely mediate the effects of poverty, in our sample, on child antisocial behaviour as reported by the mother. However, as both poverty and parenting behaviour and maternal attitude remain significant it may be that parenting behaviour and maternal attitude partially mediates the effect of poverty on child antisocial behaviour. We tested for partial mediation and found some evidence to support the hypothesis that parenting behaviour and maternal attitude partially mediated the effects of poverty on child antisocial behaviour as reported by the mother ($t=2.29, p=0.05$).

⁹³ Only high poverty was significant for the teacher report on child antisocial behaviour, and there was slight attenuation of the coefficients once parenting introduced - only frequency of smacking and poverty retained significance (see Appendix 19)

Table 10.16: Models to Test for Mediatory Effect of Parenting Behaviour and Maternal Attitude upon the association between Poverty and Child Antisocial Behaviour (Mother's Report).

Model 1	Coef	95% Confidence Interval	
Moderate Poverty ¹	0.1459399	-.0849834	.3768632
High Poverty	1.017008***	.7738977	1.260119

* = 0.05, ** = 0.01, *** = 0.001

Reference Group

¹No/Low Poverty

Model 2	Coef	95% Confidence Interval	
Moderate Poverty ¹	.1170596	-.1461182	.3802373
Mod/High Poverty	.3363965*	.0371537	.6356393
High Poverty	.9480225***	.6726471	1.223398
No/Low Warmth ²	.953423***	.6771121	1.229734
Moderate Warmth	.4672541***	.2309437	.7035645
Rarely Smacking	.4246262**	.113357	.7358954
Monthly Smacking ³	1.032768***	.6589647	1.406572
Weekly/Daily Smacking	1.547471***	1/093749	2.001193
Moderate Negativity ⁴	.4777982***	.2236579	.7319386
High Negativity	.4020896	-.546126	.8587918
Moderate Negative Comments ⁵	.2981101*	.021212	.5750082
High Negative Comments	.7676616***	.3157163	1.219607

* = 0.05, ** = 0.01, *** = 0.001

Reference Groups:

¹No/Low Poverty

²High Warmth

³No Smacking

⁴No/Low Negativity

⁵No/Low Negative Comments

10.3.5.3: Parenting Behaviour and Maternal Attitude as a Mediator of the effects of Family Structure upon Child Antisocial Behaviour

Table 10.17 Model 1 below shows our initial model with family structure and poverty entered; child antisocial behaviour was the dependent variable. In Table 10.17 Model 2 we entered our parenting behaviour and maternal attitude variables into the model. For parenting practices to have a mediatory effect between family structure and child antisocial behaviour, entering parenting into the model should have the effect of reducing the previous significant association between family structure and child antisocial

behaviour to non-significance. As can be seen from the table below, this does not happen (Table 10.17 Model 1 & 2). Family structure retains significance in the model as does parenting behaviour and maternal attitude. There is very slight attenuation of the co-efficient for cohabiting families when parenting is entered into the model (Table 10.17 Model 2) as compared to a model with just family structure (Table 10.17 Model). However, there is no evidence of parenting completely mediating the effects of family structure on child antisocial behaviour as reported by the mother⁹⁴. We tested for partial mediation and this time found no evidence that parenting behaviour and maternal attitude partially mediated the effect of family structure on child antisocial behaviour at the 5 per cent significance level ($t=0.3952$).

Table 10.17: Models to Test for Mediatory Effect of Parenting Behaviour and Maternal Attitude upon the association between Family Structure and Child Antisocial Behaviour (Mother's Report).

Model 1	Coef	95% Confidence Interval	
Stepfamilies ¹	.54489*	.098254	.9915402
Separated/Divorced	.24392	-.07594	.5637963
Cohabiting	.61052***	.323719	.8973331
Always Solo	.81789***	.323719	1.265729
Moderate Poverty ²	.09655	-.13457	.327680
High Poverty	.79408***	.522479	1.06569

* = 0.05, ** = 0.01, *** = 0.001

Reference Groups

¹Always Married

²No/Low Poverty

Model 2	Coef	95% CI	
Stepfamilies ¹	.74238***	.28326	1.2014
Separated/Divorced	.27144	-.09485	.63775
Cohabiting	.45124**	.12273	.77975

⁹⁴ Only cohabiting and always solo families were significant for the teacher report on child antisocial behaviour, and there was slight attenuation of the coefficients for always solo families once parenting was introduced - cohabiting families lost significance. Frequency of smacking was the only parenting variable which retained significance (see Appendix 19).

Always Solo	.92058***	.46108	1.3800
Moderate Poverty ²	.07783	-.1866	.34232
High Poverty	.64164***	.33752	.94577
Rarely Smacked	.3934428*	.079225	.7076606
Monthly Smacking ³	.995662***	.6169303	1.374394
Weekly/Daily smacking	1.533713***	1.089524	1.977901
No/Low Warmth ⁴	.37659*	.05887	.69431
Moderate Warmth	.18017	-.07233	.43268
Mod Neg Comments ⁵	.307067*	.02847	.58565
High Negative Comments	.78956***	.34371	1.2354
Moderate Negativity ⁶	.46563***	.20974	.72153
High Negativity	.3836	-.0782	.84550

* = 0.05, ** = 0.01, *** = 0.001

Reference Groups

¹Always Married

²No/Low Poverty

³No Smacking

⁴High Warmth

⁵No/Low Negative Comments

⁶No Negativity

10.3.5.4: Parenting Behaviour and Maternal Attitude as a Mediator of the Effects of

Parental Antisocial Behaviour on Child Antisocial Behaviour

As can be seen from the tables below (Table 10.18 for mother's antisocial behaviour and Table 10.19 for biological father's antisocial behaviour), both the mother's antisocial behaviour and the biological father's antisocial behaviour retain significance once parenting behaviour and maternal attitude are entered into the models. There is very slight attenuation of the co-efficients for both the mother's and biological father's antisocial behaviour when parenting is entered into the model (Model 2) as compared to the model with just parental antisocial behaviour (Model 1). However, there is no evidence of parenting completely mediating the effects of parental antisocial behaviour on child antisocial behaviour as reported by the mother⁹⁵. We tested for partial

⁹⁵ Only high Maternal Antisocial Behaviour was significant for the teacher report on child antisocial behaviour, and this lost its significance once parenting introduced (see Appendix 19). Moderate/high and High biological father's antisocial behaviour was significant, and there was slight attenuation of the co-efficients once parenting was introduced but both retained significance as did frequency of smacking.

mediation and found that parenting behaviour and maternal attitude may partially mediate the association between both the mother's and fathers antisocial and child antisocial behaviour (T=9.73, 0=0.001 for father's antisocial behaviour and T=6.56, p=0.001 for mother's antisocial behaviour). However, examining the models for the teacher report on child antisocial behaviour showed that maternal antisocial behaviour lost its previous significance once parenting behaviour and attitude were entered into the model. This would suggest that parenting behaviour and attitude may mediate the effect of maternal antisocial behaviour on child antisocial behaviour outcomes as rated by the teacher (Appendix 19).

Table 10.18: Models to Test for Mediatory Effect of Parenting Behaviour and Maternal Attitude upon the association between the Mother's Antisocial Behaviour and Child Antisocial Behaviour (Mother's Report).

Model 1	Coef	95% Confidence Interval	
Moderate Antisocial behaviour ¹	1.071856***	.8014665	1.342246
Mod/High Antisocial Behaviour	1.584371***	1.3118835	1.849907
High Antisocial Behaviour	2.292363***	2.0022222	2.582505

* = 0.05, ** = 0.01, *** = 0.001

Reference Groups

¹No/Low Antisocial Behaviour

Model 2	Coef	95% Confidence Interval	
Moderate Antisocial Behaviour ¹	1.063565***	.7486156	1.378515
Mod/High Antisocial Behaviour	1.488481***	1.196535	1.780446
High Antisocial Behaviour	2.094784***	1.763161	2.426408
Freq of Smacking - Rarely	.2663998	-.045204	.5780036
Freq of Smacking - Monthly ²	.5231562**	.1397872	.9065251
Freq of Smacking - Weekly/Daily	1.179603***	.744839	1.614366
Mod Negative Comments ³	.5025494***	.2338412	.7712574
High Negative Comments	1.273732***	.9275369	1.619927
No/Low Maternal Warmth ⁴	.5436447**	.207428	.8798614

Model 2	Coef	95% Confidence Interval	
Moderate Warmth	.2986448*	.0497775	.5475121
Moderate Negativity ⁵	.4985503***	.240358	.7567426
High Negativity	.4757622*	.0236888	.9278356

* = 0.05, ** = 0.01, *** = 0.001

Reference Groups

¹No/Low Antisocial Behaviour

²Frequency of Smacking - No Smacking

³No/Low Negative Comments

⁴High Maternal Warmth

⁵No/Low Maternal Negativity

Table 10.19: Models to Test for Mediatory Effect of Parenting Behaviour and Maternal Attitude upon the association between the Biological Father's Antisocial Behaviour and Child Antisocial Behaviour (Mother's Report).

Model 1	Coef	95% Confidence Interval	
Moderate Antisocial Behaviour ¹	.7939709***	.5056829	1.082259
Mod/High Antisocial Behaviour	1.519587***	1.234647	1.804528
High Antisocial Behaviour	2.094379***	1.694121	2.494638

* = 0.05, ** = 0.01, *** = 0.001

Reference Groups

¹No/Low Antisocial Behaviour

Model 2	Coef	95% Confidence Interval	
Moderate Antisocial Behaviour ¹	.7408556***	.4172802	1.064431
Mod/High Antisocial Behaviour	1.304647***	.9847349	1.624559
High Antisocial Behaviour	1.691939***	1.247609	2.136269
Freq of Smacking - Rarely	.3695283*	.0700307	.6690258
Freq of smacking - Monthly ²	.8279793***	.4585333	1.197425
Freq of Smacking - Weekly/Daily	1.4482***	.9937118	1.902688
Moderate Negativity ³	.647756***	.3863914	.9091206
High Maternal Negativity	.9604967***	.5791771	1.341816
No/Low Maternal Warmth ⁴	.5832345***	.2561553	.9103137
Moderate Warmth	.2586293*	.0067386	.5105199
Moderate Negative Comments ⁵	.2458321	-.0407746	.5324388
High Negative Comments	.7791862***	.3319649	1.226407

* = 0.05, ** = 0.01, *** = 0.001

Reference Groups

¹No/Low Antisocial Behaviour

²Frequency of Smacking - No Smacking

³No/Low Maternal Negativity

⁴High Maternal Warmth

⁵No/Low Negative Comments

10.4: DISCUSSION

In this chapter we examined how far marital conflict, poverty, family structure and parental antisocial behaviour were associated with differences in parenting behaviour and maternal attitude. First, we examined the relationship between marital conflict and parenting behaviour and maternal attitude by utilising our three marital conflict

measures, parental disagreement about childrearing, parental quarrelling and domestic violence. We used our three indicators of marital conflict as opposed to our combined measure of marital conflict as we hypothesised that there may be differences in parenting behaviour and attitude according to the marital conflict variable examined. We hypothesised, for example, that domestic violence may be associated with increases in frequency of smacking whereas parental quarrelling and disagreement about childrearing may be more likely to be associated with maternal negativity. Using multinomial logistic regression models we found that the parenting dimensions associated with marital conflict differed as a function of the indicator of marital conflict under analysis. For example, we found that parental disagreement about childrearing was associated with increases in the frequency of smacking, maternal negative comments and maternal negativity. Parental quarrelling, however, was associated with increases in maternal negativity and the frequency that a child was smacked, whilst domestic violence was associated with increases in frequency of smacking. Therefore, we suggest that associations between particular parenting practices and marital conflict appear to be dependent on the type of marital conflict examined. We found evidence to suggest that when domestic violence is prevalent within a family there is an increased risk that children will be smacked more frequently. Moreover, we found evidence that high parental quarrelling is associated with increases in maternal negativity. Parental disagreement about childrearing, however, has a more general effect on parenting behaviour and attitude and is associated with increases in the frequency a child is smacked, and a increase in the number of maternal negative comments and maternal

negativity. What is also evident from our analysis is that marital conflict is not significantly associated with differences in levels of maternal warmth

Second, we examined how far levels of poverty were associated with differences in parenting behaviour and maternal attitude. We found that the only dimension of parenting behaviour and attitude effected by poverty was maternal warmth. Families in high poverty households were more likely to be rated as having less warmth towards their children.

Third, we examined how far parenting behaviour and maternal attitude differs according to family structure. Our bivariate results suggested that there were differences between our five family structure groups in terms of parenting behaviour and maternal attitude. It was evident from the cross-tabulations that the always married group were the most likely to be rated as having positive parenting (for example, high warmth/low negativity). We, therefore, decided to test our preliminary result that parenting behaviour and attitude may differ according to family structure and entered all our parenting variables into a multinomial logistic regression model which controlled for poverty. The only significant finding from this model was that mother's who were always 'solo' were four times more likely than mother's who were always married to be rated as having high negativity. Therefore, it would appear that there are minimal differences in parenting behaviour and attitude according to family structure.

Fourth, we examined how far parental antisocial behaviour was associated with differences in parenting behaviour and maternal attitude. We found evidence that maternal antisocial behaviour was associated with increases in frequency of smacking, maternal negativity and maternal negative comments. Furthermore, we also found an association between the biological father's antisocial behaviour and an increase in frequency of smacking and maternal negativity. We hypothesised, therefore, that the biological father's antisocial behaviour may have an effect on the mother's parenting attitude, however, it may also be the case that antisocial individuals tend to have children with one another and therefore, the mother's parenting attitude may be a result of her own antisocial behaviour.

Lastly, we examined how far parenting behaviour and maternal attitude mediates the risk of marital conflict, family structure, poverty and parental antisocial behaviour on child antisocial behaviour. We undertook this analysis as the Family Stress Model (Conger & Elder 1994; Elder & Caspi 1988) suggests that poverty, for example, has an effect on child outcomes as a result of the effect of poverty on parenting practices. However, we found no evidence to support the hypothesis that parenting behaviour and maternal attitude completely mediated the effect of these four factors on child antisocial behaviour as reported by the mother. However, we found some evidence that parenting behaviour and maternal attitude may partially mediate the effects of marital conflict, poverty and parental antisocial behaviour on child antisocial behaviour as reported by the mother. However, when we examined the teacher reports on child antisocial behaviour we found that parenting behaviour and maternal attitude may mediate the effects of maternal

antisocial behaviour on child antisocial behaviour. A mother's antisocial behaviour, therefore, may have an effect on a child's antisocial behaviour as a result of its effect on parenting behaviour and maternal attitude⁹⁶.

10.5: CONCLUSIONS

In this chapter we were interested in examining how the wider social and economic context effects parenting behaviour and maternal attitude. We suggest that an understanding of the effects of the parenting context on parenting practices are important for two reasons. First, an understanding of the role of the parenting context on parenting practices is important as parenting programmes and other interventions may also need to focus on reducing the effects of other factors such as marital conflict, for example, to see an improvement in parenting practices. Second, we suggest that an understanding of the mechanisms through which risk factors effect child antisocial behaviour is important in understanding the origins of antisocial behaviour. Our results have indicated that marital conflict and parental antisocial behaviour are more strongly associated with differences in parenting behaviour and maternal attitude than family structure and poverty. It may be the case, therefore, that parents with high antisocial behaviour or high marital conflict are more likely to have difficulties with parenting their children (Patterson et al 1992). However, it may also be the case that particular individuals, for example, those with high antisocial behaviour, may be more likely to use aggressive methods towards their partners as well as their children (Patterson et al 1992). It may be possible, therefore,

⁹⁶ Mothers with high antisocial behaviour were found to be high in negativity, low in warmth, and to smack more frequently

that those individual who engage in high marital conflict and who have parenting problems may also be the same individuals who have higher antisocial behaviour⁹⁷. This antisocial behaviour makes it more likely that they 'generate and perpetuate coercive cycles of interchange' (Rutter, Giller & Hagell 1998:299) which not only leads to poorer parenting but also to an increased probability of marital conflict⁹⁸. As a result, programmes which aim to improve parenting practices, may also need to address additional factors such as managing marital conflict and decreasing parental antisocial behaviour, especially the mother's antisocial behaviour.

Lastly, our findings give some support to the Family Stress Model hypothesis that factors such as poverty may have an effect on child outcomes as a result of their effect on parenting practices. However, it is evident from our findings indicate that parenting practices may only partially mediate the effect of these factors on child antisocial behaviour as rated by the mother. As a result, marital conflict, poverty and parental antisocial behaviour may also have a direct effect on child antisocial behaviour or their effects may also be mediated by another variable. Furthermore, it is important to note that our analysis using the teacher report on child antisocial behaviour did not confirm the above results, and the teacher reports indicated that parenting behaviour and maternal

⁹⁷ Our analysis has found that mothers with high antisocial behaviour are 10 times more likely to report high marital conflict as opposed to mothers with low antisocial behaviour (OR 10.2).

⁹⁸ We also examined how far parental antisocial behaviour (results not shown) mediated the effects of marital conflict on child antisocial behaviour and we found evidence to suggest that the biological father's antisocial behaviour may mediate the effect of marital conflict on child antisocial behaviour as reported by the mother. High marital conflict was significant for child antisocial behaviour as reported by the mother (0.84***) but became insignificant when the biological father's antisocial behaviour was entered into the equation. The biological father's antisocial behaviour retained significance. We found no evidence to suggest that the mother's antisocial behaviour mediated the effects of marital conflict on child antisocial behaviour as reported by the mother. The teacher report on child antisocial behaviour was not significant for marital conflict.

attitude may completely mediate only the effects of maternal antisocial behaviour on child antisocial behaviour.

CHAPTER 11

CONCLUSIONS

11.1: INTRODUCTION

Tackling antisocial behaviour is a major priority for the present Labour Government (Home Office 2004) and the recent publication of the Government's Respect Action Plan (Home Office 2006) puts emphasis on identifying the causes of antisocial behaviour. Childhood antisocial behaviour, we suggested, is an important area of research into the origins of antisocial behaviour. Previous research, for example, has shown that child antisocial behaviour is one of the most robust predictors of adult antisocial behaviour, crime and social exclusion (Loeber and Dishion 1983; Scott 1998; Pugh 1998; Rutter et al 1998) and it has been stated that 'adult antisocial behaviour virtually requires childhood antisocial behaviour' (Robins 1978:611). The research, therefore, undertaken in this thesis aimed to build knowledge about childhood antisocial behaviour. Our research took the form of a quantitative analysis of data collected by the MRC funded 'Twins Early Development Study - Environment' also known as the E-Risk study. The E-Risk study is a national sample of 1116 families with twin children who were born in 1994-95. The families were home-visited in 1999-2000 when the children were 5 years old. By examining child antisocial behaviour we aimed to identify some of the risk factors which are associated with child antisocial behaviour at age 5 years old.

The term antisocial behaviour, as discussed in Chapter 1, can be difficult to define and the Government's definition of antisocial behaviour is problematic in that it doesn't take into account the subjective nature of antisocial behaviour (Rutter, Giller & Hagell 1998; Millie et al 2005)⁹⁹. For example, it has been argued that what may be defined as antisocial behaviour in one context or time period may be perfectly acceptable in another context or time (Nixon et al 2003). Due to the subjective nature of antisocial behaviour, our research used Achenbach's (1997; 1991) behaviour checklists, a psychological tool expressly developed to capture problem behaviour.

We focused primarily on parenting as a risk factor for antisocial behaviour as previous research and Government policy has identified parenting as a key risk factor (Home Office 2006; Patterson, DeGarmo, & Knutson 2000; Sampson & Laub 1993, Webster Stratton 2001). We also suggested that although parenting may be a risk factor for child antisocial behaviour, it may also be the case that parenting practices act as a protective factor buffering the child from the risk of other factors. We aimed in this research, therefore, to untangle parenting as a risk factor and examined the relative contribution of its component parts to child antisocial behaviour at age 5 years old. Furthermore, we examined how far parenting behaviour, as measured by our variable frequency of smacking, acted as a protective factor buffering the child from the risk of other factors such as marital conflict. We suggested that this type of analysis may have important implications for parenting interventions.

⁹⁹ The Crime and Disorder Act (1998) defines antisocial behaviour as 'acting in a manner that causes or was likely to cause harassment, alarm or distress to one or more persons not of the same household'.

Parenting, however, is only one of the dimensions which may affect child development, and it is evident that children do not develop in a vacuum but are also influenced by the wider context in which they live (Bronfenbrenner 1979). As a result of this thinking, we extended our analysis beyond the realm of parenting and examined the effect of the wider context on the development of antisocial behaviour. We, therefore, examined the effects of poverty, marital conflict, family structure and parental antisocial behaviour on child antisocial behaviour. Furthermore, we utilised the sampling frame of the E-Risk Study, which over sampled younger mothers, and examined the effect of teenage parenthood on child antisocial behaviour. Our results, therefore, were reported in relation to three sample groups: a weighted 'all' mother sample, a younger mother sample, and an older mother sample (see Chapter 4).

Our research was also guided by previous research which has indicated that parenting practices may be multiply determined, and may be affected by the personal psychological resources of parents, the characteristics of the child and the social-economic context, for example, poverty (Conger et al 2000; Bronfenbrenner 1979; Belsky 1984). It is important, therefore, in any study which focuses on parenting to go beyond the parent-child dyad to examine how far parenting behaviour is influenced by social contextual factors (Conger et al 2000; Belsky 1984). We, therefore, examined how far factors such as poverty, marital conflict, family structure and parental antisocial behaviour were associated with differences in parenting behaviour and maternal attitude. Moreover, we suggested that it was important to understand the mechanisms through which risk factors affect child antisocial behaviour as some risk factors may have a distal effect on

behaviour whilst ones may have a more proximal effect. The Family Stress Model (Conger et al 2000; Elder & Caspi 1988; McLoyd 1989), for example, suggests that poverty may have an effect on child antisocial behaviour because it affects parenting practices. As a result it may be that poverty has a more distal effect on child outcomes through a more proximal risk factor such as parenting. We, therefore, examined how far parenting mediated the effect of poverty, marital conflict, family structure and parental antisocial behaviour on child antisocial behaviour.

11.2: RESEARCH QUESTIONS

The previous literature led us to formulate four research questions. Question 1 focused on dissecting parenting practices as a risk factor. We examined parenting practices as both a risk factor and a protective factor (Chapter 6 and 9). Question 2 went beyond the parent/child dyad and focused on the wider context within which the child develops. We examined, therefore, how far family structure, marital conflict, poverty and parental antisocial behaviour were directly associated with child antisocial behaviour (Chapter 7 and 8). In Question 3 we modelled some of the key risk factors for child antisocial behaviour at age 5 years old as rated by the mother and teacher (Chapter 9). Lastly, in Question 4 we examined how far our socio-emotional contextual factors were associated with differences in parenting behaviour and attitude. We continued by examining to what extent parenting behaviour and maternal attitude mediated the effects of family structure, marital conflict, poverty and parental antisocial behaviour on child antisocial behaviour (Chapter 10). Our four research questions were as follows:

Question One

- 1a) How far is parenting behaviour and maternal attitude associated with childhood antisocial behavioural outcomes and which specific dimension of parenting carries the most risk?
- 1b) Are negative parenting interactions more important in the development of child antisocial behaviour than a lack of positive interactions?
- 1c) To what extent does frequency of smacking moderate the effects of maternal warmth and maternal negativity on child antisocial behaviour?

Question Two

- 2a) Which family structure grouping has the strongest association with child antisocial behaviour?
- 2b) Comparatively, which of our three marital conflict variables has the strongest association with child behaviour problems?
- 2c) How far does marital conflict mediate the effects of family structure on child antisocial behaviour?
- 2d) How far is poverty associated with child antisocial behaviour?
- 2e) How far is parental antisocial behaviour associated with child antisocial behaviour?
- 2f) Which of our two indicators of social exclusion contributes the most to child antisocial behaviour at age 5 years old.
- 2g) To what extent do differences in levels of maternal antisocial behaviour explain differences between younger mothers and older mothers in relation to child behavioural outcomes and multiple risk factors?

Question Three

- 3a) What are the important risk factors associated with child antisocial behaviour at age 5 years old?
- 3b) How far does frequency of smacking moderate the effects of factors such as marital conflict on child antisocial behaviour outcomes.

Question Four

- 4a) How far does parenting behaviour and maternal attitude differ according to family structure, social exclusion and marital conflict?
- 4b) To what extent does parenting behaviour mediate the effect of family structure, social exclusion and marital conflict on child antisocial behaviour outcomes?

As stated earlier, we utilised the sampling frame of the E-Risk study and analysed all of our research questions according to our three sample groups: a weighted 'all mother' group, a younger mother group and an older mother group. Child antisocial behaviour was measured by both the mother and teacher report on antisocial behaviour.

11.3: SUMMARY OF FINDINGS

In this section we summarise our findings before continuing on to Sections 11.4 – 11.10 where we discuss conclusions, policy implications, the implications for interventions, the limitations of our analysis and recommendations for future research on child antisocial behaviour.

11.3.1: Parenting Behaviour and Maternal Attitude

Parenting has been identified as a risk factor for child antisocial behaviour (Home Office 2006; Patterson, DeGarmo, & Knutson 2000; Sampson & Laub 1993, Webster Stratton 2001). However, we suggested that many of the previous studies on the effects of parenting practices on child antisocial behaviour have tended to combine differing elements of parenting together so that it was impossible to examine which dimension of parenting carried the most risk (Rutter, Giller & Hagell 1998). This is an important point as Patterson's Coercion Theory suggests that negative parenting interactions are more likely to be associated with child behavioural problems than any other form of parenting interaction. The combining of parenting dimensions, therefore, we suggest, may obscure which element of parenting has the most effect. We, therefore, aimed in Chapter 6 to dissect parenting practices as a risk factor for child antisocial behaviour by examining the relative importance of two aspects of parenting practices: parenting behaviour and maternal attitude. We examined these two dimensions of parenting as Baumrind (1971) has suggested that parenting consists of two elements: warmth/responsiveness and control/discipline. Our variable maternal attitude, we suggested, corresponded to Baumrind's warmth/responsiveness category and parenting behaviour corresponded to control/discipline. Maternal attitude was measured by four variables: maternal warmth, maternal negativity, maternal positive comments and maternal negative comments whilst parenting behaviour is measured by the variable parental frequency of smacking¹⁰⁰ (see

¹⁰⁰ Relates to both mother's and residential partner's smacking of the child.

Chapter 5). By examining our five variables we aimed to examine whether negative interactions were more important for the onset of child antisocial behaviour.

Our findings in Chapter 6 indicated that the important risk factors which are associated with child behaviour problems at age 5 as reported by the mother, in order of importance, are frequency of smacking, maternal negativity, maternal negative comments, and maternal warmth. The number of maternal positive comments were not found to be significant. The results using the teacher reports on child antisocial behaviour, however, differed from the results using the mother report on antisocial behaviour in that only frequency of smacking and maternal negativity were significant. However, it is important point that both reports (mother and teacher) identified frequency of smacking and maternal negativity as having the strongest association with child antisocial behaviour at age 5 years old. It would seem, therefore, that it is negative interactions which matter more for child antisocial behaviour at age 5 years old and a lack of positive interactions, such as high warmth, and high positive comments seem to be associated to a lesser degree with antisocial behaviour. Furthermore, it would appear in relation to maternal attitude that it is the tone of the parent/child relationship (i.e. global negativity) as opposed to the content of what is said which is important in relation to associations with child antisocial behaviour.

What is evident from the results in Chapter 6 is that there is a strong association between how often a child was smacked and child antisocial behaviour as reported by both the mother and teacher. We found that those children who were smacked the most

frequently had the highest antisocial behaviour rating. However, as suggested in Chapter 6, we cannot identify, due to the cross-sectional nature of our data, whether smacking was the cause of the antisocial behaviour or whether the child's antisocial behaviour caused the smacking. However, what is evident from our research is that children with antisocial behaviour are being smacked more. We suggested that this is an important finding as previous research has shown that corporal punishment is associated with increases in children's aggressive behaviours (Gershoff 2002; Strauss 1999; 1994; Becker 1964, Patterson 1982, Radke-Yarrow, Campbell & Burton 1968), and as a result, it may be possible that, frequent smacking may exacerbate a child's behavioural problems.

Examining the sample groups in more detail showed that for the weighted 'all' mother group and the older mother group the absence of a parenting risk factor substantially decreased the risk of child antisocial behaviour. For example, when smacking occurred rarely children were less likely to be rated as having high antisocial behaviour and more likely to be rated as having no antisocial behaviour. This, however, was not the case for younger mothers who were substantially more likely to have a child with antisocial behaviour when a parenting risk was present, but also more likely to have a child in any of the four antisocial behaviour categories when the parenting risk was absent. The absence of a parenting risk, therefore, did not have the same effect for the children of younger mothers as it did for the children of older mothers. We hypothesised, therefore, that younger mothers may be more likely to face multiple parenting risks which increased their child's risk of antisocial behaviour even when a particular parenting risk

factor, such as maternal negativity, was absent. We, therefore, examined this hypothesis in more detail. Our findings suggest that in cases where younger mothers smacked less frequently and were rated as having high warmth or low negativity, for example no parenting risk present, they became like older mothers, in that they were more likely to have children who were rated as having lower antisocial behaviour. This, however, was not the case when we examined the absence of a single parenting risk factor, as younger mothers were still more likely to have a child with higher antisocial behaviour. This finding gives some support to our hypothesis that younger mothers may be more likely to face multiple parenting risk factors, and therefore, we suggest that it may be important when planning interventions for younger mothers, for example, to focus on reducing multiple parenting risks as opposed to a focus on the reduction of a single parenting risk.

The previous literature on parenting practices has also shown that parenting behaviour and maternal attitude may not only act as risk factor for child antisocial behaviour, but may also act in a protective manner moderating the effects of other risk factors on child antisocial behaviour. We, therefore, examined how far frequency of smacking acted as a moderator of the effects of high maternal negativity and low maternal warmth on child antisocial behavioural outcomes. We examined the protective power of frequency of smacking as opposed to any of the other parenting variables as our exploratory analysis indicated that frequency of smacking had the greatest association with child antisocial behaviour, and therefore, we anticipated that a reduction in the frequency that a child was smacked may have a greater impact in moderating the effect of other risk factors such as maternal negativity. Our findings indicate that a reduction in the frequency that a child

was smacked may reduce the effects of low maternal warmth and high maternal negativity on child antisocial behaviour (Chapter 6).

11.3.2: Family Structure, Marital Conflict and Child Antisocial Behaviour

In Chapter 7 we extended our analysis beyond the realm of parenting (Bronfenbrenner 1979) and examined the relationship between family structure, marital conflict and child antisocial behaviour in more detail. Family structure was measured by the Life History Calendar (LHC), and we created five family structure groups: always married, cohabiting, always 'solo', separated/divorced, and stepfamilies. We created five family structure groups instead of examining family structure as a binary phenomenon, for example one vs. two parent families, as we were interested in examining differences in levels of child antisocial behaviour between cohabiting and always married families as well as differences between the always 'solo', the separated/divorced and stepfamilies.

Our results in Chapter 7 showed, in relation to family structure, that the 'always solo' mothers, and stepfamilies were the most likely of our family structure groups to have children with high antisocial behaviour as rated by both the mother and the teacher. Cohabiting families and those who were separated or divorced were as likely to have a child in any of the four antisocial behaviour groups. Only the always married were more likely to have a child with no antisocial behaviour. What is evident from our research, therefore, is that children in cohabiting families in our sample were more like children in

divorced or separated families as opposed to children in always married families in relation to their levels of antisocial behaviour.

Examining the sample according to the mother's age at first birth, however, showed differences in levels of child antisocial behaviour according to family structure¹⁰¹. Younger mothers were more likely to have a child with high antisocial behaviour if they were separated/divorced, part of a stepfamily, cohabiting or 'always solo'. Moreover, we found that being a younger 'always solo' mother was especially a risk factor for increased child antisocial behaviour. However, our analysis also indicated that even when a younger mother was always married this did not result in a child having lower antisocial behaviour as it did for older mothers. Instead what we found was that younger mothers who were always married were as likely to have a child in any of the four antisocial behaviour categories. Therefore, although being always married may act to some extent as a protective factor for younger mothers in terms of child antisocial behaviour, the risk of antisocial behaviour in their children was higher for younger mothers who are always married than older mothers who are always married. An examination of the older mother group, on the other hand, showed that although older mothers who were always married were more likely to have a child with no antisocial behaviour, for all other family structure groups they were more likely to have a child with some level of antisocial behaviour. Therefore, it would appear from our analysis that being 'always married' for both younger and older mothers is associated with lower antisocial behaviour problems in their children, but that this association is stronger for older mothers. All other family

¹⁰¹ These results refer to the mother report on child antisocial behaviour. The teacher report on child antisocial behaviour was not significant for younger or older mothers and family structure.

structure types, however, are associated with increases in child antisocial behaviour. Again this is especially the case for younger mothers.

We measured marital conflict by using three indicators: disagreement about childrearing, parental quarrelling and domestic violence. We examined each of these three indicators of marital conflict independently as opposed to combining them into a single indicator which measured marital conflict *per se* as previous research had identified disagreement about childrearing as being one of the best predictors of child antisocial behaviour (Davies & Cummings 1994). We, therefore, wanted to assess the relative contribution of each of the marital conflict variables to child antisocial behaviour. Our findings show that there is a moderate association between our three marital conflict variables and child antisocial behaviour as rated by the mother¹⁰². As disagreement about childrearing, parental quarrelling and domestic violence increased so did child antisocial behaviour. Furthermore, when levels of disagreement about childrearing, parental quarrelling and domestic violence were low so was child antisocial behaviour.

We found differences, however, between older and younger mothers in relation to marital conflict and child antisocial behaviour. The association between the three marital conflict variables and child antisocial behaviour as rated by the mother was stronger for younger mothers than for older mothers¹⁰³. Younger mothers who reported high disagreement about childrearing, high parental quarrelling and high domestic violence

¹⁰² The teacher report of child antisocial behaviour and our three marital conflict variables were not significant.

¹⁰³ Domestic violence was significant for younger mothers and child antisocial behaviour as rated by the teacher. All other variables were not-significant for both younger and older mothers.

were more likely to have a child with high antisocial behaviour. Moreover, even when younger mothers reported an absence of disagreement about childrearing, parental quarrelling and domestic violence they were more likely to have a child with higher antisocial behaviour than older mothers. This, we suggest, may be a result of younger mothers facing multiple risk factors which means that even when a particular risk factor is absent, other risk factors are present which increases the probability of child antisocial behaviour.

Our analysis continued by examining how far family structure and marital conflict jointed predicted child behaviour problems. Previous research has indicted that it is 'family process' which is more important in terms of child adjustment as opposed to family structure (Amato 1994; Demo & Acock 1996), and this suggests that marital conflict may be an important factor in the association between family structure and child antisocial behaviour. Our findings showed that once marital conflict was controlled for, most family structure groups lost their previous significance. This suggests that marital conflict may have a greater association with child antisocial behaviour as rated by the mother than family structure. However, when we examined the teacher report on child antisocial behaviour we found that all variables were insignificant except domestic violence for younger mothers. Our results, therefore, provide some evidence that family structure may be associated with child antisocial behaviour as a result of marital conflict which had occurred within the relationship (Amato 1994; Demo & Acock 1996). Therefore, it may be that marital disagreements, for example, may be a key factor in the association between particular family structures and poorer child outcomes.

11.3.3: Social Exclusion and Child Antisocial Behaviour

In Chapter 8 we continued to extend our analysis beyond the realm of parenting (Bronfenbrenner 1979) and examined the affect on child antisocial behaviour of two potential indicators of social exclusion, poverty and, more unusually, parental antisocial behaviour. Previous research on associations between poverty and child antisocial behaviour have found some conflicting results. Some research has found strong associations between poverty and child antisocial behaviour whilst other research has found less of an association (Secombe 2000; Conger, Conger & Elder 1997; Conger et al 1993; 1992; Farrington 1991; Takeuchi, Williams & Adair 1991). This, it is argued, may be a result of the measure of poverty used and it has been stated that income, for example, as a measure of poverty, may affect cognitive outcomes more than behavioural outcomes (Blau 1999; Duncan et al 1997). For this reason we used a combined indicator of poverty which measured multiple deprivation and consisted of measures of income, housing tenure, ownership of a car, unemployment and receipt of benefits. We examined parental antisocial behaviour as a dimension of social exclusion as previous research on social exclusion has indicated that individual values, behaviour and emotional states may lead to social exclusion (Levitas 1998). Furthermore, research on parental antisocial behaviour has found an association between the parent's antisocial behaviour and that of the child; however, much of this research has concentrated entirely on the father's antisocial behaviour (Farrington 2000; Farrington, Barnes and Lambert 1996). In Chapter 8 we used questionnaires which assessed both the mother's and biological father's lifetime antisocial behaviour to examine how parental antisocial behaviour

effects child antisocial behaviour (Achenbach 1991). Furthermore, we tested Levitas's model of social exclusion and examined which one of our two indicators of social exclusion best explained child antisocial behaviour. We suggested that our poverty indicator corresponded to approach one of Levitas's model of social exclusion which states that social exclusion may be a result of poverty whilst our parental antisocial behaviour indicator corresponded to approach three which sees the causes of social exclusion as lying in cultural and moral values and behaviour.

Examining our findings on poverty and child antisocial behaviour suggests that poverty, as measured by our combined index, is associated with increases in child antisocial behaviour as rated by both the mother and teacher. As poverty increased so did child antisocial behaviour. Conversely, children who were living in low poverty households were more likely to be rated as having lower antisocial behaviour. Examining the sample according to the mother's age at first birth indicated that younger mothers who lived in high poverty households were substantially more likely than older mothers to report high antisocial behaviour in their children¹⁰⁴. Older mothers, on the other hand, who lived in low poverty households were substantially more likely than younger mothers to report lower antisocial behaviour in their children. Therefore, when the household poverty level is high, younger mothers are more likely to report higher antisocial behaviour in their children, and when the household poverty is low there is still an increased risk for younger mothers of having a child with higher antisocial behaviour. Therefore, it appears that although younger mothers with a low poverty index have an increased risk

¹⁰⁴ Poverty and child antisocial behaviour as rated by the teacher was not significant for younger and older mothers.

of having an antisocial child as compared to older mothers, this risk is increased for both younger and older mothers when poverty increases.

Examining the results for parental antisocial behaviour and child antisocial behaviour showed that both the biological father's and mother's antisocial behaviour are independently associated with increases in child antisocial behaviour as rated by both the mother and teacher. Furthermore, the effect on child antisocial behaviour of having an antisocial mother or antisocial biological father is heightened if the mother is a younger mother. Younger mothers who had high antisocial behaviour or whose partner had high antisocial behaviour were much more likely than older mothers to have a child with high antisocial behaviour. However, we also found evidence that having a mother or father with lower antisocial behaviour was associated with lower antisocial behaviour in children, and it may be possible that lowered parental antisocial behaviour may act as a protective factor for child antisocial behaviour. This is relevant to both sample groups, and is an important point, as it is one of only a few cases where the absence of a risk factor has a positive outcome for the children of younger mothers.

We then assessed the relative contribution of maternal and paternal antisocial behaviour to child antisocial behaviour and found that both the mother and father's antisocial behaviour levels were significantly associated with child antisocial behaviour as rated by the mother. Furthermore, the mother's antisocial behaviour appeared to have a stronger association with child antisocial behaviour as rated by the mother than the biological father's antisocial behaviour. This was the case for all three sample groups. However,

when we examined the teacher report on child antisocial behaviour we found that only the biological father's antisocial behaviour was significantly associated with child antisocial behaviour for both the weighted sample and the younger mother sample.

Lastly, we examined the relative contribution of our two indicators of social exclusion to child antisocial behaviour at age 5 years old. We found that, for all sample groups, parental antisocial behavioural had a stronger association with child antisocial behaviour¹⁰⁵ than poverty. This was especially the case for younger mothers. We suggested that this finding may be a result of younger mothers being more likely to have high antisocial behaviour themselves and have children with men with higher antisocial behaviour. This increased likelihood of antisocial behaviour in younger mothers and their partners reduces the significance of poverty on child antisocial behaviour.

Our results suggested, therefore, that both of Levitas's approaches to social exclusion may be used to examine relationships between social exclusion and child antisocial behaviour as reported by the mother. However, our findings also suggested that parental antisocial behaviour has a stronger association with child antisocial behaviour than poverty. Therefore, in relation to child antisocial behaviour and social exclusion it may be important, to utilise indicators of social exclusion which not only measure material deprivation and poverty, but also measure parental values and behaviour. It may be, therefore, that parental values and behaviour are an important factor for an understanding of the relationship between child antisocial behaviour and social exclusion.

11.3.4: Risk Factors for Child Antisocial Behaviour at Age 5 Years Old

In the previous chapters we concentrated on how far parenting behaviour, maternal attitude and the parenting context, for example family structure, marital conflict, and social exclusion were independently associated with child antisocial behaviour or associated with child antisocial behaviour in the presence of one other risk factor. In chapter 9, however, we entered all of our measures into a multivariate model to examine which of our risk factors were associated with child antisocial behaviour at age 5 years old. Our variables were frequency of smacking, number of maternal positive comments, number of maternal negative comments, maternal warmth, maternal negativity, family structure, and poverty, disagreement about childrearing, parental quarrelling, domestic violence, and parental antisocial behaviour.

Our findings indicated that for the weighted 'all' mother sample the variables which were associated with child antisocial behaviour at age 5 years old, as rated by the mother were, in order of importance, disagreement about childrearing, frequency of smacking, maternal antisocial behaviour, the biological father's antisocial behaviour, parental quarrelling, maternal negative comments, maternal negativity, and maternal warmth (Table 11.1). However, when we examined the teacher report on child antisocial behaviour we found some differences. The variables associated with child antisocial behaviour as rated by the teacher for the weighted sample were frequency of smacking, the biological father's antisocial behaviour, and maternal negativity (Table 11.2). It is evident, therefore, that maternal antisocial behaviour and disagreement about

¹⁰⁵ As rated by both the mother and teacher.

childrearing were highly significant for the mother report on child antisocial behaviour but were not significant for the teacher report. This difference in significance between the mother and teacher reports for these risks factors may be a result of several factors. First, mothers with high antisocial behaviour may be more likely to rate their children as having high antisocial behaviour and as a result there will be an association between maternal antisocial behaviour and child antisocial behaviour as reported by the mother. Second, mothers with high antisocial behaviour may be more likely to not only rate their children as having high antisocial behaviour but also blame all disagreements in the households on the child's behaviour. As a result there will not only be an association between high maternal behaviour and child antisocial behaviour, but an association between child antisocial behaviour and disagreements about child-rearing. However, although there are differences between the risk factors for antisocial behaviour depending on who rated the child's antisocial behaviour, it is important to take into account that both the teacher and mother reports agreed that frequency of smacking, maternal negativity and the biological father's antisocial behaviour are associated with child antisocial behaviour problems for the weighted sample.

Table 11.1: Significant Variables for Child Antisocial Behaviour (Mother) according to Sample Group

Weighted 'All' Mother	Age<=20 (Younger Mothers)	Age>=21 (Older Mothers)
Disagree Childrearing	Disagree Childrearing	Disagree Childrearing
Frequency of Smacking	Frequency of Smacking	Frequency of Smacking
Mothers ASB	Mothers ASB	Mothers ASB
Fathers ASB	Fathers ASB	Fathers ASB
Parental Quarrelling	Not Significant	Parental Quarrelling
Maternal Negative Comments	Maternal Negative Comments	Maternal Negative Comments
Maternal Negativity	Maternal Negativity	Maternal Negativity
Maternal Warmth	Not Significant	Maternal Warmth
Not Significant	Domestic Violence	Not Significant

Table 11.2: Significant Variables for Child Antisocial Behaviour (Teacher) according to Sample Group

Weighted 'All' Mother	Age<=20 (Younger Mothers)	Age>=21 (Older Mothers)
Frequency of Smacking	Frequency of Smacking	Frequency of Smacking
Fathers ASB	Fathers ASB	Not Significant
Maternal Negativity	Not Significant	Not Significant
Not Significant	Domestic Violence	Not Significant

Examining the sample according to the mother's age at first birth indicated that different risk factors were associated with child antisocial behaviour dependent on the mother's age. For younger mothers, disagreement about childrearing, frequency of smacking, maternal antisocial behaviour, the biological father's antisocial behaviour, domestic violence, maternal negativity and maternal negative comments were associated with child antisocial behaviour at age 5 years old as rated by the mother. However, for older mothers, domestic violence was not significant. Instead, for older mothers parental quarrelling and maternal warmth became associated with child antisocial behaviour as rated by the mother. Examining the teacher report on child antisocial behaviour showed,

however, that for younger mothers only the biological father's antisocial behaviour, the frequency that the child was smacked and domestic violence was associated with child antisocial behaviour. Whilst for older mothers only the frequency of smacking was associated with child antisocial behaviour. Both the mother and teacher reports, therefore, agree that domestic violence is associated with antisocial behaviour in the children of younger mothers.

Our analysis also showed that maternal positive comments, family structure, and poverty were not significant for child antisocial behaviour, as rated by the mother and teacher, at the 5% significance level. We have suggested previously in this thesis that family structure may have little association with child antisocial behaviour, and that much of the association found between the two may be a result of marital conflict. Furthermore, we suggested that maternal positive comments may not be significantly associated with child antisocial behaviour as it is negative parenting interactions as opposed to positive interactions which appear to matter more for child antisocial behaviour. Our finding that poverty was not associated, in our analysis, with child antisocial behaviour may be the result of a number of factors. First, our analysis did not examine how long children had lived in poverty. It may be possible, therefore, that if we had examined the length of time that children had been in high poverty households this may have resulted in a statistically significant association. Second, our data-set examined the effects of poverty on five year old children, and it may be possible that the effects of poverty may become associated with behavioural problems at a later date. Lastly, it may be possible that another variable such as maternal antisocial behaviour or parenting practices may

mediate the effects of poverty (Conger et al 2000), and therefore, poverty may have an indirect effect on child behavioural outcomes (discussed in section 11.3.6 below).

The predicted probabilities for child antisocial behaviour as rated by the mother in Chapter 9 showed that, on the whole, when a risk factor was present, younger mothers were substantially more likely to have a child with high antisocial behaviour than older mothers. However, when a risk factor was not present, for example high maternal negativity, younger mothers were still more likely to have a child with higher levels of antisocial behaviour than older mothers. There were, however, a number of exceptions to this finding. We found that when there was no smacking, low maternal negative comments and low parental antisocial behaviour, younger mothers, became like older mothers, in that they were more likely to have a child with lower antisocial behaviour. It may be, therefore, that lowered parental antisocial behaviour, for example, may act as a protective factor for child antisocial behaviour by reducing the presence of multiple risk factors. This may especially be the case for younger mothers.

Frequency of smacking, in our analysis, was highly associated as a risk factor with child antisocial behaviour at age 5 years old as reported by the mother and the teacher. We therefore examined how far frequency of smacking acted in a protective way moderating the effects of other risk factors, such as parental antisocial behaviour and disagreement about childrearing, on child antisocial behaviour. We found that less frequent smacking may moderate the effects of these factors on child antisocial behaviour. However, another important finding from this analysis was that it was the combination of frequent

smacking with high parental antisocial behaviour or the combination of frequent smacking with high disagreement about childrearing which had the greatest impact. It was evident that when these factors were combined, child antisocial behaviour increased substantially and we suggest that the presence of these factors together may substantially increase the risk of child antisocial behaviour.

11.3.5 Parenting Behaviour, Maternal Attitude and the Parenting Context

Previous research has indicated that parenting may be multiply determined (Belsky 1984) and may be affected by the socio-economic context within which it is situated (Conger et al 2000). In Chapter 10 we focused on how far the parenting context, for example, family structure, poverty, parental antisocial behaviour and marital conflict, affected parenting practices. We argued that this type of analysis was important for the planning of parenting interventions as it may be the case that additional social contextual factors may need to be addressed, for example, marital conflict, if interventions are to have an impact on parenting practices.

Our analysis found that both family structure and poverty appear to have a minimal affect on parenting behaviour and attitude. For example, we found little evidence that parenting behaviour and maternal attitude differs as a function of family structure. The only significant result of interest from our analysis was that mothers who were always 'solo', controlling for levels of poverty, were four times more likely than mothers who were always married to be rated as having high negativity. Examining the impact of

poverty on parenting behaviour and attitude showed that poverty was associated with lowered maternal warmth for younger mothers. No other findings were of significance.

We found stronger associations between marital conflict and parenting behaviour and maternal attitude. However, what was apparent was that the parenting aspect affected by marital conflict was dependent on the dimension of marital conflict examined. Examining differences in levels of disagreement about childrearing showed that as disagreement about childrearing increased so did frequency of smacking, the number of maternal negative comments and maternal negativity. However, when we examined differences in levels of parental quarrelling we found that these were associated with increases in maternal negativity whilst domestic violence, on the other hand, were associated with increases in the frequency that a child was smacked. These findings can be interpreted in a number of ways. First, the association between parental quarrelling and maternal negativity could result from either the hostility in the parent/parent relationship spilling over into the parent/child relationship and thus having an affect on maternal negativity or it could be that particular individuals are more likely to be negative and argumentative which not only leads them to quarrel more with a partner but may also lead them to be more negative about their child. Second, the finding that domestic violence is associated with increases in smacking supports previous research which has found such an association and it may be that in households where domestic violence is prevalent, children also become the victims of this violence. Third, we found that in households where parents disagreed about childrearing this was associated with a greater number of more negative parenting practices being present, and this may explain

why disagreement about childrearing has such a strong association with child antisocial behaviour as rated by the mother.

Our analysis showed that there were stronger associations between parenting behaviour, maternal attitude and parental antisocial behaviour. We found evidence that maternal antisocial behaviour is associated with increases in the frequency that a child is smacked, and the number of negative comments made about the child. Younger mothers who reported high antisocial behaviour in themselves were more likely to be rated as having higher maternal negativity, whilst older mothers who reported higher antisocial behaviour in themselves were more likely to report increased smacking, and be rated as having made a higher number of negative comments about their child. Examining the biological father's antisocial behaviour showed an association between increased paternal antisocial behaviour and an increase in frequency of smacking and maternal negativity. We hypothesised, therefore, that the biological father's antisocial behaviour may have an effect on the mother's parenting attitude, however, it may also be the case that antisocial individuals tend to have children with one another and therefore, the mother's parenting attitude may be a result of her own antisocial behaviour.

11.3.6: Parenting Behaviour and Maternal Attitude as a Mediator of the Effects of Poverty, Parental Antisocial Behaviour and Marital Conflict on Child Antisocial Behaviour

The Family Stress Model (Conger et al 2000; Conger & Elder 1994; Elder & Caspi 1988) suggests that a risk factor such as poverty, for example, may have an effect on child antisocial behaviour through its impact on the marital relationship and parental depression which in turn influences the parenting that a child receives. In Chapter 10 we examined the extent to which family structure, marital conflict, poverty and parental antisocial behaviour acted as distal risk factors operating through a more proximal risk factor such as parenting behaviour and attitude. We found no evidence that parenting behaviour and maternal attitude completely mediated the effects of family structure, marital conflict, poverty, or parental antisocial behaviour on child antisocial behaviour as reported by the mother. However, we found some evidence that parenting behaviour and maternal attitude may partially mediate the effects of poverty, marital conflict and parental antisocial behaviour on child antisocial behaviour as reported by the mother. However, when we examined the teacher reports on child antisocial behaviour we found that parenting behaviour and maternal attitude may completely mediate the effects of maternal antisocial behaviour on child antisocial behaviour. A mother's antisocial behaviour, therefore, may have an affect on a child's antisocial behaviour as a result of its affect on parenting behaviour and maternal attitude¹⁰⁶.

¹⁰⁶ Mothers with high antisocial behaviour were found to be high in negativity, low in warmth, and to smack more frequently

Table 11.3: Does Parenting Behaviour and Maternal Attitude mediate the effects of Poverty, Marital Conflict, Family Structure, Maternal Antisocial Behaviour and the Biological Father’s Antisocial Behaviour on the Child Antisocial Behaviour (Weighted Sample Only)

Variable	Mother Report on Child ASB	Teacher Report on Child ASB
Poverty	Partially	No
Marital Conflict	Partially	No
Family Structure	No	No
Maternal ASB	Partially	Yes
Biodad ASB	Partially	No

11.3.7: Younger Mothers and Multiple Risk Factors

It is evident from our analysis that, the children of younger mothers faced an increased risk of antisocial behaviour when a risk factor, such as poverty for example, was present. However, our analysis also indicated that there is an increased risk of antisocial behaviour for the children of younger mothers even when a risk factor was absent. We have suggested that younger mothers may be more likely to have children with high antisocial behaviour, even when a risk factor is absent, because they may be more likely to face multiple risk factors. Furthermore, we suggested that it is differences in levels of antisocial behaviour between older and younger mothers as opposed to teenage parenting per se which explained the association between teenage parenting and child antisocial behaviour and teenage parenting and the presence of multiple risk factors (Geronimus & Korenman 1992). We focused on differences in levels of maternal antisocial behaviour as our analysis has shown that when parental antisocial behaviour is reduced the children of younger mothers become like the children of older mothers in

that they are both more likely to have lower antisocial behaviour. We anticipated, therefore, that a sub-set of younger mothers may be more likely to have higher levels of antisocial behaviour and suggested that it is their high antisocial behaviour which makes it more likely that they will also face other risk factors such as unemployment, poverty, marital conflict, and poorer parenting. Furthermore, the combination of these risk factors may make it more likely that their children will have higher antisocial behaviour. We therefore tested how far maternal antisocial behaviour explained the association between teenage parenthood, the increased risk of multiple risk factors being present and child antisocial behaviour. We divided our sample into four groups: older mothers with low antisocial behaviour, younger mothers with low antisocial behaviour, older mothers with high antisocial behaviour and younger mothers with high antisocial behaviour. We found that younger mothers with high antisocial behaviour were much more likely than the other groups to have partners with high antisocial behaviour, to have higher levels of poverty, parenting problems and marital conflict. Furthermore, younger mothers with high antisocial behaviour were more likely to be cohabiting, separated or divorced, part of a stepfamily or always 'solo'. They were the least likely group to be always married. However, when we examined the younger mother group who had low antisocial behaviour we can see that they faced less risk factors than both younger mothers and older mothers with high antisocial behaviour but more risk factors than older mothers with lower antisocial behaviour. We, therefore, suggested that it is not being a younger mother *per se* that is associated with the presence of multiple risk factors, but instead it is that sub-set of younger mothers who also have high antisocial behaviour who are at most risk of facing multiple risk factors. These multiple risk factors are also found amongst

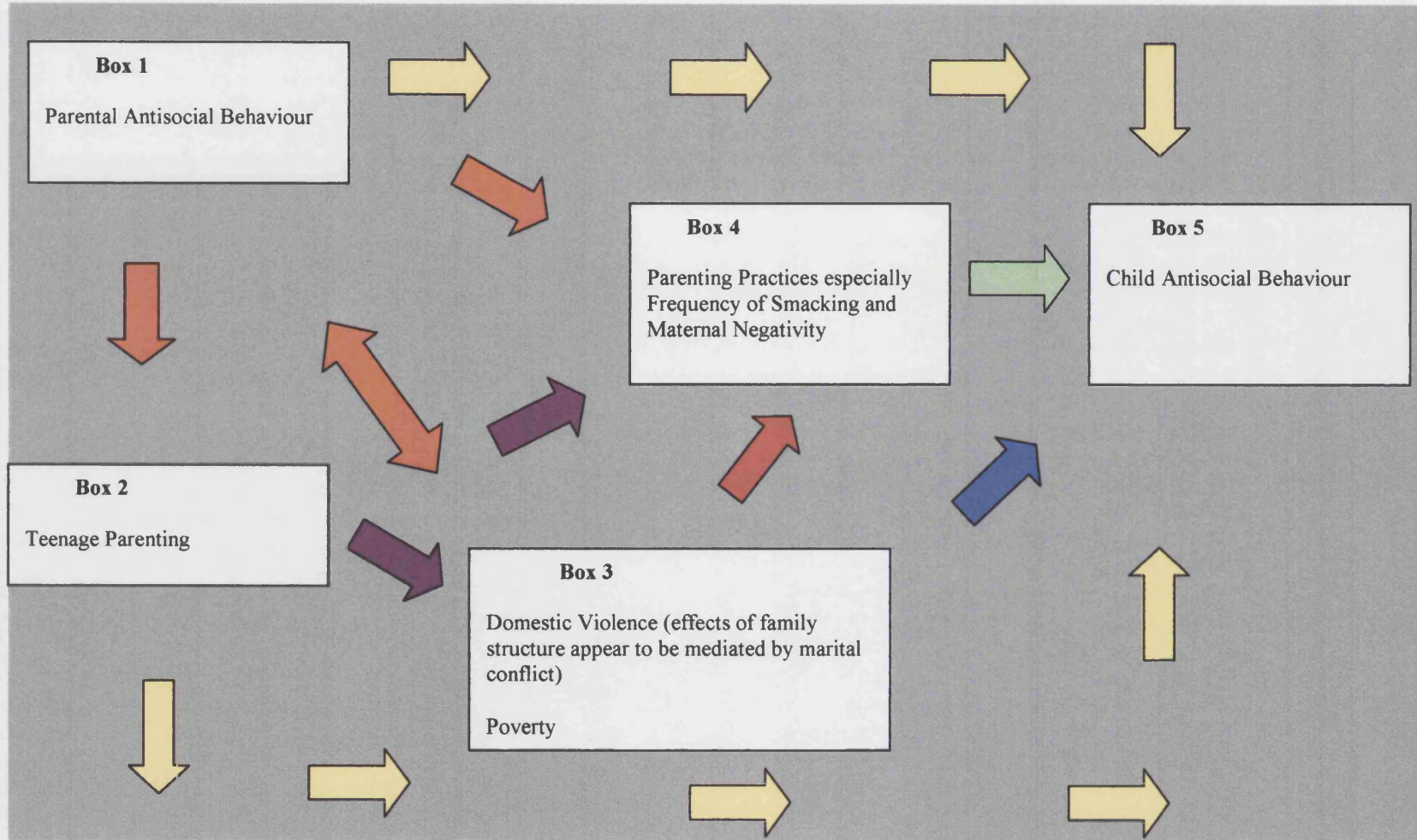
older mothers with high antisocial behaviour but to lesser extent. Therefore, we suggested that it may be the antisocial behaviour of the parent which increases the presence of multiple risk factors and this combination of multiple risk factors and parental antisocial behaviour results in an increased likelihood of their child having high antisocial behaviour. However, this does not mean that young age at first birth is not a risk factor for the presence of multiple risk factors. Our analysis has shown that younger mothers with low antisocial behaviour are more likely than older mothers with low antisocial behaviour to face multiple risk factors. Furthermore, we can see that when high antisocial behaviour is combined with young age at first birth there is a substantial increase in the presence of both multiple risk factors and child antisocial behaviour. Therefore, we suggested that it is the combination of young age and higher levels of antisocial behaviour which increased the presence of multiple risk factors and as a result increased the likelihood of child antisocial behaviour. We, therefore, suggested that interventions which address reducing antisocial behaviour in young people may also have an associated effect on reducing the presence of multiple risk factors such as parenting problems, marital conflict and poverty. This, then, may have an associated impact on reducing the likelihood of antisocial behaviour in their children.

11.3.8: Summary of Key Findings

- ◆ Frequency of smacking has the strongest association, of our parenting measures, with child antisocial behaviour at age 5 years old as measured by both the mother and teacher.

- ◆ Negative parenting interactions as opposed to a lack of positive interactions appear to have the greatest affect on child antisocial behaviour at age 5 years old as reported by both the mother and the teacher.
- ◆ There are differences in levels of child antisocial behaviour at age 5 years old between families who cohabit and those who are married.
- ◆ Mothers who are always 'solo' or who are a part of a stepfamily have the highest probability of having a child with high antisocial behaviour at age 5 years old as rated by both the mother and the teacher.
- ◆ Parental antisocial behaviour is strongly associated with child antisocial behaviour at 5 years old.
- ◆ Poverty and family structure are not significantly associated, in our multivariate analysis, with child antisocial behaviour at age 5 years old as rated by both the mother and the teacher.
- ◆ Much of the association between family structure and child antisocial behaviour (mother report) may be mediated by marital conflict.
- ◆ Parenting behaviour and attitude may partially mediate the effects of poverty, parental antisocial behaviour, and marital conflict on child antisocial behaviour as rated by the mother.
- ◆ Parental antisocial behaviour may mediate the effects of both poverty and marital conflict on child antisocial behaviour at age 5 years old.
- ◆ Younger mothers appear to face multiple risk factors, and the absence of a particular risk factor does not necessarily mean that their children will have low antisocial behaviour.

Figure: 11.1: Research Findings for Antisocial Behaviour at age 5 years old in Diagrammatical Form.



- ◆ Differences in levels of parental antisocial behaviour may be the key to explaining why younger mothers may face multiple risk factors for child antisocial behaviour.
- ◆ The combination of young age and maternal antisocial behaviour may make it more likely that younger mothers face multiple risk factors, and have children with higher antisocial behaviour.
- ◆ Frequency of smacking, domestic violence¹⁰⁷, maternal negativity and the biological father's antisocial behaviour were associated with child antisocial behaviour at age 5 years old as rated by both the mother and the teacher.
- ◆ A reduction in smacking may act as a protective factor reducing the effect of other factors, such as low maternal warmth, on child antisocial behavioural outcomes.
- ◆ Antisocial behaviour in children increased substantially when there were two or more risk factors in a family.
- ◆ There are differences between risk factors for child antisocial behaviour depending on whether the mother or teacher report on child antisocial behaviour is used.

Figure 11.1 above shows our research findings in diagrammatical form. The pale green arrow from box 4 to child antisocial behaviour (box 5) depicts our finding that negative parenting practices such as frequent smacking and maternal negativity are associated with child antisocial behaviour at age 5 years old as reported by both the mother and the

¹⁰⁷ Domestic violence was significant for younger mothers only - for both the mother and teacher reports on child antisocial behaviour.

teacher. Furthermore, the red arrow from box 3 to box 4 indicates that parenting practices such as maternal negativity and frequent smacking may partially mediate the effects of both marital conflict and poverty on child antisocial behaviour as reported by the mother.

Our findings also indicate that both the effects of parental antisocial behaviour and teenage parenthood (Box 1 and 2) on child antisocial behaviour (box 5) may be partially mediated by parenting practices (orange arrow and purple arrow); however, our findings also indicate that these factors may also have a direct affect on child antisocial behaviour (yellow arrow) or their effect may be mediated through another variable which was not examined in this thesis. The two-way orange arrow depicts our finding that parents with high antisocial behaviour may also have high levels of domestic violence and poverty. Furthermore, it suggests that there may also be a possible two-way relationship here and the effects of poverty and domestic violence on child antisocial behaviour may be mediated through parental antisocial behaviour. However, it may also be possible that the effects of marital conflict and poverty may have a partial direct affect on child antisocial behaviour (blue arrow) or their effects may be mediated through another variable which was not examined.

The purple arrow from box 2 to 3 shows our finding that teenage mothers are more likely to have higher levels of poverty and marital conflict than older mothers. Whilst the orange arrow from box 1 to 2 depicts our finding that teenage mothers are more likely to have higher rates of antisocial behaviour than older mothers.

Our diagram 11.1 above does not depict the possibility that a third variable, for example, genetic heritability, which has not been examined in this thesis may also be implicated, and this must be kept in mind when examining the findings above.

11.4: THEORITICAL IMPLICATIONS

Our research was informed by three theoretical perspectives. First, Patterson's Coercion Theory (1982) which suggests that negative coercive parenting practices are implicated in the origins of antisocial behaviour in young children (see Chapter 1). Second, Bronfenbrenner's Ecological Theory (1979) which suggests that, although the family is the primary setting which influences child development, the wider context within which the child lives also affects their development (see Chapter 1), and third by the Family Stress Model (Conger et al 2000) which suggests that risk factors such as poverty, for example, may increase parental stress and therefore impact on child outcomes through parenting practices. As a result we focused our analysis on the effects of parenting on child antisocial behaviour but also examined the effect of the wider socio-economic context on child antisocial behaviour. Furthermore, we were also influenced by the hypothesis, inherent in the Family Stress Model, Coercion Theory and Ecological Theory, that factors external to the family may impinge both on the family themselves as well as on their parenting practices. As a result, the child may experience particular parenting practices as a result of other factors, such as poverty or parental antisocial behaviour affecting the parent's ability to parent effectively.

Our findings have indicated that frequency of smacking, the biological father's antisocial behaviour, maternal negativity and domestic violence¹⁰⁸ are significantly associated with both the mother and teacher report on child antisocial behaviour at age 5 years old¹⁰⁹. We suggest that what these factors may have in common is that they are associated with aggressive and negative interactions within the family unit. Psychological theory points to the importance of the family unit in the development of antisocial behaviour in young children. Patterson (1982), for example, has suggested that poor family management practices are implicated in early onset of antisocial behaviour whilst the Social Development Model of antisocial behaviour (Catalano & Hawkins 1996) hypothesises that risk factors for antisocial behaviour can be organised according to their influence in different developmental settings, for example, families, peer groups, schools and communities. The model suggests, therefore, that for very young children the family unit and interactions within the family are of the utmost importance in the development of antisocial behaviour. Factors outside the family such as peer groups, and schools, may become more relevant as risk factors for antisocial behaviour as the child develops. Our findings, therefore, give some support to theories which implicate the family as being crucial to the development of antisocial behaviour in young children.

Furthermore, our finding, that maternal negativity and frequent smacking are associated with child antisocial behaviour¹¹⁰ give some support to Patterson's Coercion Model which suggests that aggressive, and hostile parenting interactions are more likely to be

¹⁰⁸ Domestic Violence was significant for younger mothers only.

¹⁰⁹ We concentrate in this section only on the variables which were identified by both the mother and teacher reports as being associated with child antisocial behaviour at age 5 years old.

¹¹⁰ As reported by both the mother and teacher.

associated with child antisocial behaviour. Children who live in negative and hostile environments, therefore, may learn that hostile and aggressive interactions are an acceptable way of dealing with disagreements or are an effective strategy for getting their own way (Patterson 1982). Furthermore, our findings that the biological father's antisocial behaviour and domestic violence are associated with child antisocial behaviour may also be a result of these factors leading to an increase in negative and hostile interactions within the family home. Social Learning Theory suggests that marital conflict, for example domestic violence¹¹¹, may affect children's outcomes as children may model or imitate the aggressive behaviour of their parents¹¹² and learn that this is an acceptable strategy for dealing with disagreements (Bandura 1977). Furthermore, other studies have shown that the association between parental antisocial behaviour and disruptive behaviour in children may be explained by the parent providing a model of aggression and antisocial attitudes and values for their children. (Farrington Barnes and Lambert 1996; Murray 1989). As a result domestic violence, maternal negativity, frequent smacking and the father's antisocial behaviour may be implicated in early onset of childhood antisocial behaviour as they promote aggressive negative behaviour and interactions within the main socialisation unit of young children - the family. The child may, therefore, learn that the use of aggressive and negative behaviour is an effective strategy for dealing with others and for getting their own way.

¹¹¹ Some research has suggested that children who witness domestic violence learn that violence is a normative part of family relationships, and that violence is an effective way to control others, and that perpetrators of domestic violence usually go unpunished (Osofsky 1995).

¹¹² It has been suggested that children are more likely to imitate their parents as parents are role models who the child has affectional ties with (Bandura 1973; 1977).

An alternative explanation for the association between negative interactions within the family unit and child antisocial behaviour is that negative aggressive family interactions, within the child's early life, may lead to deficiencies in social information processing¹¹³ which in turn leads to an increased likelihood of child behaviour problems (Dodge, Bates & Pettit 1990; Dodge et al 1995). Studies, for example, have indicated that maltreatment early in life can lead to a 'biased' social information processing system (Dodge 2003) which results in the child being more likely to distort social cues (Milich & Dodge 1984), attribute hostile intentions to innocuous situations, focus on aggressive social cues (Goutz 1981) and define problems in hostile ways (Richard & Dodge 1982). The acquisition of this 'biased' social information processing system, it is hypothesised, results in personality traits which leads to the child reacting in a hostile way to others to avoid potential confrontation. Negative hostile interactions within the family unit, therefore, may be important in the origins of antisocial behaviour as they may lead to the child developing a hostile view of both relationships and other people which then influences their future behaviour (Dodge 2003).

Our findings have indicated, therefore, that negative interactions within the family are significantly associated with child antisocial behaviour at age 5 years old. However, it may be the case that particular individuals may be more likely to use aggressive negative methods towards their partners, for example domestic violence, their children, for example frequent smacking and to others (Krueger et al 2000; Patterson 1992). This

¹¹³ Very briefly, information processing theory (Newell & Simon 1972) suggests that an individual's response to a situation may be the result of a complex sequence of operations performed by the brain in which social cues are evaluated and interpreted in relation to past experiences and action taken as a result (see Dodge 2003 for more detail).

hypothesis would appear to be supported by our findings in 8 and Chapter 10 where we found that parents with high antisocial behaviour were not only more likely to report domestic violence but also more likely to use aggressive hostile parenting practices with their children. It would appear, therefore, that those individuals who engaged in severe domestic violence and who had severe parenting problems were not only the same individuals who had children with high antisocial behaviour but were also the same individuals who had high levels of antisocial behaviour themselves. This finding could be interpreted in a number of ways. First, our finding that antisocial individuals are more likely to report domestic violence, and negative aggressive parenting could reflect a gene-environment correlation in that genetic differences between individuals may also influence the environment in which they live (Plomin and Bergmann 1991). As a result parents with antisocial behaviour may not only transmit genes which make it more likely that their children will be at risk of antisocial behaviour¹¹⁴, but provide negative and hostile family environments which are the result of their own genetic propensity. Domestic violence and aggressive hostile parenting may, therefore, co-exist in a family as a result of the parent's genetic make-up. Second, it has been suggested that domestic violence and negative parenting may co-exist in families who report high antisocial behaviour as a result of both of these factors being an 'expression of a general antisocial orientation' (Simons, Simons, & Wallace 2004:164). An individual's general antisocial orientation or tendency, therefore, would result in them being more likely to display a number of antisocial behaviours which includes fighting, excessive drinking,

¹¹⁴ Genes may be transmitted from parent to child which affects the propensity of the child to behave in an antisocial way.

domestic violence¹¹⁵, and negative parenting¹¹⁶. Marital conflict, negative hostile parenting, and other forms of antisocial behaviour, therefore, may co-exist in families as a result of 'general patterns of antisocial behaviour' being transmitted across generations in antisocial families (Simons, Simons & Wallace 2004:147). However, although this hypothesis explains why antisocial behaviour, domestic violence and negative parenting may co-occur in the same household, and across generations it is not so obvious how individuals acquire an antisocial orientation in the first place. Previous research has pointed, again, to the importance of ineffectual and negative parenting practices in the development of an antisocial orientation (Patterson, Reid & Dishion 1992; Sampson & Laub 1993). As a result negative hostile parenting practices may be seen as having a possible affect on the development of an antisocial orientation as well as being a manifestation of an antisocial orientation. A child's exposure to negative and hostile parenting practices, therefore, may increase the chances that the child will grow up to have an antisocial lifestyle which in turn may make it more likely that they will use negative and hostile parenting practices with their children (Patterson 1992). As a result, antisocial tendencies may be transmitted from parent to child across generations through antisocial behaviour manifesting itself as negative and hostile parenting practices. Third, previous research has indicated that antisocial individuals may be more prone to temperamental qualities, like negative emotionality, which make it more likely that they will experience negative emotions more frequently and out of proportion to the circumstances (Lahey & Waldman 2003; Krueger et al 2000). As a result,

¹¹⁵ Previous research suggests that children with a developmental history of conduct disorders are much more likely to grow up to use domestic violence (Magdol, Moffitt, Caspi & Silva 1998).

¹¹⁶ Some theorists also point to the possibility that teenage parenting may also be a manifestation of an antisocial orientation (Rutter, Giller & Hagell 1998).

personality traits like negativity emotionality may make it more likely that antisocial individuals 'generate and perpetuate coercive cycles of interchange' (Rutter, Giller & Hagell 1998:299) which not only leads to poorer parenting but also to an increased probability of marital conflict. Previous research has indicated that personality traits like negative emotionality may have a genetic basis (Plomin et al 1992) whilst other research has suggested that traits like negative emotionality may arise out of environmental risks like negative and hostile parenting (Dodge, Bates & Pettit 1990; Dodge et al 1995).

Our research has, therefore, indicated that the nature of the interaction within the family may be an important factor in early onset antisocial behaviour and that other factors, such as poverty, appear to have less of an impact for this age group. This, as discussed previously, may be for a number of reasons. However, although our findings suggest that poverty is not significantly associated with child antisocial behaviour at age 5 years old, our findings do give some support to the Family Stress Model hypothesis that poverty may have an affect on child antisocial behaviour through its affect on parenting practices¹¹⁷. Furthermore, it may also be possible that poverty may have an effect on parenting practices and as a result child outcomes through its affect on the parent's relationship¹¹⁸. The Family Stress Model (Conger et al 2000), for example, hypothesises that poverty increases strain and stress in the parent's relationship which makes it more likely that they will use ineffectual parenting with their children. Our findings, therefore, that marital conflict is more likely to be associated with differences in

¹¹⁷ Mother report only.

¹¹⁸ Not examined in this thesis.

parenting behaviour and attitude than poverty may be a result of this thinking. Poverty, therefore, may lead to a reduction in the quality of the parent-child relationship and the parent-parent relationship. This point may be especially salient to individuals who have high antisocial behaviour as they have been identified as being more likely to have difficulties in parenting their children and in relationships with their partners. Furthermore, these individuals are more likely to have higher poverty rates (see Chapter 8). It may be the case, therefore, that poverty exacerbates relationship difficulties in individuals with high antisocial behaviour which in turn exacerbates parenting difficulties.

We have suggested, throughout this thesis, that it is important to analyse risk factors in a multivariate format as some risk factors may have a proximal effect on child antisocial behaviour whilst other risk factors may have a distal effect. Our multivariate research findings give some support to the Coercion Theory hypothesis which suggests that negative and hostile parenting practices may have a proximal direct effect on the development of antisocial behaviour at age 5 years old (Patterson 1982). Furthermore, our findings give some support to the hypothesis that parenting practices may mediate the effects of other factors such as poverty, marital conflict and parental antisocial behaviour on child antisocial behaviour (Conger et al 2000; Patterson et al 1992). However, it was evident from our findings that parenting practices only partially mediated the effect of these factors on child antisocial behaviour and as a result these

factors may also have a partial direct effect on child antisocial behaviour or their effect may be mediated by another variable¹¹⁹.

One possible factor which may mediate the effects of poverty and marital conflict on child antisocial behaviour, we suggest, may be parental antisocial behaviour. For example, in Chapter 8 we found evidence to suggest that parental antisocial behaviour may mediate the effect of poverty on child antisocial behaviour; whilst in Chapter 10, we found evidence to suggest that the biological father's antisocial behaviour may mediate the effects of marital conflict on child antisocial behaviour¹²⁰. As a result we suggest that, poverty and marital conflict may have an effect on child antisocial behaviour because these factors may make it more likely that an individual with high antisocial behaviour will react to stress in more hostile and negative ways. Previous research has indicated, for example, that antisocial individuals may be more likely to experience personality traits such as negative emotionality which makes it more likely that they will react to any problem or stress in a negative way. The presence of stressful factors such as marital conflict or poverty, therefore, may lead to an increase in an individual's antisocial behaviour both at home and outside the home. This increased hostile and negative behaviour may then manifest itself as negative and aggressive parenting practices¹²¹. It is possible, therefore, that the effect of factors such as poverty and

¹¹⁹ However, it is also evident that our research only examined a limited amount of risk factors for child antisocial behaviour and it may be the case that research which also examined other factors such as temperamental qualities of children or genetic influences may render our associations non-significant.

¹²⁰ There was no evidence to suggest that the mother's antisocial behaviour mediated the effects of marital conflict.

¹²¹ It is evident from our research that parenting practices do not completely mediate the effects of parental antisocial behaviour on child antisocial behaviour, so although the individuals antisocial behaviour may manifest itself as negative and hostile parenting, it is apparent that the individuals antisocial behaviour may

marital conflict on child antisocial behaviour may, therefore, be mediated by both parenting practices¹²² and parental antisocial behaviour¹²³.

To summarise, therefore, our findings support the Coercion Theory hypothesis (Patterson 1982) that negative and hostile parenting interactions may be implicated in the development of antisocial behaviour in children aged 5 years old. Furthermore, our findings give some support to the Family Stress Model hypothesis that poverty may affect children's outcomes through its effect on parenting practices¹²⁴. We have suggested that factors such as poverty may affect the development of antisocial behaviour in young children because poverty, for example, may make it more likely that a child will experience both negative parenting as well as increased levels of parental antisocial behaviour. We suggest, further, that the increase in levels of parental antisocial behaviour may manifest itself in even more ineffectual, hostile, coercive parenting practices.

also have a direct effect on child antisocial behaviour, for example, the transmission of antisocial attitudes or values or an indirect effect through another variable, for example, genetic heritability.

¹²² Factors like poverty and marital conflict may affect parenting practices as both may diminish the parent's ability to interact with and socialise children in ways which are beneficial to their well-being (Conger et al 2000).

¹²³ The findings for marital conflict being mediated by the parent's antisocial behaviour are only relevant to the biological father's antisocial behaviour. We found no evidence to suggest that the mother's antisocial behaviour mediated marital conflict.

¹²⁴ Mother report only.

11.5: IMPLICATIONS FOR INTERVENTIONS

The findings of the present study may have a number of implications for interventions for children with antisocial behaviour¹²⁵. Our results have suggested that there is a strong association between the frequency that a child is smacked and the child's antisocial behaviour as rated independently by the mother and the teacher. Those children who are smacked the most frequently have the highest antisocial behaviour rating. However, although we cannot make a causal link between smacking and child antisocial behaviour, our results suggest that children with antisocial behaviour are being smacked more frequently. This may be important as previous research has indicated that excessive corporal punishment may actually maintain or worsen the child's antisocial behaviour (Gershoff 2002; Straus 1999; 1994; Becker 1964, Patterson 1982, Radke-Yarrow, Campbell & Burton 1968). Furthermore, our findings have suggested that a reduction in smacking may protect the child from the risk of other factors such as marital conflict, and other parenting difficulties such as low maternal warmth or high maternal negativity. Therefore, it may be worthwhile for interventions which aim to reduce antisocial behaviour in children to focus on reducing excessive smacking and help support families in finding other disciplinary strategies to replace frequent smacking. Moreover, we suggest that these interventions may also need to focus on addressing parental negative attitudes as our findings indicate that it is negative interactions as opposed to a lack of positive interactions which are associated with child antisocial behaviour. It is also important, we suggest, that interventions which aim to reduce antisocial behaviour in

¹²⁵ Our findings are correlational associations and are not causal inferences and this must be kept in mind when considering the implications for interventions.

children may need to be situated in an overall schema which not only addresses parenting behaviour and attitude but also addresses how best parents can manage marital conflict¹²⁶. This type of multi-factorial intervention is especially important for parents with high antisocial behaviour as our research suggests that these individuals may be more likely to use aggressive methods towards their partners as well as their children. We, therefore, would support parenting and family relationship interventions which are especially designed for those individuals at risk of offending or antisocial behaviour. Previous research which evaluated the 'Safe Ground Family Relationship and Parenting Programmes' in prisons have shown that they have positive outcomes as reported by both the prisoners themselves and their families including a better understanding of family relationships and parenting, feeling more committed to their families; and understanding the needs and perspective of others. These effects were still in evidence 3-4 months after the course finished (Halsey et al 2002).

Lastly, our research has indicated that the absence of a risk factor does not always appear to have the same effect on the children of younger mothers as it does for older mothers. We have suggested previously in this thesis that this may be a result of younger mothers being more likely to face multiple risk factors which increases the prevalence of child antisocial behaviour even when a particular risk factor is absent. We have suggested that younger mothers may be more likely to face multiple risk factors as a result of a sub-set of younger mothers being more likely to have higher antisocial behaviour themselves. This increased antisocial behaviour may make it more likely that

¹²⁶ It may also be important for interventions for child antisocial behaviour to address how the child thinks about violence and whether they think that violence is normal and an effective way of getting their own

they also face multiple risk factors. Therefore, we suggest that interventions which aim to reduce both antisocial behaviour in younger mothers and teenage parenthood itself may have a knock-on effect of reducing the likelihood of both multiple risk factors being present and child antisocial behaviour.

11.6: POLICY IMPLICATONS

Tackling antisocial behaviour is a policy priority for the present Labour Government (Home Office 2004), and the Government has introduced a number of initiatives to reduce antisocial behaviour as well as improve outcomes for children, young people and families. However, the Government's stance on antisocial behaviour has been criticised for its emphasis on sanctions and enforcement (NCH 2005) as opposed to an understanding of the causes of antisocial behaviour. Previous research, for example, has shown that in many serious antisocial behaviour cases, the individual involved may have multiple problems and vulnerabilities (Hunter, Nixon & Shayer 2000). Furthermore, our own analysis has indicated that both mothers and children with high antisocial behaviour were much more likely than any other group to have multiple risk factors like poverty, marital conflict, teenage parenthood and parenting problems. These risk factors, we suggest, are very similar to the risk factors identified for social exclusion. As a result, Government policy on antisocial behaviour, with its emphasis on stigma, enforcement and sanctions, may not be helpful in ensuring take-up of services from a group of individuals who have been identified as 'hard to reach' and as having multiple disadvantages (Doherty et al 2003). We suggest, therefore, that policy on antisocial

way (Moffitt 2003).

behaviour should not be alienated from policy on social exclusion; as risk factors for social exclusion appear to be the same risk factors for antisocial behaviour. Having said that, however, it would appear that the Government, with the recent announcement of a new Social Exclusion Taskforce (Cabinet Office 2006), also recognises that policies for social exclusion may also need to tackle antisocial behaviour. The Action Plan from this Taskforce, published this Autumn 2006, is expected to focus on identifying at-risk households and children who may be at risk 'to themselves and to others'. Furthermore, it is stated that the Action Plan will support work undertaken by the 'Respect Unit' to improve programmes to 'help prevent the problem families of tomorrow' (Cabinet Office 2006). It appears, therefore, that the new Social Exclusion Action Plan will focus on tackling antisocial behaviour.

The Government's focus on antisocial behaviour, however, could be said to be problematic in that the definition it uses of antisocial behaviour is so wide that it includes many different types of behaviour ranging from very minor acts such as dropping litter (which may need no official intervention) to more serious acts such as setting fires (which may need intervention). The wide range of behaviours, therefore, that could be classed as antisocial may result in support and resources being diverted from those individuals who actually need intervention. Furthermore, some critics have suggested that Government policy on antisocial behaviour is more about doing 'justice for victimsthan doing justice to offenders' (Squires 2006:151) and it could be argued that the Government's broad definition of antisocial behaviour is a result of this thinking. All previous research, however, agrees that antisocial behaviour which starts in

childhood is more likely to be associated with later social exclusion, adult antisocial behaviour and criminality (Blumstein, Farrington and Moitra 1985; Lipsey and Derzon 1998). Furthermore, early onset of antisocial behaviour has been associated with multiple problems such as cognitive deficits, difficult temperament, hyperactivity, inadequate parenting, disrupted family bonds, and poverty (Moffitt 1993). Government policy, therefore, on antisocial behaviour may need to concern itself less with minor antisocial acts and more with understanding risk factors and solutions for both early onset antisocial behaviour and recidivist adult antisocial behaviour.

Lastly, the Government's Respect Action Plan (2006) explicitly states that its focus is on understanding the causes of antisocial behaviour and it is evident from the Respect Action Plan that the Government sees the causes of antisocial behaviour as lying within the family and with parenting in particular. Our research findings would support the Government's focus on parenting and has indicated that parenting behaviour and maternal attitude may be important risk factors for antisocial behaviour. However, our research has also indicated that parenting behaviour and maternal attitude may be partially influenced by factors such as poverty, parental antisocial behaviour and marital conflict. Therefore, it may be the case that structural inequality and the wider social context may impact on the parent's capability to parent effectively and as such the parenting that a child receives. Therefore, whilst we support the Government's emphasis on parenting as a risk factor for child antisocial behaviour, we also suggest, that it may be important that policy reflects that the parenting a child receives may itself be the result of social processes, social inequalities and social exclusion. Policy, therefore,

which blames parents for poor parenting but does not take into account the social processes which may impinge on their parenting is unhelpful, and we suggest, therefore, that policy may need to focus not only on improving parenting practices and supporting parents but also on the structural inequalities which may impinge on their parenting.

11.7: STRENGTHS OF THE RESEARCH

We can identify a number of strengths of our research. First, the E-Risk data-set is an up-to-date set of data on contemporary matters which affect both children and families. This is important as recent research has shown increases in child poverty (Piachaud & Sutherland 2000), as well as increases in divorce, lone parenting, cohabitation and repartnering (Social Trends 2001). Second, the E-Risk data set oversampled teenage mothers and we were able to use this sampling framework to examine the differences between older and younger mothers. This sampling frame combined with the low attrition rate ensured that there were enough families who may be at high risk of child antisocial behaviour in the study. Third, there was very little missing data in the E-Risk data set, and therefore, bias was kept to a minimum. Fourth, the use of the Life History Calendar within the E-Risk study allowed us to examine five family structure groups, and thus we were able to examine family structure in more detail. Fifth, the E-Risk data set provided a number of parenting variables which enabled us to untangle parenting as a variable. Sixth, the E-Risk study collected information on both the mother's and biological father's antisocial behaviour. Seventh, child antisocial behaviour was rated independently by the teacher and the mother increasing the validity of our measure.

11.8: LIMITATIONS OF THE RESEARCH

Nine methodological limitations of the present study must be taken into account when interpreting the findings. First, the proposed research examined a limited number of risk factors for antisocial behaviour. The body of research on antisocial behaviour, however, has identified many more risk factors which were not examined. Second, this research is cross-sectional. Therefore, our findings are correlational associations as opposed to causal inferences. Although the E-Risk study is longitudinal, data was not available at the time of writing for the second wave. Ideally, longitudinal data would have been the preferred choice. Third, parental attitude was measured via mothers' expressed emotion and not fathers'. It is possible that children with two parents who are high in warmth may show more positive cognitive and behavioural outcomes when compared with children who have only one parent high in warmth. In addition, it is also possible that maternal and paternal warmth may have different outcomes for child behaviour. Chen, Liu and Li (2000) studied a sample of 12-year olds and found that maternal warmth predicted children's emotional adjustment whereas paternal warmth predicted school achievement. This finding could suggest that paternal warmth may have a different effect on the outcomes of children and that future studies may want to employ a measure of warmth and negativity from both mothers and fathers. Fourth, although our parental attitude variables measured the mothers Expressed Emotion, our frequency of smacking measured parental smacking and related to any smacking that had occurred by either the mother or the father. Therefore, it may be the case that there are differences between households in the effect and level of smacking according to the gender of the parent who smacks. Furthermore, households where both parents smack may have different

outcomes to households where only one parent smacks. Fifth, the sample consisted of twins, and this should be borne in mind when interpreting the findings which relate to parenting behaviour and antisocial behaviour when the sample is spilt according to the mother's age at first birth. It could be that having twins makes more of a demand on younger mothers than it does on older mothers. Therefore the findings which relate to younger mothers parenting and child antisocial behaviour may be a result of the added pressure on younger mothers of having twins which may not be replicated in singleton studies. Our results, therefore, may not be transferable to non-twin families. However, although this needs to be taken into account, previous research on non-twin samples supports our findings by showing that younger mothers are more likely to have children with higher antisocial behaviour than older mothers as well as more problems with parenting. Furthermore, if it is the case that having twin children puts more of a strain on younger mothers than older mothers, it may also be the case that younger mothers who have all their children within a short time period will face similar difficulties. Sixth, it could be argued that the association between teenage mothers and parenting difficulties may be a result of the mother's young age at the birth of her first child and that these parenting difficulties may lessen in later pregnancies when she is more experienced in child care. However, we examined this hypothesis and this was not the case for our sample. We divided the teenage mother group into two groups: group 1 consisted of mothers who had given birth to a child as a teenager, and who had then given birth to the twins when they were no longer a teenager whilst group 2 consisted of mothers who had given birth to the twins as teenagers. We found that group 1 mothers were more likely to have higher rates of parenting problems than group 2 mothers. It would seem,

therefore, that parenting problems in young mothers may persist and may actually worsen with the birth of additional children. We suggest that this may be a result of an accumulation of adverse experiences over the young mother's lifespan. Seventh, our reports on smacking, and domestic violence were from one source only, the mother. It may be the case that the mother over-rated or under-rated smacking or domestic violence and this raises questions as to the validity of this measure. We may have got different results if we had used an additional independent rating of smacking or domestic violence (see Chapter 5). Eighth, the test-retest reliability scores for the expressed emotion variables were low to moderate as a result it may be possible that expressed emotion variables vary as a result of the mother's mood or the child's behaviour. We may, therefore, have got difficult results if we had undertaken expressed emotion interviews with the mother on a different day (see Chapter 5). Ninth, it is evident from our findings that the mother and teacher reports on child antisocial behaviour did not necessarily agree about which risk factors were more relevant for the development of antisocial behaviour at age 5 years old. For example, the mother report on child antisocial behaviour was significantly associated with marital conflict whilst the teacher report for this variable was on the whole not significant. As a result, we focused our analysis and discussion on those risk factors where there was consensus between the mother and teacher reports.

11.9: FUTURE RESEARCH ON CHILD ANTISOCIAL BEHAVIOUR

The findings of this thesis may have a number of implications for future research on children with antisocial behaviour. Our first finding, in relation to family structure, was that both the always 'solo' mothers and stepfamilies were the most likely to have a child with higher antisocial behaviour ratings, and the always married were the least likely to have a child with high antisocial behaviour. This finding may have implications for research which examines family structure as a binary phenomenon, for example, one parent vs. two parent families. For example, if we had combined stepfamilies and the always married into one group called 'two parent' families, our finding that stepfamilies were more likely than the always married group to have children with higher antisocial behaviour would have been obscured. Our second finding, that family structure may be associated with child behavioural problems, not as a result of family structure *per se*, but as a result of the marital conflict which occurs within the family, and which may have been the important factor in the breakdown of the relationship confirms previous research which indicates that family process may be more important than family structure in the origins of child antisocial behaviour. Third, our results in relation to child antisocial behaviour and social exclusion may be important, as they indicate that it may be useful to utilise indicators of social exclusion, when researching child antisocial behaviour, which not only measure material deprivation and poverty, but also measure parental values and behaviour. Fourth, our research found differences in the susceptibility of younger and older mothers to risk factors. Future research may need to take into account the mother's age at first birth when interpreting results. Fifth, our findings give some support to the

Family Stress Model hypothesis that factors such as poverty, and marital conflict may have an effect on child outcomes as a result of their effect on parenting practices. However, we stress that our findings indicate that parenting practices only partially mediate the effect of these factors on child antisocial behaviour. As a result, marital conflict, poverty and parental antisocial behaviour may also have a direct effect on child antisocial behaviour or their effects may also be mediated by another variable. Further research is, therefore, needed on the possible mechanisms through which these variables may affect child antisocial behaviour. Sixth, our use of the mother and teacher reports on child antisocial behaviour show the importance of using multi-informant ratings when examining children's behavioural problems. Mothers, in our sample, tended to rate more antisocial behaviour in their children than teachers did, and as discussed previously in Chapter 5 this may be for a number of reasons. Seventh, our research focused mainly on the mother's parenting attitude as opposed to the fathers. For future research, it would be profitable to examine both the mothers and fathers parenting attitude. It may be possible that having a father with high paternal negativity, for example, may have more of an effect or less of an effect than having a mother with high maternal negativity. Moreover, the worst prognosis in terms of child antisocial behaviour could be a family where both the parents are high in negativity. Eighth, our analysis has shown that frequency of smacking is highly associated with child antisocial behaviour at age 5 years old. We have suggested that it is not so much whether a parent smacks or not which is important but the frequency that they smack. We also hypothesise that the severity of smacking may be important. For example, how a parent smacks, for example, on the face, and what they smack with, for example an implement

as opposed to a hand. Therefore, future research on smacking and child antisocial behaviour may want to focus on both the frequency that a child is smacked and the severity of smacking. Ninth, our analysis found differences between younger and older mothers in relation to child antisocial behaviour, family structure, marital conflict, poverty, parental antisocial behaviour and parenting behaviour and attitude. However, we have sounded a note of caution about our results, as it may be possible that having twins may be more of a challenge for younger mothers as opposed to older mothers. Therefore, further analysis may be needed within a singleton study to see how far our findings are replicated. Tenth, we have shown that younger mothers themselves may differ in respect to levels of poverty, child antisocial behaviour, marital conflict, parenting problems and family structure. We have suggested that these differences may be a result of differences in levels of maternal antisocial behaviour. We suggest that the combination of young age and high maternal antisocial behaviour makes a sub-set of younger mothers more likely to face multiple risk factors. Future research, therefore, may wish to examine not only differences between younger and older mothers, but also differences within the younger mother group themselves.

Lastly, the present study does not address causality of the relationship between parenting and child antisocial behaviour due to the cross-sectional nature of the data. Instead we have identified possible risk factors for child antisocial behaviour at age 5 years old. Further research is, therefore, needed to elucidate the causal relationship¹²⁷ between risk factors such as parenting and child antisocial behaviour. This is important as it may be possible that negative parenting practices, for example, will have more of an effect on

particular children¹²⁸. Furthermore, it may be that children with behavioural problems or particular temperaments may elicit hostile and aggressive parenting reactions from their parents and as a result, the association between parenting and antisocial behaviour in children may be a result of the child's behaviour and not vice versa. An examination of the causal relationship between risk factors, such as parenting, and antisocial behaviour could be undertaken in the following ways. First, the use of behavioural-genetic research designs. This type of research design is important as behavioural genetics research has indicated that a) genes may be implicated in the transmission of antisocial behaviour from parent to child b) a parent's heritable traits may influence the environment they provide for their children c) individual's at genetic risk may be more susceptible to adverse environments. Research designs, therefore, which cannot separate genetic and environmental factors, may mistake correlational findings with causation (Scarr 1992). In other words, it may be possible that associations between environmental factors such as parenting and child antisocial behaviour may be the result of a third variable which has not been controlled for; this third variable may be genetic influences. As a result genetic influences may make it more likely that a parent will use particular parenting styles or that a child who is at genetic risk may be more susceptible to particular parenting styles. Behavioural-genetic research designs such as twin studies¹²⁹ or adoption studies¹³⁰ which also directly measure environmental factors, therefore, may be an important tool for understanding the causal relationship between parenting and antisocial behaviour as they control for genetic influences and can also

¹²⁷ Causation relates to the how and why risk factors affect child antisocial behaviour.

¹²⁸ These children may be at genetic risk or at risk because of earlier adverse environmental experiences

¹²⁹ In MZ twin studies, twins share 100% of genes, and any difference between the twins can be attributed to environmental factors.

examine gene-environment correlations and interactions. Second, the use of longitudinal studies. Research designs which are longitudinal are important in understanding causality as they can track changes across time in an individual's life and analysis undertaken to examine whether the introduction of a risk factor, for example hostile parenting, leads to an increase in antisocial behaviour. Furthermore, this kind of research design allows an analysis of how far particular risk factors are more relevant at particular developmental stages (Catalano & Hawkins 1996). Third, the use of randomised treatment experiments¹³¹ (Howe, Reiss & Yuh 2002). This type of research design randomly¹³² allocates individuals to two groups: a) a control group b) a group which undergoes an experimental intervention program. The intervention program would then target risk factors for antisocial behaviour, for example parenting, and the treatment group would undergo an intervention for parenting. The risk factor, in this case, parenting, and the child's antisocial behaviour would then be measured several times over the course of the intervention and at intervals (months/years) after the intervention to see if there was a difference. The evidence from this sort of research design would indicate that a) group differences in later antisocial behaviour were due to the parenting intervention itself and not to a range of other factors b) differences between the groups in levels of antisocial behaviour were the result of interventions for parenting. As a result, the lower level of antisocial behaviour in the intervention group may be a result of the parenting intervention. This would provide some evidence, therefore, that parenting is not only a risk factor for child antisocial behaviour but may actually be

¹³⁰ Adoption studies are useful in that the parenting environment is not provided by the biological parents and as a result cannot be effected by their genes.

¹³¹ This type of research design, therefore, integrates experimental controls with longitudinal correlational designs and can provide evidence for causality that neither design could entirely provide on its own.

causally implicated in the origins of antisocial behaviour. It is important to note, however, that no one research design can provide conclusive evidence of causation and it has been suggested that the way forward is the usage of a number of different research designs which all provide collaborative evidence (Moffitt 2005).

11.10: CONCLUDING COMMENTS

Our findings have indicated that negative interactions within both the parent/child relationship and the parent/parent relationship are strongly associated with child antisocial behaviour at age 5 years old. Furthermore, it is evident from our findings that parents with high antisocial behaviour may not only be more likely to have children with high antisocial behaviour but may also be more likely to use aggressive and hostile methods with both their children and their partners. This finding is particularly relevant for young parents with high antisocial behaviour. Our findings suggest, therefore, that interventions to reduce antisocial behaviour in children may need to focus on reducing parental marital conflict as well as focus on improving negative hostile parenting practices. This type of intervention, we suggest, is important for parents with high antisocial behaviour but may be especially important for young parents who have high antisocial behaviour as this group may be the most likely to have both multiple risk factors and children with antisocial behaviour. Lastly, our findings suggest that Government policy on antisocial behaviour should not be alienated from policies on social exclusion as families with high antisocial behaviour often face multiple

¹³² Random allocation is important as it makes it less likely that there are inherent differences within the groups.

disadvantage and difficulties. A focus on blame and stigma, therefore, is unhelpful, we suggest, for families who in many ways appear to have many of the same features as those that are identified as socially excluded. Government policy, therefore, may need to concern itself more with understanding the causes of antisocial behaviour and less with sanctions which can potentially criminalise vulnerable individuals.

Government initiatives like 'Every Child Matters', therefore, are important, we suggest, for tackling antisocial behaviour as they focus attention on the early identification of problems. Early identification of behavioural problems is important as previous research has suggested that support and intervention are more effective with younger children at the onset of any problem as opposed to intervention when the behavioural problem is more entrenched (Scott et al 2001a). Furthermore, 'Every Child Matters' emphasises the importance of co-ordinated services and this is important as our research suggests that multi-factorial interventions may be needed for children at particular risk of antisocial behaviour, for example, those children in households where there is family antisocial behaviour.

However, although the Labour Government has introduced a range of policies and programmes which are intended to improve outcomes for children, young people and families it is debateable as to whether so called 'problem families' (Home Office 2006) will take advantage of these initiatives. Policy and interventions, therefore, may need to re-think how they can engage with families who may be resistant or extremely vulnerable. Previous research has suggested that the voluntary sector may be more

successful in reaching families who are more 'hard to reach' as they are seen as less distant by the families and more in tune with local populations and their needs (Doherty et al 2003). The use of the voluntary sector to deliver services, therefore, may be one possible strategy to reach families who are resistant to the take-up of services. However, it is evident from past research that policy and how interventions are delivered may need to change to ensure that services and support reach all children and families in need (Doherty et al 2003).

Appendix 1

Maternal Expressed Emotion Predicts Children's Antisocial Behavior Problems: Using Monozygotic-Twin Differences to Identify Environmental Effects on Behavioral Development

Avshalom Caspi and Terrie E. Moffitt
Institute of Psychiatry, King's College London and
University of Wisconsin—Madison

Julia Morgan, Michael Rutter, Alan Taylor,
Louise Arseneault, Lucy Tully, and Catherine Jacobs
Institute of Psychiatry, King's College London

Julia Kim-Cohen
Institute of Psychiatry, King's College London and
University of Wisconsin—Madison

Monica Polo-Tomas
Institute of Psychiatry, King's College London

If maternal expressed emotion is an environmental risk factor for children's antisocial behavior problems, it should account for behavioral differences between siblings growing up in the same family even after genetic influences on children's behavior problems are taken into account. This hypothesis was tested in the Environmental Risk Longitudinal Twin Study with a nationally representative 1994–1995 birth cohort of twins. The authors interviewed the mothers of 565 five-year-old monozygotic (MZ) twin pairs and established which twin in each family received more negative emotional expression and which twin received more warmth. Within MZ pairs, the twin receiving more maternal negativity and less warmth had more antisocial behavior problems. Qualitative interviews were used to generate hypotheses about why mothers treat their children differently. The results suggest that maternal emotional attitudes toward children may play a causal role in the development of antisocial behavior and illustrate how genetically informative research can inform tests of socialization hypotheses.

Children who are reared in the same family by the same parents are often remarkably different from each other. In part, siblings differ because they have different genetic makeups, different ages, and sometimes different sex. However, differences can be seen between siblings who are monozygotic (MZ) twins despite the fact that they are identical in genetic makeup, age, and sex. For many psychiatric disorders, MZ twins who are reared in the same family are discordant in over 50% of the cases (suggesting that heritability

is much less than 100%). Behavioral genetics research has exploited these differences between MZ twins to provide evidence that children growing up in the same family are different from each other for environmental reasons. These environmental experiences have been called nonshared (Plomin & Daniels, 1987; Rowe & Plomin, 1981) or child-specific (Kendler, 1993) experiences because they are unique to each sibling growing up in the same family. Historically, most behavioral genetic studies have identified the existence of a nonshared-environment "variance component," but these studies have not *measured* nonshared experiences. Because it is now known that nonshared environmental experiences are important, psychosocial researchers need to measure experiences that vary among children within families and to ascertain whether these measured experiences can account for behavioral differences between children growing up in the same family. This is one method of testing whether a risk factor having alleged environmental effects on development is indeed environmentally mediated.

The goal of the present study was to measure child-specific aspects of mothers' parenting styles and to test whether differential maternal attitudes and feelings account for differences between siblings growing up in the same family. Specifically, we focused our attention on mothers' expressed emotion toward their children, and we tested whether differences in maternal expressed emotion account for differences in young children's early-emerging antisocial behavior problems.

We focus on children's early-onset antisocial behavior problems because these are associated with lifelong and pervasive mental (Moffitt, Caspi, Harrington, & Milne, 2002), physical (Farrington & Junger, 1995), economic (Caspi, Wright, Moffitt, & Silva,

Avshalom Caspi, Terrie E. Moffitt, and Julia Kim-Cohen, Social, Genetic and Developmental Psychiatry Research Centre, Institute of Psychiatry, King's College London, London, England, and Department of Psychology, University of Wisconsin—Madison; Julia Morgan, Michael Rutter, Alan Taylor, Louise Arseneault, Lucy Tully, Catherine Jacobs, and Monica Polo-Tomas, Social, Genetic and Developmental Psychiatry Research Centre, Institute of Psychiatry, King's College London, London, England.

The Environmental Risk (E-Risk) Longitudinal Twin Study is funded by the Medical Research Council. Terrie E. Moffitt is a Royal Society-Wolfson Research Merit Award holder.

We are grateful to the E-Risk Study mothers and fathers, the twins, and the twins' teachers for their participation. Our thanks go to Robert Plomin for his contributions, to Thomas Achenbach for kind permission to adapt the Child Behavior Checklist, to Hallmark Cards for their support, and to members of the E-Risk Study team for their dedication, hard work, and insights.

Correspondence concerning this article should be addressed to Terrie E. Moffitt, Social, Genetic and Developmental Psychiatry Research Centre, Institute of Psychiatry, Box PO 80, De Crespigny Park, London SE5 8AF, England. E-mail: t.moffitt@iop.kcl.ac.uk

1998), and interpersonal (Moffitt et al., 2002) problems, the public-health burden of which is enormous (Potter & Mercy, 1997). Theories about the origins of these early-emerging individual differences implicate parenting (Snyder, Reid, & Patterson, 2003), but whether specific parenting attitudes and behaviors have true environmental effects on children's development is, in fact, contested on empirical grounds (Rowe, 1994; Scarr, 1992). Nevertheless, twin and adoption studies have noted that variation in children's antisocial behavior problems is influenced by nonshared environmental factors (Rhee & Waldman, 2002). Peers and friends have been emphasized as potential nonshared environments for adolescents (Harris, 1998). However, because our interest is in antisocial behavior problems that emerge in early childhood, we hypothesized that the emotional attitudes directed by mothers toward their offspring represent critical contexts for children's development, long before experiences outside the home come into play.

The study of emotional attitudes (e.g., criticism, warmth) directed at specific family members has a long history in adult psychiatry (Brown & Rutter, 1966; Rutter & Brown, 1966). Expressed emotion, measured by the Camberwell Family Interview (CFI; Vaughn & Leff, 1976) and the Five-Minute Speech Sample (FMSS; Magana, Goldstein, Karno, Miklowitz, & Falloon, 1986), predicts relapse among schizophrenics and prognosis in several other adult psychiatric disorders (Butzlaff & Hooley, 1998). In more recent years, the study of expressed emotion has been extended downward to focus on childhood disorders, using child-appropriate versions of the CFI and FMSS protocols (Vaughn, 1989). Mothers of children with behavioral disorders have been observed to express more critical comments, fewer positive com-

ments, and less warmth toward their children than have control parents (e.g., Asarnow, Tompson, Hamilton, Goldstein, & Guthrie, 1994; Asarnow, Tompson, Woo, & Cantwell, 2001; Hibbs et al., 1991; Hirshfeld, Biederman, Brody, Faraone, & Rosenbaum, 1997; McCarty & Weisz, 2002; Peris & Baker, 2000; Richman, Stevenson, & Graham, 1982; Schwartz, Dorer, Beardslee, Lavori, & Keller, 1990; Scott & Campbell, 2001; Stubbe, Zahner, Goldstein, & Leckman, 1993; Vostanis & Nicholls, 1995; Vostanis, Nicholls, & Harrington, 1994). In these studies, mother-child pairs from different families have been compared to each other. However, on their own, correlations from such "between-families, 1-child-per-family" research designs do not demonstrate that maternal attitudes are causes of children's behavior problems, because other risk factors vary across families (e.g., low social class, marital discord, maternal psychopathology). These third variables, which differ across families for both environmental and genetic reasons, may account for the correlation between maternal emotional attitudes and children's behavior problems.

As shown in Figure 1, socialization researchers have tried to overcome this inferential limitation of "between-families" research designs by increasingly making use of "within-family, 2-children-per-family" designs. The hypothesis is that if maternal treatment is a risk factor for children's behavior problems, nonshared (or child-specific) maternal treatment should be associated with behavioral differences between siblings growing up within the same family. Typically, these studies examine the relation between nonshared environmental experiences and sibling outcomes using difference-score models or residualized-score models. For example, the difference-score model uses two sibling-difference variables. The first variable reflects differences in the siblings' expe-

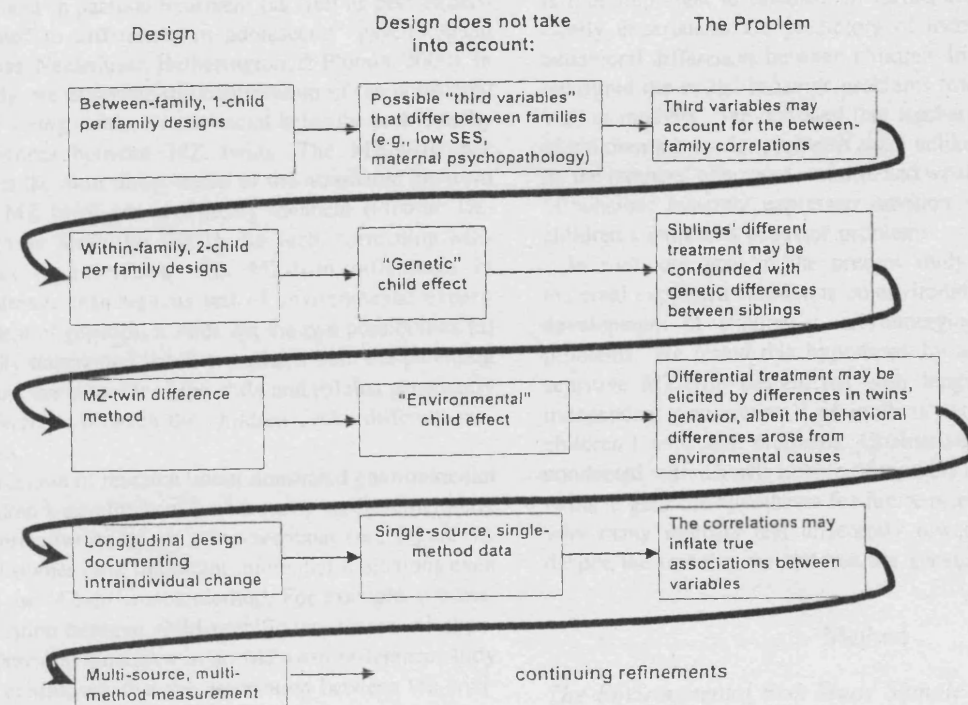


Figure 1. How successive improvements in research design can overcome inferential limitations in non-experimental studies of the effects of maternal treatment on children's behavior problems.

ences (e.g., differential maternal negativity). The second variable reflects differences in the siblings' behavioral outcome (e.g., antisocial behavior problems). The correlation between the two difference scores reflects the contribution of nonshared experiences to the creation of sibling outcome differences, independent of factors that differ between families (Rovine, 1994).

However, three additional methodological challenges have impeded progress in identifying whether specific nonshared environmental experiences actually account for behavioral differences between children growing up in the same family. First, many of the "2-children-per-family" studies have not incorporated the inferential leverage afforded by genetically informative designs (Turkheimer & Waldron, 2000). The problem is that to the extent that children's genetically influenced behavior problems evoke different maternal treatment, siblings' different treatment will be confounded with genetic differences between the children (Plomin, 1994). It is thus unknown whether the association between nonshared environmental experiences and behavioral differences between children in the same family reflects an environmental effect or a genetic child effect, which will arise if children's heritable characteristics evoke different treatment (see Figure 1). For this reason, researchers have increasingly made use of, or initiated, genetically informative studies to examine nonshared-environment effects. For example, Rodgers, Rowe, and Li (1994) turned the National Longitudinal Study of Youth into a genetically informative study (using twin, full-sib, half-sib, and cousin pairs) in order to test the hypothesis that differences in parental behavior (e.g., spanking) are related to differences in 5- to 11-year-old children's behavior problems. The Nonshared Environment and Adolescent Development (NEAD) project has studied the differential experiences of MZ and dizygotic (DZ) twins, full siblings, half siblings, and genetically unrelated siblings in order to test hypotheses about whether differences in parental treatment (as well as peer experiences) are related to differences in adolescents' psychological adjustment (Reiss, Neiderhiser, Hetherington, & Plomin, 2000). In the present study, we estimated the contribution of the nonshared environment to young children's antisocial behavior problems by studying differences between MZ twins. The MZ-difference method provides the most direct index of the nonshared environment, because MZ twins are genetically identical (Plomin, DeFries, McClearn, & McGuffin, 2001). As such, correlating MZ-twin differences in experience with MZ-twin differences in outcome is a strong, unambiguous test of environmental experiences independent of genetics: it rules out the two possibilities (a) that a genetically transmitted liability explains both the parenting of the mother and the behavior of the child and (b) that genetically influenced differences between the children evoke different maternal treatments.

A further limitation of research about nonshared environmental effects on children's development is that many studies, including genetically informative ones, are cross-sectional (see Figure 1). Cross-sectional studies have important inferential limitations even when they use the MZ-difference method. For example, a cross-sectional association between child-specific environmental experiences and behavioral outcomes in an MZ-twin difference study suggests, with confidence, that the association between the environmental variable and the child's behavior is not genetically mediated (because MZ twins are genetically identical). However, observing this association does not rule out the possibility of an

environmental child effect, that is, that differential treatment is elicited by differences in the twins' behavior even though these behavioral differences arose from environmental, not genetic, causes. In the present study, we tested whether differences in the expressed emotion that children received at the age of 5 years would predict differences between the children's antisocial behavior problems measured later at the age of 7 years, over and above any continuity in children's antisocial behavior problems from age 5 to age 7. Documenting that maternal expressed emotion is associated with within-individual (and within-pair) increases in antisocial behavior problems is one important (nonexperimental) test of a true environmental risk (Rutter, Pickles, Murray, & Eaves, 2001).

A final limitation of research about nonshared environmental effects is that many studies, including longitudinal ones, rely on the same source (e.g., the mother) to provide information about both the environmental experience and the behavioral outcome of interest. The resulting single-method correlations (see Figure 1) may inflate true associations between variables (Bank, Dishion, Skinner, & Patterson, 1990). With notable exceptions (e.g., Deater-Deckard et al., 2001; Reiss et al., 2000), few studies have examined associations between siblings' differential experiences and differential outcomes by measuring experience and outcome from different sources. Often, studies that have done so have found that correlations between differential experiences and differential behavioral outcomes that are moderate when within-source data are used drop to negligible when across-source data are used (Pike, Reiss, Hetherington, & Plomin, 1996). This drop raises the question of whether the putative differential experience effects are an artifact of single-source measurement (e.g., a mother's negativity toward a child may lead her to exaggerate that child's behavior problems but may not affect the child's actual behavior at all). It is thus important to establish in further research that nonshared family experiences are predictors of independently ascertained behavioral differences between children. In the present study, we measured the twins' behavior problems from teachers' reports as well as mothers'. We reasoned that teachers' independent reports of children's behavior problems were unlikely to be contaminated by the mothers' expressed emotion and would provide a strong test of whether maternal expressed emotion is, in fact, related to children's antisocial behavior problems.

In sum, our goal in the present study was to test whether maternal expressed emotion is an environmental risk factor in the development of children's early-emerging antisocial behavior problems. We tested this hypothesis by using (a) a genetically sensitive MZ-twin design, (b) with longitudinal data, and (c) independent measurements of mothers' expressed emotions and children's antisocial problems. Qualitative interviews were also conducted with a small sample of mothers of very discordant MZ twins to generate hypotheses for future research into the puzzle of why many mothers feel differently toward their twin children despite the fact that the children are genetically identical.

Method

The Environmental Risk Study Sample

Participants are members of the Environmental Risk (E-Risk) Longitudinal Twin Study, which investigates how genetic and environmental

factors shape children's development. The study follows an epidemiological sample of families with young twins who were interviewed in the home when the twins were 5 and 7 years of age. The E-Risk Study sampling frame consisted of two consecutive birth cohorts (1994 and 1995) in a birth register of twins born in England and Wales (Trouton, Spinath, & Plomin, 2002). Of the 15,906 twin pairs born in these 2 years, 71% joined the register. Our sampling frame excluded opposite-sex twin pairs and began with the 73% of families in the register who had same-sex twins.

The E-Risk Study sought a sample size of 1,100 families to allow for attrition in future years of the longitudinal study while retaining statistical power. An initial list of families was drawn from the register to target for home visits, with a 10% oversample to allow for nonparticipation. The probability sample was drawn using a high-risk stratification sampling frame. High-risk families were those in which the mother gave birth for the first time when she was 20 years of age or younger. We used this sampling (a) to replace high-risk families who were selectively lost to the original register via nonresponse and (b) to ensure sufficient base rates of problem behaviors given the low base rates expected for 5-year-old children. Early first childbearing was used as the risk-stratification variable because age of childbearing was recorded for virtually all families in the register, it is relatively free of measurement error, and it is a known risk factor for children's problem behaviors (Maynard, 1997; Moffitt & E-Risk Study Team, 2002). The sampling strategy resulted in a final sample in which two thirds of E-Risk Study mothers accurately represent all mothers in the general population (ages 15–48 years) in England and Wales in 1994–1995 (estimates derived from the General Household Survey; Bennett, Jarvis, Rowlands, Singleton, & Haselden, 1996). The other one third of E-Risk Study mothers (younger only) constitute a 160% oversample of mothers who were at high risk on the basis of their young age at first childbirth (15–20 years). To provide unbiased statistical estimates that can be generalized to the population, we corrected the tests reported in this article with weighting to represent the proportion of young mothers in the United Kingdom (Bennett et al., 1996).

Of the 1,203 families from the initial list who were eligible for inclusion, 1,116 (93%) participated in home-visit assessments when the twins were 5 years old, forming the base sample for the study; 4% of families refused, and 3% were lost to tracing or could not be reached after many attempts. Teachers returned questionnaires on the children's behavior for 94% of the cohort children. Zygosity was determined using a standard zygosity questionnaire that has been shown to have 95% accuracy (Price et al., 2000). Ambiguous cases were zygosity-typed using DNA. The sample included 56% MZ and 44% DZ twin pairs. Sex was evenly distributed within zygosity (49% male).

A follow-up home visit was conducted 18 months after the twins' age 5 assessment when they were 6½ years old on average (range = 6.0 to 7.0 years). Follow-up data were collected for 98% of the 1,116 E-Risk Study families. At this follow-up, teacher questionnaires were obtained for 91% of the 2,232 E-Risk Study twins (93% of those taking part in the follow-up). Hereafter, for simplicity's sake, this follow-up is referred to as the age 7 assessment. In both the age 5 and age 7 assessments, families were given shopping vouchers for their participation, and children were given coloring books and stickers. All research workers had university degrees in behavioral science and experience in psychology, anthropology, or nursing.

The present study reports on MZ-twin pairs: data were obtained from mothers for 622 pairs at age 5 and 606 pairs at age 7 and from teachers for 580 pairs at age 5 and 563 pairs at age 7.

Maternal Expressed Emotion

The measurement of expressed emotion in developmental psychopathology is distinguished by four key features: (a) It focuses on individual-specific expressed emotions (i.e., individual with respect to both the person expressing the emotion and the child receiving it); (b) it refers to emotions observed in the manner in which an adult talks about a child, rather than by

answers to specific closed-ended questions; (c) it uses both verbal and vocal elements in rating emotions (that is, both *what* is said and the *tone* of voice used); and (d) it focuses on emotions about the child as an individual, rather than on emotions concerned with a child's symptoms.

The E-Risk Study uses a novel approach to scoring expressed emotion given concerns that have been raised about the developmental inappropriateness of the standard scoring protocol originally developed for studies of adult psychiatric patients (e.g., Daley, Sonuga-Barke, & Thompson, 2003; McCarty & Weisz, 2002; Sandberg, Rutter, & Jarvi, in press). Specifically, we used a 5-min speech sample to elicit expressed emotion about each child. Trained interviewers asked caregivers to describe each of their children ("For the next 5 minutes, I would like you to describe [child] to me: what is [child] like?"). The mother was encouraged to talk freely with few interruptions. However, if the mother found this difficult, the interviewer could aid the mother with a series of semistructured probes, such as "In what ways would you like [child] to be different?" Interviews about each twin were separated in time by approximately 90 min. All interviews were audiotaped with the mother's consent. Data for expressed emotion were missing for 9% of the sample because some mothers did not wish to be audiotaped or because of technical problems with the tape.

Two trained raters coded the audiotapes according to guidelines adapted from the FMSS scoring manual and modified for use with preschool children (see also Daley et al., 2003; Sandberg et al., in press). The raters underwent 2 weeks of training about coding expressed emotion. Interrater reliability was established by having the raters individually code audiotapes describing 40 children. The same rater coded both twins in the same family. The rater was blind to all other E-Risk Study data. We examined four variables coded from the 5-min speech sample: number of positive comments, number of negative comments, negativity, and warmth. Additional information about the measurement, reliability, and concurrent validity of maternal expressed emotion is reviewed by Sandberg et al. (in press).

Positive comments. Raters counted all positive comments made during the interview about the child. A positive comment was defined primarily by its content. However, because a comment can be given a variety of meanings by its tone, tone of voice was taken into account in determining whether a comment was positive or not. For example, "She's so nice" could be said sarcastically. Tone alone never defined a positive remark but was used to clarify the content of the comment. For example, "He's so forgetful" could be said with warmth and tenderness but would not be considered a positive comment. The majority of positive comments counted were descriptive words indicating the possession of a positive trait (e.g., intelligent, loving, mature, sociable, creative, helpful). However, some mothers with poor vocabulary tended to talk around these issues rather than rely on single descriptors. For example, the statement, "He always wants to wash up and things, to do things for you," was counted as a positive comment. In addition, qualities that the mother clearly valued were counted as positive comments (e.g., "She always listens"). Statements not qualifying as positive included comments phrased in the negative (e.g., "She's not as bad as the other one"), qualified compliments (e.g., "He's quite good"), and statements made in the past tense. The interrater agreement (r) was .63.

Negative comments. Raters counted all negative comments made during the interview about each child (e.g., "She is horrible," "I don't like her," "She is so lazy," "She is so clumsy"). To be counted as a negative comment, both the tone and the content of the comment had to be negative. This criterion was used to ensure that coders did not penalize mothers for their turns of phrase. For example, comments such as "She is a right little madam" or "He's a right little sod" were often said with affection and warmth. These would not have been counted as negative comments unless the tone in which they were said was also negative. Comments such as "She is not a good sleeper" or "He is a fussy eater," although not negative in their own right, were counted as negative comments when the mother repeatedly and disparagingly defined her child, throughout the interview, in

MONOZYGOTIC-TWIN DIFFERENCES

terms of his or her inability to sleep or fussiness over food. The interrater agreement was .90.

Negativity. Negativity was a global measure used to describe the whole speech sample. The 6-point rating scale refers to the negativism expressed in the interview about the child: *No negativity* (0) was coded when the mother made no negative comments about the child. *A little negativity* (1) was coded when the mother made one minor criticism such as "She is lazy." *Some negativity* (2) was coded when the mother made two criticisms that were stronger in tone than the former rating. The next three codes were considered present when maternal negativity was generalized to the child himself or herself rather than against particular behaviors or attributes. These ratings were used when the tone and content of the interview were primarily negative. *Negative—some dissatisfaction* (3) was coded when the mother repeatedly mentioned one or two particular traits of the child that she did not like and wished to change, for example, "She is not very clever; it would help if she tried more, but she doesn't; I wish she would try more, like her sister." This was the general theme of this particular expressed emotion interview with the mother, and it was thus rated a 3. *Negative—makes disparaging remarks and finds fault with the child* (4) was coded when the mother had very little good to say about her child and found fault in almost everything he or she did, for example, "She always does it; I have never met such a clumsy child; we think 'Oh here we go again, she's done it again'; it drives me mad; why doesn't she look where she is going? I'm constantly having to look out for her; she's constantly breaking things . . . sometimes I think she is stupid, she never learns." *Resentful and hostile* (5) was coded when the mother gave the impression that she actively disliked the child. The interview would take the form of a stream of negativity against the child, with no positive comments, for example, "I wish I had never had her . . . she's a cow, I hate her." The interrater agreement for negativity was .84.

Warmth. Warmth was another global measure of the whole speech sample. The scale refers only to the warmth expressed in the interview about the child. The warmth of the respondent's personality was not a consideration, nor was warmth shown toward others. Positive comments in themselves were not viewed as evidence of warmth, nor were stereotyped endearments. Warmth was assessed by the tone of voice, spontaneity (e.g., "She is so funny—the other day she made up a song and she was dancing and singing in the garden . . . the song was about everything . . . a butterfly flew by and that ended up in the song . . . it was so sweet."), sympathy and/or empathy toward the child (e.g., "I feel really sorry for her, it is not her fault . . . I worry for her."). Warmth was coded on a 6-point scale. *High warmth* (5) and *moderately high warmth* (4) were coded when there was definite and clear-cut tonal warmth, enthusiasm, interest in, and enjoyment of the child. For example, "She is a delight, she is so happy, I love taking her out, she is my ray of sunshine" was coded as a 5. *Moderate warmth* (3) was coded when there was definite understanding, sympathy, and concern but only limited warmth of tone, for example, "I worried about her when she went to school, I thought she may have difficulty in mixing, and I felt sorry for her." *Some warmth* (2) was coded when the mother showed a detached, rather clinical approach and little or no warmth of tone, but moderate understanding, sympathy, and concern. For example, an interview with comments along the lines of "She's alright" with little substantiation would have received this rating. *Very little warmth* (1) was rated when there was only a slight amount of understanding, sympathy, concern, enthusiasm about, or interest in the child. *No warmth* (0) was reserved for mothers who showed a complete absence of the qualities of warmth as defined. The interrater agreement for warmth was .90. Table 1 shows the correlations among the four expressed emotion measures.

Children's Antisocial Behavior Problems

Antisocial behavior problems were assessed at ages 5 and 7 with the Achenbach family of instruments: the Child Behavior Checklist (Achenbach, 1991a) and the Teacher Report Form (Achenbach, 1991b). The

Table 1
Correlations Between Maternal Expressed Emotion When Children Were 5 Years Old

Maternal expressed emotion variables	1	2	3	4
1. No. of negative comments	—	0.83	-0.24	-0.46
2. Negativity		—	-0.45	-0.62
3. No. of positive comments			—	0.63
4. Warmth				—

Note. All correlations are significant at $p < .01$. $N_s = 1,123-1,130$.

externalizing syndrome reported in this article is the sum of items in the Delinquent Behavior and Aggressive Behavior scales; the internal consistency reliabilities of the parent and teacher reports of antisocial behavior problems were $> .90$. The cross-informant (parent-teacher) correlations (see Table 2) for antisocial behavior problems ranged from .31 to .43, which is consistent with published results about the assessment of childhood psychopathology (van der Ende, 1999). The longitudinal correlations (see Table 2) ranged from .54 to .68, a range consistent with published results about the continuity of antisocial behavior problems (Moffitt, Caspi, Rutter, & Silva, 2001).

Results

Results are presented in four parts. First, we tested whether maternal expressed emotion was associated with children's antisocial behavior problems. Second, we documented that there were similarities and differences within MZ-twin pairs in the emotions expressed toward them by their mothers and in their behavior problems. Third, we tested whether differences between MZ twins in maternal expressed emotion were associated with differences between MZ twins in antisocial behavior problems. Fourth, we present data from the qualitative interviews to generate hypotheses for future research about why many mothers feel differently toward their twin children despite the fact that the children are genetically identical.

Is Maternal Expressed Emotion Associated With Children's Antisocial Behavior Problems? A Comparison Between Children in Different Families

Table 3 shows the correlations between the maternal expressed emotion variables and children's antisocial behavior problems. In these analyses, the individual child was the unit of analysis.¹

Maternal expressed emotion was significantly correlated with children's antisocial behavior problems, both cross-sectionally (when the children were 5 years old) and longitudinally (when the children were 7 years old), when rated by mothers but also when rated by teachers, whose ratings were not confounded with maternal expressed emotion.

¹ Reported significance tests are based on the sandwich, or Huber/White, variance estimator (Gould & Sribney, 1999), a method available in STATA 7.0 (StataCorp, 2001). Application of this technique addresses the assumption of independence of observations. It adjusts estimated standard errors and therefore accounts for the dependence in the data that is due to analyzing sets of twins.

Table 2
Correlations Between Mothers' and Teachers' Reports of Children's Antisocial Behavior Problems at Ages 5 and 7 Years

Rating	1	2	3	4
Age 5				
1. Mothers' ratings	—	<u>0.31</u>	0.68	0.30
2. Teachers' ratings		—	0.36	0.54
Age 7				
3. Mothers' ratings			—	<u>0.43</u>
4. Teachers' ratings				—

Note. Cross-source (cross-sectional) correlations are underlined; longitudinal (within-source) correlations are shown in bold. All correlations are significant at $p < .01$. $N_s = 1,060-1,130$.

Table 3 also shows the results of longitudinal regression analyses predicting intraindividual changes in antisocial behavior problems from ages 5 to 7 as a function of maternal expressed emotion at age 5. At the first step, we entered children's antisocial behavior problems at age 5, and at the second step, we entered maternal expressed emotion assessed when the children were 5 years old. The significant expressed emotion effect documented that maternal expressed emotion at age 5 accounted for variance in children's antisocial behavior problems at age 7 over and above any continuity from age 5 to age 7 antisocial behavior problems, thus ruling out the possibility that the lasting effect of maternal expressed emotion reflected nothing more than a child effect (i.e., prior child behavior evoking maternal expressed emotion). This longitudinal effect was replicated using both mothers' and teachers' reports of children's antisocial behavior problems.

Similarities and Differences in How MZ Twins Are Treated and in Their Behavior Problems

Table 4 shows the correlations between MZ twins in their antisocial behavior problems. MZ twins were very similar in their antisocial behavior problems, whether seen through the eyes of their parents or their teachers. Although genetically identical (MZ)

Table 3
Cross-Sectional and Longitudinal Associations Between Maternal Expressed Emotion (at Age 5) and Children's Antisocial Behavior Problems (at Ages 5 and 7). According to Mothers' and Teachers' Ratings of Antisocial Behavior Problems

Maternal expressed emotion variables (age 5)	Antisocial behavior problems					
	Mothers' ratings			Teachers' ratings ^c		
	Cross-sectional r (at age 5) ^a	Longitudinal r (at age 7) ^a	β at age 7, controlling for age 5 behavior problems ^b	Cross-sectional r (at age 5) ^a	Longitudinal r (at age 7) ^a	β at age 7, controlling for age 5 behavior problems ^b
No. of negative comments	.46**	.39**	.10**	.18**	.18**	.08*
Negativity	.47**	.39**	.09**	.16**	.14**	.06*
No. of positive comments	-.22**	-.13**	.02	-.06*	-.09**	-.06
Warmth	-.35**	-.27**	-.04	-.14**	-.14**	-.07*

Note. $N_s = 1,025-1,130$, depending on the analysis.

^a This column shows Pearson correlations. ^b This column shows standardized regression coefficients from ordinary-least squares hierarchical regression analyses in which children's antisocial behavior problems at age 5 were entered at the first step and maternal expressed emotion at age 5 was entered at the second step. ^c Different teachers rated the children at ages 5 and 7.

* $p < .05$. ** $p < .01$.

Table 4
Intrapair Correlations Indexing Similarity Between MZ Twins in Their Antisocial Behavior Problems and in Their Maternal Treatment

Variable	r
Children's antisocial behavior problems	
Mother ratings (age 5)	.66**
Mother ratings (age 7)	.68**
Teacher ratings (age 5)	.76**
Teacher ratings (age 7)	.70**
Maternal expressed emotion (age 5)	
No. of negative comments	.06*
Negativity	.19**
No. of positive comments	.41**
Warmth	.65**

Note. N (pairs) = 565-622.

* $p < .05$. ** $p < .01$.

twins resembled each other behaviorally, they were not phenotypically identical. Approximately one quarter to one third of the variance in the children's antisocial behavior problems could be ascribed to nonshared environmental factors (plus measurement error) ($1 - .66 = .34$ according to mothers' ratings at age 5, and $1 - .68 = .32$ at age 7; $1 - .76 = .24$ according to teachers' ratings at age 5, and $1 - .70 = .30$ at age 7).

Table 4 also shows the correlations between MZ twins in their mother's expressed emotion toward them. On the whole, many E-Risk Study mothers expressed different emotional attitudes toward their MZ twins. This allowed for the possibility that differences in maternal expressed emotion might account, in part, for the behavioral differences observed between children.

Are Differences in Maternal Expressed Emotion Related to Behavioral Differences Between MZ Twins Reared in the Same Family?

Table 5 shows the correlations between MZ-twin differences in maternal expressed emotion and MZ-twin differences in antisocial

MONOZYGOTIC-TWIN DIFFERENCES

Table 5
Cross-Sectional and Longitudinal Associations Between MZ-Twin Differences in Maternal Expressed Emotion (at Age 5) and MZ-Twin Differences in Antisocial Behavior Problems (at Ages 5 and 7), According to Mothers' and Teachers' Ratings of Antisocial Problems

MZ-twin differences in maternal expressed emotion	MZ-twin differences in antisocial behavior problems					
	Mothers' ratings			Teachers' ratings ^c		
	Cross-sectional <i>r</i> (at age 5) ^a	Longitudinal <i>r</i> (at age 7) ^a	β at age 7, controlling for MZ-twin differences at age 5 ^b	Cross-sectional <i>r</i> (at age 5) ^a	Longitudinal <i>r</i> (at age 7) ^a	β at age 7, controlling for MZ-twin differences at age 5 ^b
No. of negative comments	.53**	.35**	.16**	.14**	.18**	.15**
Negativity	.49**	.33**	.16**	.17**	.15**	.10*
No. of positive comments	-.22**	-.20**	-.11**	-.13**	-.15**	-.12**
Warmth	-.28**	-.23**	-.11**	-.10*	-.12**	-.10*

Note. *N* (pairs) = 500-565, depending on the analysis.

^a This column shows Pearson correlations. ^b This column shows standardized regression coefficients from ordinary least squares hierarchical regression analyses in which MZ-twin differences in antisocial behavior problems at age 5 were entered at the first step and MZ-twin differences in maternal expressed emotion at age 5 were entered at the second step. ^c Different teachers rated the children at ages 5 and 7.

* $p < .05$. ** $p < .01$.

behavior problems. In these analyses, the MZ-twin pair is the unit of analysis.

Table 5 shows that differences in mothers' expressed emotion toward their 5-year-old MZ twins were significantly correlated with differences between the MZ twins' behavior problems, both cross-sectionally (when the children were 5 years old) and longitudinally (when the children were 7 years old). The significant associations between differences in maternal expressed emotion and differences in the twins' behavior were observed regardless of whether mothers or teachers rated the children.

To summarize the quantitative findings, Figure 2 shows the mean scores at age 7 for children's antisocial behavior problems as a function of whether a child was the more or the less favored twin in the MZ pair. The less favored twin at age 5 (i.e., the one receiving more maternal negativity and less maternal warmth) had more antisocial behavior problems at age 7 than did the more favored twin.

Table 5 also shows the results of regression analyses predicting behavioral differences between MZ twins at age 7 as a function of differences in their mother's expressed emotion toward them when they were 5 years old, after controlling for age 5 behavioral differences within the twin pair. At the first step, we entered MZ-twin differences in antisocial behavior problems at age 5, and at the second step, we entered MZ-twin differences in maternal expressed emotion at age 5. The significant effect of MZ-twin differences in maternal expressed emotion documented that differences in a mother's expressed emotion toward her identical twins at age 5 predicted that the twins would continue to differ at age 7, over and above any continuity from age 5 to age 7 in behavior problems. This longitudinal effect was replicated when both mothers' and teachers' reports of children's antisocial behavior problems were used.

The analyses in Table 5—based as they are on predicting behavioral differences between genetically identical (MZ) twins—effectively rule out the possibility that genetically influenced differences between the twins contributed to their differential treatment. In addition, the longitudinal analyses—documenting that

differences in maternal expressed emotion are associated with increasing within-pair differences between the twins—suggest that maternal expressed emotion may be causally linked to children's antisocial behavior problems. Still, even these analyses do not entirely rule out the possibility that some earlier, nongenetically influenced difference between the twins produced differences in maternal expressed emotion and in the twins' increasingly diverging antisocial behavior problems. In further analyses, we asked if twin differences in neurological status might account for the association between differential maternal expressed emotion and twin differences in antisocial behavior. Specifically, we used birth weight to index each twin's neurological status (because this difference was most clearly present before both maternal expressed emotion and children's antisocial problems). Within-pair analyses showed that the twin who weighed less at birth received, at age 5, more negative comments ($r = .19, p < .01$), more negativity ($r = .15, p < .01$), fewer positive comments ($r = -.15, p < .01$), and less warmth ($r = -.14, p < .01$). We then repeated all the analyses in Table 5, controlling for twin differences in birth weight. The results were unchanged (an additional table is available from the authors). As an illustration, consider the most conservative test of an environmentally mediated association reported in this article: this appears in the final column of Table 5. When we controlled for MZ-twin differences in birth weight, the regression coefficients in that column changed to the following: $\beta = .16, p < .01$; $\beta = .11, p < .05$; $\beta = -.13, p < .01$; $\beta = -.10, p < .05$.²

Why Do Some Mothers Feel Differently Toward Their Twins? A Qualitative Inquiry

The aforementioned quantitative findings raised the question of why many mothers felt differently toward their twin children

² Following a reviewer's suggestion, we tested whether the association between differential maternal expressed emotion and twin differences in antisocial behavior was nonlinear. None of the quadratic effects that we tested was statistically significant.

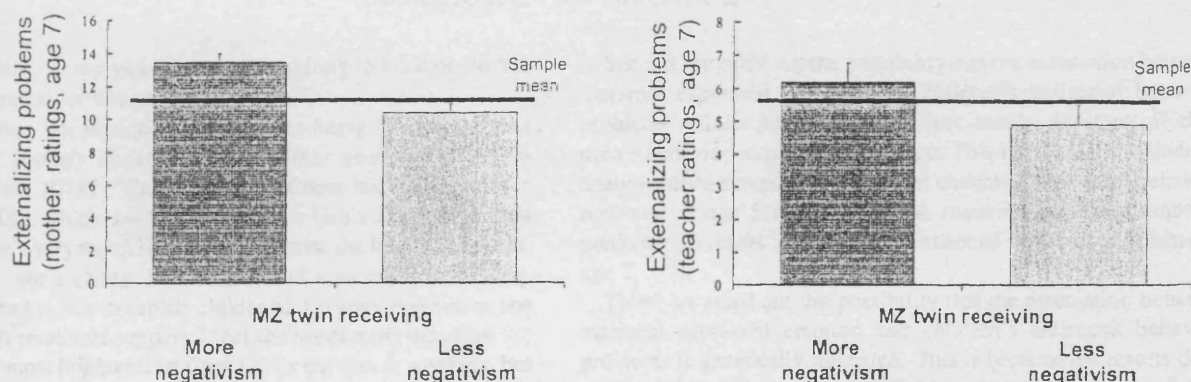


Figure 2. The monozygotic (MZ) twin receiving more maternal negativity at age 5 has more antisocial behavior problems at age 7. A principal-components analysis of the four maternal emotional attitude variables yielded one factor accounting for 72% of the variance. The positive loadings for number of negative comments and negativity, and the negative loadings for number of positive comments and warmth, suggest that the four expressed emotion measures index a mother's orientation toward her child along a continuum from warmth to negativism/hostility. For illustrative purposes in this figure, twins within a pair were designated as receiving more or less negativity depending on a difference score between them. The figure shows means and standard errors among twin pairs for whom the MZ-twin difference in treatment was greater than 0.5 *SD*.

despite the fact that the children were genetically identical. To generate hypotheses for future research, we carried out a qualitative assessment that aimed to uncover possible reasons for differential treatment. Our team of interviewers (who together completed more than 2,000 E-Risk Study home visits) generated an initial list of hypothesized causes for differential treatment of MZ twins. This list of provisional hypotheses was used to guide an open-ended interview protocol we conducted with E-Risk Study mothers of very different MZ twins. We selected seven E-Risk Study families for these qualitative interviews on the basis of MZ zygosity, proximity to London (to reduce travel costs), a twin-pair difference on antisocial behavior problems that was greater than 1 *SD* above the mean difference, and extreme discordance corroborated by the twins' teachers. The mothers were told that the purpose of this visit was to focus on why identical twins can sometimes be so different. The protocol was organized by developmental stages, first discussing differences in the 1st year of life (example probe: "Was one of the twins more difficult to care for as a newborn?"), then the toddler years from ages 1 to 4 (example probe: "Did either twin become closer to one person in your family?"), and finally the current years since starting schooling (example probe: "Can you see similarities between their personalities and other family members' personalities?"). (The interview protocol is available from the authors.) Interviews were audiotaped and converted to transcripts, which the research team read to identify possible causes for differential treatment. Because reasons for differential treatment might be idiosyncratic, we did not look for consensus across the families. However, the following four explanations for differential treatment emerged as major themes. Names have been changed for confidentiality.

One twin has been ill, requiring differential parenting. Case 6300: "Ann had all the blood and Susan didn't get any . . . they took Ann away and put her in special care . . . and when she came out I was terrified of her. I remember the first night I had to change her nappy. I was scared if I pulled her legs they'd fall

off." Case 10735: "When they were born and I saw them, I just felt they had different personalities, I don't know, like Gill was the first one I could hold, 'cos the other one had to have oxygen and stuff and had to be left." Case 13569: "He was in hospital and everyone was all 'poor Jeff, poor Jeff,' and I started thinking, 'Well what about me? I'm the one's just had twins. I'm the one's going through this, he's a seven-week-old baby and doesn't know a thing about it' . . . I suppose, like a mother bonds with a baby? I never did with him . . . because of Jeff being unwell, I sort of detached, and ploughed my emotions into Mike." Case 4959: "Simon was just so much easier to get, you know, used to, 'cos he didn't have so many problems. Simon came out of special care a long time before John." Illness was not systematically related to the direction of favoritism: some mothers were more negative and other mothers were less negative toward the child who had been ill.

The mother holds folk beliefs about twins (e.g., that one twin in a pair must be dominant, or one must be feminine and one masculine) and treats the twins consistently with her beliefs. Case 3462: "Alan will go and play rugby, and watch rugby, but Jimmy'd rather make cakes . . . Jimmy likes being pampered and the cuddles, but Alan's like 'Get off me!' He's a man's man. He's always had to speak for Jimmy." Case 6300: "Susan can be very sweet . . . she loves babies . . . she can be insecure . . . she flutters and dances around . . . there's not much between her ears . . . she's exceptionally vain, more so than Ann. Ann loves any game involving a ball, very sporty, climbs trees, very much a tomboy. One is a serious tomboy and one's a serious girlie girl. Even when they were babies I always dressed one in blue stuff and one in pink stuff." Case 3803: "Amy being more the tomboy, she's the one that'll get dirty, so it's sort of like Sally with the pretty, pretty little things, Amy with the boy things. Sally is the caring one, the shyest of the two. Amy has to be dominant for them both." Case 10735: "I think twins' personalities have to balance each other out, you know, they sort of have to come to some sort of arrangement

between them . . . my younger is more willing to back down and sit in, and my older likes to be in charge."

The mother has identified one twin as being like herself and feels more strongly about that twin (either positively or negatively). Case 10735: "Cari's more confident but it's more of a front with Gill, which is what I was like . . . Gill's a sweetie, a little madam, she's very much like me, she's quite the little bossyboots, like me . . . she's chatty, like me . . . Gill's so much like I was, because I had a very troubled childhood I wanna make sure she gets enough emotional support, I feel she needs more than Cari . . . Gill is a bit more brighter than Cari, Cari's not dim or anything, but Gill's more, well, like me, she's like, amazing." Case 3462: "Jimmy's got a bad sense of humor, like me, he's erm very much a Mummy's boy, it's nice, very nice." Case 13569: "The problem with Mike is I think he's a bit like me, he's very, very strong-headed . . . yeah, I think he's always been like me, more sort of abrupt [laughs], I'll sort of say what I think and then think about the consequences after . . . he's got to that stage where he just doesn't really care who he sort of hurts and he doesn't think about the consequences after, that's it." Case 3803: "Sally's more like me, she thinks about things, they're both me but she's, I mean, me."

The mother, whose relationship with the twins' father has ended acrimoniously, identifies one twin as representing her ex-partner and directs negative feelings toward that twin. Case 13569: "Jeff and his dad really relate to each other. We all knew Don [her husband] had a connection with Jeff and I had a connection with Mike . . . Jeff would do everything for Don but he wouldn't for me, and no matter what I did for either of them it wouldn't be right." Case 3462: "Oh we've had difficulty all the way through, yeah, because when I first woke up he had an affair . . . and then when he went off, the twins were 18 months . . . he took me to court and he's got my kids at Christmas now . . . he keeps phoning the house and er, I tell him not to and he screams he can phone whoever he wants to phone, and er Jimmy don't want to go over there, but Alan's got interests with his dad, Alan's that close to him." Case 12623: "I think Jerry is more like me, laid back, and David's more like his father, more, erm, competitive, shall we say, yeah, he would lash out, that's how their dad was, and David takes after his dad, he'd be bullying and pushing in."

Discussion

This study showed that mothers' emotional attitudes toward their children are associated with children's antisocial behavior problems. To our knowledge, this study is the first to report three innovative design features that, in combination, support the conclusion that maternal expressed emotion is an environmentally mediated risk factor for—and possibly an environmental cause of—children's early-emerging antisocial behavior problems.

First, we ruled out the possibility that the empirical association between maternal expressed emotion and children's behavior problems reflects purely mothers' bias in talking about and describing their children. This is because the results documented that maternal expressed emotion was associated not only with mothers' ratings of their children's behavior problems but also with teachers' ratings, obtained independently from two different teachers, when each child was 5 years old and 7 years old.

Second, we ruled out the possibility that the association between maternal expressed emotion and children's antisocial behavior problems reflects purely a child effect, that is, an effect of children's behavior on parental treatment. This is because longitudinal analyses documented that even after children's antisocial behavior problems at age 5 were controlled, maternal expressed emotion predicted increases in children's antisocial behavior problems at age 7.

Third, we ruled out the possibility that the association between maternal expressed emotion and children's antisocial behavior problems is genetically mediated. This is because the results documented that differences in maternal expressed emotion predicted differences between genetically identical MZ twins. Given that differences in maternal expressed emotion reliably predict differences between the behavior of genetically identical children, it is highly unlikely that the association between maternal treatment and children's antisocial behavior problems is a function of genetic differences between children. This within-family comparison also ruled out the possibility that the association between maternal expressed emotion and children's behavior problems reflects unmeasured (genetic or environmental) differences between mothers or between families. This is because the results documented that differences in a mother's expressed emotion toward her children within the same family predicted behavioral differences between the children.

Against this background, several limitations should be noted. First, it is possible that some other nonshared environmental factor that is correlated with mothers' child-specific expressed emotion may be accounting for the associations we observed. Such a third variable would have to be a nongenetic factor that causes both (a) mothers to treat their children differently and (b) MZ twins to behave differently. We ruled out the possibility that differences in neurological status (as indexed by birth weight differences) produced the observed association between maternal expressed emotion and children's antisocial behavior problems, but there may be other, unmeasured factors. If such a factor can be identified, it would raise the possibility that maternal expressed emotion is not a unique cause of children's behavior problems, but it would not vitiate the fact that maternal expressed emotion is an environmentally mediated risk factor. Passive correlational designs—even longitudinal and genetically sensitive ones—cannot establish causality with certainty. As such, genetically informative intervention studies that seek to change maternal expressed emotion can be used, in future research, to more fully shed light on the causal status of maternal expressed emotion in relation to children's antisocial behavior problems (Howe, Reiss, & Yuh, 2002).

Second, we did not collect maternal expressed emotion data at the age 7 assessment, which could have been used to strengthen causal analyses. Moreover, such data would have allowed us to test whether initial differences between the twins' behavior could predict changes in the mother's expressed emotion over time. Given the utility of our new expressed emotion methodology as applied to this age group of children, future sibling studies may wish to incorporate such measures of maternal emotional attitudes in order to explore this question more fully.

Third, we assume that findings can be generalized from MZ twins to the population of singletons. This assumption is probably defensible because twin-singleton comparisons have found no notable differences in behavior problems or personality (Gjone &

Novik, 1995; Johnson, Krueger, Bouchard, & McGue, 2002; Kendler, Martin, Heath, & Eaves, 1995; Levy, Hay, McLaughlin, Wood, & Waldman, 1996; Moilanen et al., 1999; van den Oord, Koot, Boomsma, Verhulst, & Orleveke, 1995). Moreover, the correlations between maternal emotional attitudes and children's antisocial behavior problems in our twin sample are similar to those reported in the studies of singletons reviewed in the introduction.

Fourth, our data were collected in England and Wales, and more research is necessary to determine whether our findings will be replicated in other populations. However, research with singletons (reviewed in the introduction) suggests that the association between maternal expressed emotion and children's behavior problems is similar in North America and Europe.

Fifth, we have followed the twins in our study only to age 7, and we do not know whether maternal expressed emotion will exert longer term influences on children's development.

A sixth limitation concerns effect sizes, which ranged from large ($r = .5$) to small ($r = .1$) depending on the stringency of the method used. The true effect probably lies somewhere in between. What is remarkable, empirically, about the obtained results is that even if the "true" effect sizes tend toward the small, these effect sizes reflect true environmental associations purged of two factors that have inflated effects in many prior studies: single-source reporting bias and confounding genetic influence. In addition, it must be remembered that the findings are based on limited information about differential parenting (a 5-min speech sample). Aggregated measurements may yield larger effect sizes.

Finally, our measurement of differential expressed emotion was limited to mothers, and the measurement of fathers' expressed emotion may help to account for additional variation in children's differential outcomes. (The E-Risk Study has reported other effects of fathers on children; see Jaffee, Moffitt, Caspi, & Taylor, 2003.)

With these limitations in mind, the results of the present study have implications for socialization theory, in general, and for etiological research about children's early-emerging antisocial problems, more specifically.

Implications for Socialization Theory

In 1987, Plomin and Daniels revolutionized research on child development by asking "Why are children in the same family so different?" In the ensuing 15 years, over 40 studies have tackled this question, but reviewers have concluded that the yield from this research has been disappointing (Turkheimer & Waldron, 2000) for at least two reasons. One conclusion has been that the most important nonshared experiences are outside the family. This conclusion was championed by Harris (1998), who argued that "parents matter a lot less than you think" whereas peer experiences outside the family matter a lot more. According to Harris (1998), psychosocial researchers may need to invest less energy studying nonshared family experiences and more energy documenting how nonshared peer experiences create differences between children growing up in the same family. The present study suggests that such a shift in research priorities may be premature, as the results revealed that maternal expressed emotion is a consequential nonshared environmental experience that accounts for behavioral differences between children.

A second conclusion has been that nonshared experiences are too idiosyncratic and too serendipitous to study systematically. This conclusion was championed by Turkheimer (2000), who offered the "gloomy prospect" that psychosocial researchers may never identify the systematic sources of differences between children growing up in the same family because these differences are most likely created by random developmental processes. The present study suggests a less gloomy prospect because the results revealed that maternal expressed emotion is systematically related to children's antisocial behavior problems.

Implications for Research Into Children's Behavior Problems

Early-onset antisocial behavior problems threaten children's optimal development and have long-term negative consequences for the well-being of the individual child and the community (Potter & Mercy, 1997). Twin studies, including the present one, have shown that genetic factors exert a strong influence on antisocial behavior problems that emerge in early to middle childhood (Arseneault et al., 2003; Taylor, Iacono, & McGue, 2000; van den Oord, Verhulst, & Boomsma, 1996; van der Valk, Verhulst, Stroet, & Boomsma, 1998). But genetic factors cannot be the whole etiological story. This is most clearly evident when studying genetically identical MZ twins. The fact that pairs of MZ twins are discordant for early-onset antisocial behavior problems suggests that each child's unique environmental experiences may play a causal role in the development of these problems. This fact provides a window of opportunity for determining what these unique, nonshared environmental experiences might be.

It has become fashionable, in some circles, to suggest that maternal attitudes and behaviors are little more than genetic epiphenomena. Yet the present study suggests that maternal expressed emotion may play a causal role in the development of antisocial behavior. If this finding withstands the rigors of replication, it should invigorate both basic and applied research into expressed emotion. We suggest three directions for replications and extensions.

First, we encourage researchers to consider adopting and elaborating the expressed emotion methodology as a way to get a handle on differential parenting. Family researchers often note (off the record) that it is difficult to get parents to reveal through direct questioning that they treat their young children differently. Social desirability influences parents to report "fair treatment," perhaps particularly when the children are twins. The expressed emotion methodology, as adapted here for use with families of young children, may offer a suitable, unobtrusive technique for identifying meaningful patterns of differential parenting both between and within families.

Second, more research is needed if we are to understand the cognitive, affective, and possibly physiological mechanisms by which children are influenced by their mothers' expressed emotion toward them. Randomized clinical trials of parenting interventions that focus on enhancing mothers' levels of warmth, positive interaction, and responsiveness toward their children (e.g., Olds et al., 2002; Sanders, Markie-Dadds, Tully, & Bor, 2000; Webster-Stratton, 1998) offer a powerful design for uncovering the mechanisms by which maternal behavior causes antisocial behavior problems.

Third, more research is needed on expressed emotion as an outcome variable. Our quantitative findings naturally prompted a question: Why do many mothers feel differently toward their twin children despite the fact that the children are genetically identical? We conducted a modest qualitative study to address this puzzle, aiming to generate hypotheses for future research into the causes of differential parental treatment of siblings. Four hypotheses suggested themselves. First, illness in one child may require differential parenting and disrupt the parent-child bond. Children's health may influence maternal emotional attitudes and thus represent a source of differential treatment of siblings (e.g., McHale & Pawletok, 1992). It may be that it is not the fact of the illness itself, but the meaning of the child's illness, that is most relevant to mothers. Second, the mother may hold folk beliefs about differences between identical twins and may treat the twins consistently with these beliefs. E-Risk Study mothers reported ample instances of such beliefs, for example, that one twin in a pair must be dominant or that one twin must be feminine and the other masculine. Presumably, these reasons for differential treatment are limited to the special case of twins and would not promote differential treatment of ordinary siblings, although there may be folk beliefs about birth order that affect singletons. Third, the mother may identify one child as being like herself and as a consequence may feel more strongly about that child (either positively or negatively). Fourth, the mother whose relationship with the twins' father is acrimonious may identify one child as representing her ex-partner and then redirect her negative feelings toward that child. More research is needed to uncover reasons why siblings are differentially treated by parents (Asbury, Dunn, Pike, & Plomin, 2003; Jenkins, Rasbash, & O'Connor, 2003). Future quantitative research can be complemented by more detailed qualitative analyses that explore attributional processes and meaning making by mothers in greater depth.

In sum, the present study documents that maternal expressed emotion is a child-specific environmental experience that systematically influences young children's behavioral development. More generally, the study illustrates that genetically sensitive designs can yield valuable evidence about how environmental factors shape development. Many socialization researchers are concerned that the great enthusiasm for genetic research will overshadow the importance of environmental research, both in terms of policy initiatives and in terms of scientific priorities. But this concern is misdirected, because genetically informative research can provide leverage in identifying whether specific environmental risks represent environmental causation via "nurture" (Rutter, 2000).

References

Achenbach, T. M. (1991a). *Manual for the Child Behavior Checklist/4-18 and 1991 profile*. Burlington: University of Vermont, Department of Psychiatry.
 Achenbach, T. M. (1991b). *Manual for the Teacher's Report Form and 1991 profile*. Burlington: University of Vermont, Department of Psychiatry.
 Arseneault, L., Moffitt, T. E., Caspi, A., Taylor, A., Rijdsdijk, F. V., Jaffee, S. R., et al. (2003). Strong genetic effects on cross-situational antisocial behaviour among 5-year-old children according to mothers, teachers, examiner-observers, and twins' self-reports. *Journal of Child Psychology and Psychiatry and Allied Disciplines*, *44*, 832-848.
 Asarnow, J. R., Tompson, M., Hamilton, E. B., Goldstein, M. J., & Guthrie,

D. (1994). Family expressed emotion, childhood onset depression and childhood onset schizophrenia spectrum disorders: Is expressed emotion a nonspecific correlate of child psychopathology or a specific risk factor for depression? *Journal of Abnormal Child Psychology*, *22*, 129-146.
 Asarnow, J. R., Tompson, M., Woo, S., & Cantwell, D. P. (2001). Is expressed emotion a specific risk factor for depression or a nonspecific correlate of psychopathology? *Journal of Abnormal Child Psychology*, *29*, 573-583.
 Asbury, K., Dunn, J., Pike, A., & Plomin, R. (2003). Nonshared environmental influences on individual differences in early behavioral development: An MZ differences study. *Child Development*, *74*, 933-943.
 Bank, L., Dishion, T. J., Skinner, M. L., & Patterson, G. R. (1990). Method variance in structural equation modeling: Living with "glop." In G. R. Patterson (Ed.), *Depression and aggression in family interaction* (pp. 247-277). Hillsdale, NJ: Erlbaum.
 Bennett, N., Jarvis, L., Rowlands, O., Singleton, N., & Haselden, L. (1996). *Living in Britain: Results from the General Household Survey*. London: Her Majesty's Stationery Office.
 Brown, G. W., & Rutter, M. (1966). The measurement of family activities and relationships: A methodological study. *Human Relations*, *19*, 241-263.
 Butzlaff, R. L., & Hooley, J. M. (1998). Expressed emotion and psychiatric relapse. *Archives of General Psychiatry*, *55*, 547-552.
 Caspi, A., Wright, B. R. E., Moffitt, T. E., & Silva, P. A. (1998). Early failure in the labor market: Childhood and adolescent predictors of unemployment in the transition to adulthood. *American Sociological Review*, *63*, 424-451.
 Daley, D. M., Sonuga-Barke, E. J. S., & Thompson, M. (2003). Assessing expressed emotion in preschool: The psychometric properties of a modified speech sample in a clinical group. *British Journal of Clinical Psychology*, *42*, 53-68.
 Deater-Deckard, K., Pike, A., Petrill, S. A., Cutting, A. L., Hughes, C., & O'Connor, T. G. (2001). Nonshared environmental processes in social-emotional development: An observational study of identical twin differences in the preschool period. *Developmental Science*, *4*, 1-6.
 Farrington, D. F., & Junger, M. (Eds.). (1995). Crime and physical health [Special issue]. *Criminal Behaviour and Mental Health*, *5*(4).
 Gjone, H., & Novik, T. S. (1995). Parental ratings of behavioural problems: A twin and general population comparison. *Journal of Child Psychology and Psychiatry and Allied Disciplines*, *36*, 1213-1224.
 Gould, W., & Sribney, W. (1999). *Maximum likelihood estimation with STATA*. College Station, TX: Stata Press.
 Harris, J. R. (1998). *The nurture assumption*. New York: Free Press.
 Hibbs, E. D., Hamburger, S. D., Lenane, M., Rapoport, J. L., Kruesi, M. J. P., Keysor, C. S., & Goldstein, M. J. (1991). Determinants of expressed emotion in families of disturbed and normal children. *Journal of Child Psychology and Psychiatry and Allied Disciplines*, *32*, 757-770.
 Hirshfeld, D. R., Biederman, J., Brody, L., Faraone, S. V., & Rosenbaum, J. F. (1997). Associations between expressed emotion and child behavioral inhibition and psychopathology: A pilot study. *Journal of the American Academy of Child and Adolescent Psychiatry*, *36*, 205-213.
 Howe, G. W., Reiss, D., & Yuh, J. (2002). Can prevention trials test theories of etiology? *Development and Psychopathology*, *14*, 673-694.
 Jaffee, S. R., Moffitt, T. E., Caspi, A., & Taylor, A. (2003). Life with (or without) father: The benefits of living with two biological parents depend on the father's antisocial behavior. *Child Development*, *74*, 109-126.
 Jenkins, J. M., Rasbash, J., & O'Connor, T. G. (2003). The role of the shared family context in differential parenting. *Developmental Psychology*, *39*, 99-113.
 Johnson, W., Krueger, R. F., Bouchard, T. J., & McGue, M. (2002). The personalities of twins: Just ordinary folks. *Twin Research*, *5*, 125-131.
 Kendler, K. S. (1993). Twin studies of psychiatric illness. *Archives of General Psychiatry*, *50*, 905-913.

- Kendler, K. S., Martin, N. G., Heath, A. C., & Eaves, L. (1995). Self-report psychiatric symptoms in twins and their nontwin relatives: Are twins different? *American Journal of Medical Genetics*, 60, 588-591.
- Levy, F., Hay, D., McLaughlin, M., Wood, C., & Waldman, I. (1996). Twin-sibling differences in parental reports of ADHD, speech, reading, and behavioural problems. *Journal of Child Psychology and Psychiatry and Allied Disciplines*, 37, 569-578.
- Magana, A. B., Goldstein, M. J., Karno, D. J., Miklowitz, J. J., & Falloon, I. R. H. (1986). A brief method for assessing expressed emotion in relatives of psychiatric patients. *Psychiatry Research*, 17, 203-212.
- Maynard, R. A. (Ed.). (1997). *Kids having kids: Economic costs and social consequences of teen pregnancy*. Washington, DC: Urban Institute Press.
- McCarty, C. A., & Weisz, J. R. (2002). Correlates of expressed emotion in mothers of clinically-referred youth: An examination of the five-minute speech sample. *Journal of Child Psychology and Psychiatry and Allied Disciplines*, 43, 759-768.
- McHale, S. M., & Pawletok, T. M. (1992). Differential treatment of siblings in two family contexts. *Child Development*, 63, 68-81.
- Moffitt, T. E., Caspi, A., Harrington, H., & Milne, B. J. (2002). Males on the life-course persistent and adolescence-limited antisocial pathways: Follow-up at age 26. *Development and Psychopathology*, 14, 179-206.
- Moffitt, T. E., Caspi, A., Rutter, M., & Silva, P. A. (2001). *Sex differences in antisocial behaviour: Conduct disorder, juvenile delinquency, and violence in the Dunedin Longitudinal Study*. Cambridge, England: Cambridge University Press.
- Moffitt, T. E., & E-Risk Study Team. (2002). Teen-aged mothers in contemporary Britain. *Journal of Child Psychology and Psychiatry and Allied Disciplines*, 43, 727-742.
- Moilanen, I., Linna, S.-L., Ebeling, H., Kumpulainen, K., Tamminen, T., Piha, J., & Almqvist, F. (1999). Are twins' behavioural/emotional problems different from singletons'? *European Child and Adolescent Psychiatry*, 8(Suppl. 4), 62-67.
- Olds, D. L., Robinson, J., O'Brien, R., Luckey, D. W., Pettitt, L. M., Henderson, C. R., et al. (2002). Home visiting by paraprofessionals and by nurses: A randomized, controlled trial. *Pediatrics*, 110, 486-496.
- Peris, T. S., & Baker, B. L. (2000). Applications of the expressed emotion construct to young children with externalizing behavior: Stability and prediction over time. *Journal of Child Psychology and Psychiatry and Allied Disciplines*, 41, 457-462.
- Pike, A., Reiss, D., Hetherington, E. M., & Plomin, R. (1996). Using MZ differences in search for nonshared environmental effects. *Journal of Child Psychology and Psychiatry and Allied Disciplines*, 37, 695-704.
- Plomin, R. (1994). *Genetics and experience: The interplay between nature and nurture*. Thousand Oaks, CA: Sage.
- Plomin, R., & Daniels, D. (1987). Why are children in the same family so different from one another? *Behavioral and Brain Sciences*, 10, 1-16.
- Plomin, R., DeFries, J., McCleam, G., & McGuffin, P. (2000). *Behavioral genetics* (4th ed.). New York: W. H. Freeman.
- Potter, L. B., & Mercy, J. A. (1997). Public health perspective on interpersonal violence among youths in the United States. In D. M. Stoff, J. Breiling, & J. D. Maser (Eds.), *Handbook of antisocial behavior* (pp. 3-11). New York: Wiley.
- Price, T. S., Freeman, B., Craig, I., Petrill, S. A., Ebersole, L., & Plomin, R. (2000). Infant zygosity can be assigned by parental report questionnaire data. *Twin Research*, 3, 129-133.
- Reiss, D., Neiderhiser, J. M., Hetherington, E. M., & Plomin, R. (2000). *The relationship code: Deciphering genetic and social influences on adolescent development*. Cambridge, MA: Harvard University Press.
- Rhee, S., & Waldman, I. D. (2002). Genetic and environmental influences on antisocial behavior: A meta-analysis of twin and adoption studies. *Psychological Bulletin*, 128, 490-529.
- Richman, N., Stevenson, J., & Graham, P. J. (1982). *Preschool to school: A behavioural study*. London: Academic Press.
- Rodgers, J. L., Rowe, D. C., & Li, C. (1994). Beyond nature versus nurture: DF analysis of nonshared influences on problem behaviors. *Developmental Psychology*, 30, 374-384.
- Rovine, M. J. (1994). Estimating nonshared environment using sibling discrepancy scores. In E. M. Hetherington, D. Reiss, & R. Plomin (Eds.), *Separate social worlds of siblings: The impact of nonshared environment on development* (pp. 33-61). Hillsdale, NJ: Erlbaum.
- Rowe, D. C. (1994). *The limits of family influence*. New York: Guilford Press.
- Rowe, D. C., & Plomin, R. (1981). The importance of nonshared (E_1) environmental influences in behavioral development. *Developmental Psychology*, 17, 517-531.
- Rutter, M. (2000). Psychosocial influences: Critiques, findings, and research needs. *Development and Psychopathology*, 12, 375-405.
- Rutter, M., & Brown, G. W. (1966). The reliability and validity of measures of family life and relationships in families containing a psychiatric patient. *Social Psychiatry*, 1, 38-53.
- Rutter, M., Pickles, A., Murray, R., & Eaves, L. (2001). Testing hypotheses on specific environmental risks. *Psychological Bulletin*, 127, 291-324.
- Sandberg, S., Rutter, M., & Jarvi, J. (in press). Brief measure of expressed emotion: Internal consistency and stability over time. *International Journal of Methods in Psychiatric Research*.
- Sanders, M. R., Markie-Dadds, C., Tully, L. A., & Bor, W. (2000). The Triple P-Positive Parenting Program: A comparison of enhanced, standard, and self-directed behavioral family intervention for parents of children with early onset conduct problems. *Journal of Consulting and Clinical Psychology*, 68, 624-640.
- Scarr, S. (1992). Developmental theories for the 1990s: Development and individual differences. *Child Development*, 63, 1-19.
- Schwartz, C. E., Dorer, D. J., Beardslee, W. R., Lavori, P. W., & Keller, M. B. (1990). Maternal expressed emotion and parental affective disorder: Risk for childhood depressive disorder, substance abuse, or conduct disorder. *Psychiatric Research*, 24, 231-250.
- Scott, S., & Campbell, C. (2001). Expressed emotion about children: Reliability and validity of a Camberwell Family Interview for Childhood (CFI-C). *International Journal of Methods in Psychiatric Research*, 9, 3-10.
- Snyder, J., Reid, J., & Patterson, G. R. (2003). The social learning model of antisocial behavior among children and adolescents. In B. Lahey, T. E. Moffitt, & A. Caspi (Eds.), *Causes of conduct disorders and juvenile delinquency* (pp. 27-48). New York: Guilford Press.
- StataCorp. (2001). *Stata statistical software: Release 7.0*. College Station, TX: Stata Corporation.
- Stubbe, D. E., Zahner, G. E. P., Goldstein, M. J., & Leckman, J. F. (1993). Diagnostic specificity of a brief measure of expressed emotion: A community study of children. *Journal of Child Psychology and Psychiatry and Allied Disciplines*, 34, 139-154.
- Taylor, J., Iacono, W. G., & McGue, M. (2000). Evidence for a genetic etiology for early-onset delinquency. *Journal of Abnormal Psychology*, 109, 634-643.
- Trouton, A., Spinath, F. M., & Plomin, R. (2002). Twins Early Development Study (TEDS): A multivariate, longitudinal genetic investigation of language, cognition, and behaviour problems in childhood. *Twin Research*, 5, 444-448.
- Turkheimer, E. (2000). Three laws of behavior genetics and what they mean. *Current Directions in Psychological Science*, 9, 160-163.
- Turkheimer, E., & Waldron, M. (2000). Nonshared environment: A theoretical, methodological, and quantitative review. *Psychological Bulletin*, 126, 78-108.
- van den Oord, E. J. C. G., Koot, H. M., Boomsma, D. I., Verhulst, F. C., & Orleveke, J. F. (1995). A twin-singleton comparison of problem behaviour in 2-3 year olds. *Journal of Child Psychology and Psychiatry and Allied Disciplines*, 36, 449-458.
- van den Oord, E. J. C. G., Verhulst, F. C., & Boomsma, D. I. (1996). A

MONOZYGOTIC-TWIN DIFFERENCES

- genetic study of maternal and paternal ratings of problem behaviors in 3-year-old twins. *Journal of Abnormal Psychology*, 105, 349-357.
- van der Ende, J. (1999). Multiple informants: Multiple views. In H. M. Koot, A. A. M. Crijnen, & R. F. Ferdinand (Eds.), *Child psychiatry epidemiology: Accomplishments and future directions* (pp. 39-52). Assen, The Netherlands: Van Gorcum.
- van der Valk, J. C., Verhulst, F. C., Stroet, T. M., & Boomsma, D. I. (1998). Quantitative genetic analysis of internalising and externalising problems in a large sample of 3-year-old twins. *Twin Research*, 1, 25-33.
- Vaughn, C. E. (1989). Expressed emotion in family relationships. *Journal of Child Psychology and Psychiatry and Allied Disciplines*, 30, 13-22.
- Vaughn, C. E., & Leff, J. P. (1976). The measurement of expressed emotion in the families of psychiatric patients. *British Journal of Social and Clinical Psychology*, 15, 157-165.
- Vostanis, P., & Nicholls, J. (1995). Nine-month changes of maternal expressed emotion in conduct and emotional disorders of childhood: A follow-up study. *Journal of Child Psychology and Psychiatry and Allied Disciplines*, 36, 833-846.
- Vostanis, P., Nicholls, J., & Harrington, R. (1994). Maternal expressed emotion in conduct and emotional disorders of childhood. *Journal of Child Psychology and Psychiatry and Allied Disciplines*, 35, 365-376.
- Webster-Stratton, C. (1998). Preventing conduct problems in Head Start children: Strengthening parenting competencies. *Journal of Consulting and Clinical Psychology*, 66, 715-730.

Received March 21, 2003

Revision received September 24, 2003

Accepted October 8, 2003 ■

Appendix 2

1. Familyid 5602 was a family of White female DZ twins whose main language spoken at home was English.
2. The mother of the twins was aged less than or equal to 20 when she had her first child.
3. The mother report for child antisocial behaviour was missing.
4. The family lived in Local Authority housing and claimed 3 social benefits.
5. The mother had no educational qualifications, and the family did not own a car.
6. All parenting variables were missing as were the marital conflict/family structure variables and the parent's antisocial behaviour.

As the proposed research is primarily concerned with the variables which were missing for this family, it seemed more worthwhile to exclude the family from analysis.

Appendix 3

TEDS E-RISK EXPRESSED EMOTION CODING SHEET

TWIN 1

ID NUMBER _____

FIRST NAME _____

NEGATIVE COMMENTS _____

POSITIVE COMMENTS _____

WARMTH

- 0 No Warmth
- 1 Very Little Warmth
- 2 Some Warmth
- 3 Moderate Warmth
- 4 Moderately High Warmth
- 5 High Warmth

DISSATISFACTION/NEGATIVITY

- 0 No Negativity at all
- 1 Very Little Negativity
- 2 Some Negativity
- 3 Negative, some sources of dissatisfaction
- 4 Negative, makes disparaging remarks and finds fault
- 5 Resentful, hostile

TEDS Life History Calendar 1994 Coh

1996														1997																								
No	De	Ja	Fe	Mr	Ap	My	Jn	Jy	Au	Se	Oc	No	De	Ja	Fe	Mr	Ap	My	Jn	Jy	Au	Se	Oc	No	De	Ja	Fe	Mr	Ap	My	Jn	Jy	Au	Se	Oc	No	De	

1996														1997																								
No	De	Ja	Fe	Mr	Ap	My	Jn	Jy	Au	Se	Oc	No	De	Ja	Fe	Mr	Ap	My	Jn	Jy	Au	Se	Oc	No	De	Ja	Fe	Mr	Ap	My	Jn	Jy	Au	Se	Oc	No	De	

1996														1997																								
No	De	Ja	Fe	Mr	Ap	My	Jn	Jy	Au	Se	Oc	No	De	Ja	Fe	Mr	Ap	My	Jn	Jy	Au	Se	Oc	No	De	Ja	Fe	Mr	Ap	My	Jn	Jy	Au	Se	Oc	No	De	

1996														1997																								
No	De	Ja	Fe	Mr	Ap	My	Jn	Jy	Au	Se	Oc	No	De	Ja	Fe	Mr	Ap	My	Jn	Jy	Au	Se	Oc	No	De	Ja	Fe	Mr	Ap	My	Jn	Jy	Au	Se	Oc	No	De	

1996														1997																								
No	De	Ja	Fe	Mr	Ap	My	Jn	Jy	Au	Se	Oc	No	De	Ja	Fe	Mr	Ap	My	Jn	Jy	Au	Se	Oc	No	De	Ja	Fe	Mr	Ap	My	Jn	Jy	Au	Se	Oc	No	De	

1996														1997																								
No	De	Ja	Fe	Mr	Ap	My	Jn	Jy	Au	Se	Oc	No	De	Ja	Fe	Mr	Ap	My	Jn	Jy	Au	Se	Oc	No	De	Ja	Fe	Mr	Ap	My	Jn	Jy	Au	Se	Oc	No	De	

Interview date:

4 Cohort

Name: _____

1998													1999													2000		
No	De	Ja	Fe	Mr	Ap	My	Jn	Jy	Au	Se	Oc	No	De	Ja	Fe	Mr	Ap	My	Jn	Jy	Au	Se	Oc	No	De	Ja	Fe	

1998													1999													2000		
No	De	Ja	Fe	Mr	Ap	My	Jn	Jy	Au	Se	Oc	No	De	Ja	Fe	Mr	Ap	My	Jn	Jy	Au	Se	Oc	No	De	Ja	Fe	
D																												

1998													1999													2000		
No	De	Ja	Fe	Mr	Ap	My	Jn	Jy	Au	Se	Oc	No	De	Ja	Fe	Mr	Ap	My	Jn	Jy	Au	Se	Oc	No	De	Ja	Fe	

1998													1999													2000		
No	De	Ja	Fe	Mr	Ap	My	Jn	Jy	Au	Se	Oc	No	De	Ja	Fe	Mr	Ap	My	Jn	Jy	Au	Se	Oc	No	De	Ja	Fe	

1998													1999													2000		
No	De	Ja	Fe	Mr	Ap	My	Jn	Jy	Au	Se	Oc	No	De	Ja	Fe	Mr	Ap	My	Jn	Jy	Au	Se	Oc	No	De	Ja	Fe	

1998													1999													2000		
No	De	Ja	Fe	Mr	Ap	My	Jn	Jy	Au	Se	Oc	No	De	Ja	Fe	Mr	Ap	My	Jn	Jy	Au	Se	Oc	No	De	Ja	Fe	

Interview date:
Day Month Year

Interviewer: _____

ne: _____

ID#

--	--	--	--	--	--

1999														2000		
De	Ja	Fe	Mr	Ap	My	Jn	Jy	Au	Se	Oc	No	De	Ja	Fe	Mr	
					P	L	A	C	E							
					P	L	A	C	E							

1999														2000		
De	Ja	Fe	Mr	Ap	My	Jn	Jy	Au	Se	Oc	No	De	Ja	Fe	Mr	
			T	W	I	N	S'		D	A	D					
			S	P	O	U	S	E								
			W	S	P	O	U	S	E							
			P	A	R	T	N	E	R							
			W	P	A	R	T	N	E	R						
			O	T	H	E	R	S								

1999														2000		
De	Ja	Fe	Mr	Ap	My	Jn	Jy	Au	Se	Oc	No	De	Ja	Fe	Mr	
					F	I	R	S	T							
				S	E	C	O	N	D							
					T	H	I	R	D							
				F	O	U	R	T	H							
					F	I	F	T	H							
					S	I	X	T	H							

1999														2000		
De	Ja	Fe	Mr	Ap	My	Jn	Jy	Au	Se	Oc	No	De	Ja	Fe	Mr	
					M	U	M									
			P	A	R	T	N	E	R							

1999														2000		
De	Ja	Fe	Mr	Ap	My	Jn	Jy	Au	Se	Oc	No	De	Ja	Fe	Mr	
				T	W	I	N		A							
		C	H	I	L	D		C	A	R	E					
				H	E	A	L	T	H							
				T	W	I	N		B							
		C	H	I	L	D		C	A	R	E					
				H	E	A	L	T	H							

Cohab codes:
 M - Marriage month
 D - Divorced
 W - Widowed
 A - Annulment
 S - Separated

Twin away codes:
 1 - Other parent
 2 - Grandparent
 3 - Other relative
 4 - Social worker / foster
 5 - Hospital / institution
 6 - Other

Child care arrangements:
 1 - Child minder, full-time
 2 - Child minder, part-time
 3 - Group care, full-time
 4 - Group care, part-time

Health codes:
 L - Long term / chronic
 S - Serious illness
 A - Accident
 H - Hospitalisation

Interviewer: _____

Appendix 5

CORRELATIONS FOR PARENTING VARIABLES

	Freq Smack	Neg Comments	Negativity	Warmth	Pos Comments
Freq Smack	1.000	0.15***	0.18***	-0.16***	-0.14***
Neg Comments		1.000	0.66***	-0.38***	-0.19**
Negativity			1.000	-0.54***	-0.39***
Warmth				1.000	0.60***
Pos Comments					1.000

Appendix 6

CORRELATIONS FOR MARTIAL CONFLICT VARIABLES

	DISAGREE	QUARRELL	DOMESTIC VIOLENCE
DISAGREE CHILDREARING	1.000	0.24***	0.19***
PARENTAL QUARRELL		1.000	0.48***
DOMESTIC VIOLENCE			1.000

Appendix 7

CORRELATIONS FOR POVERTY VARIABLES

	TENURE	CAR OWN	BENEFITS	UNEMP (M)	UNEMP (P)	INCOME
TENURE	1.000	0.44***	0.64***	0.28***	0.35***	0.62***
CAR OWNERSHIP		1.000	0.44***	0.20***	0.21***	0.42***
BENEFITS			1.000	0.32***	0.42***	0.74***
UNEMPLOY MOTHER				1.000	0.21***	0.35***
UNEMPLOY PARTNER					1.000	0.36***
INCOME						1.000

Appendix 8

Descriptive Statistics for Teacher Reports on Child Antisocial Behaviour and Parenting Risk Factors for Weighted Sample.

<u>Parenting Measures</u>	<u>No/Low ASB</u>	<u>Mod ASB</u>	<u>ModHigh ASB</u>	<u>High ASB</u>
<u>Frequency of Smacking</u>				
No Smacking	37.96 (104)	20.44 (56)	22.63 (62)	18.98 (52)
Rarely/Occ	33.64 (451)	23.20 (311)	22.25 (298)	20.91 (280)
Monthly	26.04 (66)	21.51 (54)	26.72 (68)	25.73 (65)
Weekly/Daily	18.83 (38)	21.97 (44)	24.66 (50)	34.54 (70)
<u>Maternal Warmth</u>				
Missing Data	29.55 (65)	21.36 (47)	22.73 (50)	26.36 (58)
No Warmth	26.33 (89)	19.79 (67)	23.44 (79)	30.44 (103)
Mod Warmth	29.87 (201)	22.82 (154)	24.25 (164)	23.06 (155)
High Warmth	33.92 (293)	24.73 (214)	21.82 (189)	19.53 (169)
<u>Maternal Positive Comments</u>				
Missing Data	29.91 (64)	20.09 (43)	23.36 (50)	26.64 (57)
No Positive	26.98 (112)	20.25 (84)	25.54 (106)	27.23 (113)
Upto 2 Pos	32.24 (153)	22.44 (107)	20.41 (97)	24.92 (118)
3 positives	31.41 (125)	22.48 (89)	27.51 (109)	18.59 (74)
>=4 positives	32.80 (195)	25.99 (154)	20.36 (121)	20.84 (124)
<u>Maternal Negativity</u>				
Missing Data	29.41 (65)	21.27 (47)	23.08 (51)	26.24 (58)
No/Low Neg	33.40 (357)	24.72 (264)	21.90 (234)	19.99 (74)
Some Neg	29.58 (171)	22.71 (131)	23.21 (134)	24.50 (142)
High Neg	23.09 (53)	17.21 (39)	27.37 (62)	32.33 (74)
<u>Maternal Negative Comments</u>				
Missing Data	29.63 (64)	19.91 (43)	24.07 (52)	26.39 (57)
No Neg Com	31.99 (105)	24.22 (78)	23.12 (76)	20.67 (68)
Upto 2 Neg	32.24 (398)	23.19 (286)	22.95 (283)	21.62 (95)
>=3 Neg Com	25.45 (81)	21.74 (69)	22.99 (73)	29.82 (95)

Appendix 9

Descriptive Statistics for Teacher Reports on Child Antisocial Behaviour and Parenting Risk Factors for Sample According to Age of Mother at First Birth

<u>Parenting Measures</u>	<u>Sample Group</u>	<u>No/Low ASB</u>	<u>Mod ASB</u>	<u>ModHigh ASB</u>	<u>High ASB</u>
<u>Frequency of Smacking</u>					
No Smacking	Age<=20	33.78 (50)	20.27 (30)	26.35 (39)	19.59 (29)
	Age>=21	42.85 (54)	20.63 (26)	18.25 (23)	18.25 (23)
Rarely/Occ	Age<=20	29.35 (194)	22.24 (147)	23.30 (154)	25.11 (166)
	Age>=21	35.15 (239)	23.38 (159)	21.76 (148)	19.71 (134)
Monthly	Age<=20	19.17 (23)	17.50 (21)	27.50 (33)	35.83 (43)
	Age>=21	29.23 (38)	23.08 (30)	26.15 (34)	21.54 (28)
Weekly/Daily	Age<=20	11.32 (12)	7.55 (8)	32.08 (34)	49.06 (52)
	Age>=21	22.22 (22)	28.28 (28)	21.21 (21)	28.28 (28)
<u>Maternal Warmth</u>					
Missing Data	Age<=20	23.58 (25)	20.75 (22)	22.64 (24)	33.02 (35)
	Age>=21	35.09 (40)	21.93 (25)	22.81 (26)	20.18 (23)
No Warmth	Age<=20	24.21 (61)	15.08 (38)	25.79 (65)	34.92 (88)
	Age>=21	28.68 (39)	22.79 (31)	21.32 (29)	27.71 (37)
Mod Warmth	Age<=20	25.20 (94)	19.30 (72)	28.42 (106)	27.08 (101)
	Age>=21	32.19 (103)	24.38 (78)	22.19 (71)	21.25 (68)
High Warmth	Age<=20	27.74 (91)	24.39 (80)	23.78 (78)	24.09 (79)
	Age>=21	35.39 (166)	24.73 (116)	21.32 (100)	18.55 (87)
<u>Maternal Positive Comments</u>					
Missing Data	Age<=20	24.04 (25)	20.19 (21)	23.08 (24)	32.69 (34)
	Age>=21	35.45 (39)	20.00 (22)	23.64 (26)	20.91 (23)
No Positives	Age<=20	22.54 (64)	14.44 (41)	29.93 (85)	33.10 (94)
	Age>=21	29.94 (53)	23.73 (42)	22.60 (40)	23.73 (42)
Upto 2 Pos	Age<=20	24.39 (60)	22.76 (56)	23.17 (57)	29.67 (73)
	Age>=21	35.47 (83)	22.22 (52)	19.23 (45)	23.08 (54)
= 3 Positives	Age<=20	31.53 (64)	18.23 (37)	25.62 (52)	24.63 (50)
	Age>=21	31.96 (62)	24.23 (47)	27.84 (54)	15.98 (31)
>=4 Positives	Age<=20	26.13 (58)	25.23 (56)	25.23 (56)	23.42 (52)
	Age>=21	34.37 (111)	26.01 (84)	19.20 (62)	20.43 (66)

Appendix 9

<u>Parenting Measures</u>	<u>Sample Group</u>	<u>No/Low ASB</u>	<u>Mod ASB</u>	<u>ModHigh ASB</u>	<u>High ASB</u>
<u>Maternal Negative Comments</u>					
Missing Data	Age<=20	23.81 (25)	20.00 (21)	23.81 (25)	32.38 (34)
	Age>=21	35.14 (39)	19.82 (22)	24.32 (27)	20.72 (23)
No Neg Com	Age<=20	28.68 (37)	26.36 (34)	22.48 (29)	22.48 (29)
	Age>=21	32.77 (58)	23.73 (42)	23.16 (41)	20.34 (36)
Upto 2 Neg	Age<=20	26.04 (157)	19.73 (119)	27.53 (166)	26.70 (161)
	Age>=21	34.85 (215)	24.31 (150)	21.07 (130)	19.77 (122)
>=3 Neg Com	Age<=20	23.32 (52)	16.59 (37)	24.66 (55)	35.43 (79)
	Age>=21	26.52 (35)	25.00 (33)	21.97 (29)	26.52 (35)
<u>Maternal Negativity</u>					
Missing Data	Age<=20	23.36 (25)	20.56 (22)	23.36 (25)	32.71 (35)
	Age>=21	35.09 (40)	21.95 (25)	22.81 (26)	20.18 (23)
No/Low Neg	Age<=20	26.88 (118)	25.28 (111)	23.46 (103)	24.37 (107)
	Age>=21	35.39 (201)	24.47 (139)	21.48 (122)	18.66 (106)
Some Neg	Age<=20	28.62 (93)	15.38 (50)	29.54 (96)	26.46 (86)
	Age>=21	30.26 (82)	25.83 (70)	19.93 (54)	23.99 (65)
High Neg	Age<=20	17.99 (34)	15.34 (29)	26.98 (51)	39.68 (75)
	Age>=21	27.38 (23)	19.05 (16)	27.38 (23)	26.19 (22)

Appendix 10

Final ordered logistic model for the teachers report on child antisocial behaviour according to parenting risk factors (weighted sample). Only significant variables shown.

Child Antisocial Behaviour	Coef	P>z	95% Confidence Interval	
Missing Data Neg	0.3214751	0.661	-1.115749	1.758699
Some Negativity ²	0.1877231	0.090	-0.0293102	0.4047563
High Negativity	0.4932359	0.001	0.2045449	0.7819269
Monthly Smacked ³	0.2759039	0.078	-0.0308361	0.5826438
Weekly/Daily Smacked	0.5940103	0.001	0.2386831	0.9493376

	Coef	SE
Cut 1	-0.630889	0.1565068
Cut 2	0.3619449	0.1547472
Cut 3	1.42935	0.1599731

Reference Groups

² No/Low Negativity

³ Frequency of smacking – No Smacking

Final ordered logistic model for the teachers report on child antisocial behaviour according to parenting risk factors (mothers age<=20). Only significant variables shown.

Child Antisocial Behaviour	Coef	P>z	95% Confidence Interval	
High Negativity	0.4558281	0.012	0.1010768	0.8105794
Monthly Smacked ³	0.3947068	0.084	-0.0535854	0.842999
Weekly/Daily Smacked	0.9657857	0.000	0.5211041	1.410467

	Coef	SE
Cut 1	-0.594964	0.1960575
Cut 2	0.339762	0.1952582
Cut 3	1.492551	0.2077628

Reference Groups

² No/Low Negativity

³ Frequency of smacking – No Smacking

Appendix 10

Final ordered logistic model for the teachers report on child antisocial behaviour according to parenting risk factors (mothers age >=21). Only significant variables shown.

Child Antisocial Behaviour	Coef	P>z	95% Confidence Interval	
Monthly Smacked ²	0.4760694	0.071	-0.0403567	0.9924954
Weekly/Daily Smacked	0.7325404	0.010	0.1783922	1.286689

	Coef	SE
Cut 1	-0.5828767	0.1087325
Cut 2	0.4378159	0.1052322
Cut 3	1.477985	0.1227192

Reference Groups
² Frequency of smacking – No Smacking

<u>WEIGHTED</u>	<u>AGE <=20</u>	<u>AGE >-21</u>
Frequency of Smacking	Frequency of Smacking	Frequency of Smacking
Maternal Negativity	Maternal Negativity	NA

Appendix 11

Descriptive Statistics for Child Antisocial Behaviour (Teacher) according to Family Structure

CHILD ASB	SAMPLE	FAMILY STRUCTURE				
		Sep/Div	Stepfamily	Married	Cohabiting	Always Solo
No/Low ASB	Weighted	23.39 (76)	26.35 (39)	33.86 (410)	27.35 (93)	22.22 (20)
	Age<=20	24.51 (50)	23.77 (29)	30.98 (127)	26.18 (61)	20.00 (14)
	Age>=21	30.95 (26)	38.46 (10)	35.33 (283)	29.91 (32)	30.00 (6)
Mod ASB	Weighted	21.53 (62)	17.57 (26)	22.79 (276)	20.00 (68)	20.00 (18)
	Age<=20	19.12 (39)	14.75 (18)	22.68 (93)	17.60 (41)	22.86 (16)
	Age>=21	27.38 (23)	30.77 (8)	22.85 (183)	25.23 (27)	10.00 (2)
Mod/High ASB	Weighted	26.39 (76)	25.68 (38)	22.13 (268)	24.71 (84)	20.00 (18)
	Age<=20	29.41 (60)	28.69 (35)	21.95 (90)	25.75 (60)	21.43 (15)
	Age>=21	19.05 (16)	11.54 (3)	22.22 (178)	22.43 (24)	15.00 (3)
High ASB	Weighted	25.69 (74)	30.41 (45)	21.22 (257)	27.94 (95)	37.78 (34)
	Age<=20	26.96 (55)	32.79 (40)	24.39 (100)	30.47 (71)	35.71 (25)
	Age>=21	22.62 (19)	19.23 (5)	19.60 (157)	22.43 (24)	45.00 (9)

Weighted = Chi2 31.08, df12, p=0.002

Age<=20 (Younger Mothers) = Chi2 18.07, DF12, P=0.114

Age>=21 (Older Mothers) = Chi2 12.90, df12, p=0.376

Appendix 12

Descriptive Statistics for Disagreement about Child-rearing and Child Antisocial Behaviour (Teacher)

Child ASB	Sample	Missing Data	No/Low Disagree	Moderate Disagree	High
No/Low ASB	Weighted	23.34 (67)	33.04 (2590)	32.85 (135)	29.38 (176)
	Age<=20	20.90 (42)	30.29 (103)	28.92 (59)	25.68 (75)
	Age>=21	29.07 (25)	35.14 (156)	36.71 (76)	32.90 (101)
Mod ASB	Weighted	21.60 (62)	22.83 (179)	20.44 (84)	21.54 (129)
	Age<=20	19.90 (40)	21.18 (72)	16.67 (34)	21.23 (62)
	Age>=21	25.58 (22)	24.10 (107)	24.15 (50)	21.82 (67)
Mod/High ASB	Weighted	26.13 (75)	23.60 (185)	22.87 (94)	22.37 (134)
	Age<=20	28.36 (57)	24.71 (84)	26.96 (55)	22.60 (66)
	Age>=21	20.98 (18)	22.75 (101)	18.84 (39)	22.15 (68)
High ASB	Weighted	28.92 (83)	20.54 (161)	23.84 (98)	26.71 (160)
	Age<=20	30.85 (62)	23.82 (81)	27.45 (56)	30.48 (89)
	Age>=21	24.42 (21)	18.02 (80)	20.29 (42)	23.13 (71)

Weighted = Chi2 8.19, df6, p=0.224, Gamma = 0.06

Age<=20 (Younger Mothers) = Chi2 6.39, df6, p=0.38, Gamma =0.04

Age>=21 (Older Mothers) = Chi2 4.42, df6, p=0.622, Gamma =0.07

Descriptive Statistics for Parental Quarrelling and Child Antisocial Behaviour (Teacher)

Child ASB	Sample	No/Low Quarrel	Moderate Quarrel	High Quarrel
No/Low ASB	Weighted	32.35 (296)	29.44 (146)	28.59 (183)
	Age<=20	30.75 (111)	24.61 (63)	24.50 (98)
	Age>=21	33.39 (185)	34.58 (83)	35.42 (85)
Mod ASB	Weighted	22.08 (202)	19.96 (99)	22.81 (146)
	Age<=20	20.78 (75)	18.36 (47)	20.00 (80)
	Age>=21	22.92 (127)	21.67 (52)	27.50 (66)
Mod/High ASB	Weighted	23.17 (212)	26.81 (133)	22.19 (142)
	Age<=20	24.65 (89)	28.52 (73)	25.00 (100)
	Age>=21	22.20 (123)	25.00 (60)	17.50 (42)
High ASB	Weighted	22.40 (205)	23.79 (118)	26.41 (169)
	Age<=20	23.82 (86)	28.52 (73)	30.50 (122)
	Age>=21	21.48 (119)	18.75 (45)	19.58 (47)

Weighted = Chi2 8.35, df6, p=0.213, Gamma = 0.05

Age<=20 (Younger Mothers) = Chi2 7.94, df6, p=0.240, Gamma =0.09

Age>=21 (Older Mothers) = Chi2 6.16, df6, p=0.405, Gamma =0.04

Appendix 12

Descriptive Statistics for Domestic Violence and Child Antisocial Behaviour (Teacher)

Child ASB	Sample	No/Low Domvio	Moderate Domvio	High Domvio
No/Low ASB	Weighted	32.96 (387)	28.95 (77)	26.35 (161)
	Age<=20	31.21 (142)	26.81 (37)	21.93 (93)
	Age>=21	34.08 (245)	31.25 (40)	36.36 (68)
Mod ASB	Weighted	21.98 (258)	24.81 (66)	20.13 (123)
	Age<=20	21.32 (97)	21.01 (290)	17.92 (76)
	Age>=21	22.39 (161)	28.91 (37)	25.13 (47)
Mod/High ASB	Weighted	24.28 (285)	18.05 (48)	25.20 (154)
	Age<=20	25.71 (117)	18.84 (26)	28.07 (119)
	Age>=21	23.37 (168)	17.19 (22)	18.72 (35)
High ASB	Weighted	20.78 (244)	28.20 (75)	28.31 (173)
	Age<=20	21.76 (99)	33.33 (46)	32.08 (136)
	Age>=21	20.17 (145)	22.66 (29)	19.79 (37)

Weighted = Chi2 23.98, df6, p=0.001, Gamma =0.11

Age<=20 (Younger Mothers) = Chi2 22.73, df6, p=0.001, Gamma =0.16

Age >=21 (Older Mothers) = Chi2 5.994, df6, p=0.425, Gamma = 0.02

Appendix 13

Coefficients for Marital Conflict Variables and Child Antisocial Behaviour (Teacher)

Marital Conflict	Sample Group	Coefficient
Disagreement about childrearing	Weighted	.0960552
	Age<=20	.0917532
	Age>=21	.105372
Parental Quarrelling	Weighted	.0740615
	Age<=20	.012278
	Age>=21	.1212187
Domestic Violence	Weighted	.1119684
	Age<=20	.2457864**
	Age>=21	.0011044

***=0.001, **=0.01, *=0.05

Multivariate Model for Family Structure, Marital Conflict and Teacher's Report on Child Antisocial Behaviour (Weighted 'All' Mother Sample)

Variable	Coef	95% CI	
Separated/Divorced ¹	.151919	-.5042379	.3080758
Stepfamilies	.290102	-.1407829	.7209868
Cohabiting	.260724	-.0246836	.5461316
Always Solo	.197746	-1.340388	1.735879
Disagree about Childrearing	.09207	-.0424667	.2266066
Parental Quarrelling	.080634	-.2318604	.0705924
Domestic Violence	.0739103	-.0837979	.2316185
Cut1	-.581665	.0971914	
Cut2	.3545867	.095232	
Cut 3	1.405583	.1042095	

Ref Group: ¹Always Married

Multivariate Model for Family Structure, Marital Conflict and Teacher's Report on Child Antisocial Behaviour (Younger Mother Sample)

Variable	Coef	95% CI	
Separated/Divorced ¹	.3601093	-.9688624	.2486438
Stepfamilies	.2725671	-.1963898	.741524
Cohabiting	.2104916	-.1691699	.590153
Always Solo	.7943162	-.1525306	1.741163
Disagree about Childrearing	.0795816	-.0993618	.258525
Parental Quarrelling	.0040006	-.1941319	.202133
Domestic Violence	.2414843**	.0569399	.4260287
Cut1	-.5801189	.1592768	
Cut2	.2981978	.1585172	
Cut 3	1.375681	.1699562	

Ref Group: ¹Always Married

Appendix 14

Descriptive Statistics for our Poverty Indicators and Child Antisocial Behaviour (Teacher) – Weighted Sample

Poverty indicators	No/Low ASB	Mod ASB	Mod/High ASB	High ASB
Weighted 'All' Mother Sample				
Housing Tenure				
Own House	33.33 (434)	22.27 (289)	22.34 (290)	21.96 (285)
Rented Private	35.25 (43)	22.95 (28)	14.75 (18)	27.05 (33)
Rent LA	24.47 (162)	20.54 (136)	26.89 (178)	28.10 (186)
Chi2 28.27, df6, p=0.000, gamma = 0.14				
Access to Car				
No Car	24.35 (66)	21.03 (57)	25.09 (68)	29.52 (80)
Access Only	25.45 (28)	17.27 (19)	26.36 (29)	30.91 (34)
Own Car	31.95 (545)	22.16 (378)	22.92 (391)	22.98 (392)
Chi2 13.78, df6, p=0.032, gamma = 0.14				
Number of Benefits Claimed in last year				
No Benefits	33.30 (389)	22.77 (266)	22.86 (267)	21.06 (246)
1 Benefits	30.00 (90)	21.00 (63)	22.00 (66)	27.00 (81)
>=2 Benefits	25.93 (160)	20.26 (125)	25.12 (155)	28.69 (177)
Chi2 20.52, p=0.002 gamma =0.12				
Mother's Unemployment/Inactivity in last five years				
No/Low	31.69 (231)	23.46 (171)	21.40 (1560)	23.46 (171)
Moderate	30.43 (238)	20.59 (161)	25.45 (199)	23.53 (184)
High	29.58 (168)	21.30 (1210)	22.54 (1280)	26.58 (151)
Chi2 6.43, df6, p=0.376, gamma =0.03				
Partner's Unemployment in last five years				
No unemployment	31.86 (496)	22.41 (3490)	22.09 (344)	23.64 (368)
< 1 year	26.07 (55)	22.75 (48)	27.49 (58)	23.70 (50)
> 1 year	28.30 (88)	17.68 (55)	26.69 (83)	27.33 (85)
Chi2 11.08, DF 6, p=0.086				
Income in last year				
< £14,999	24.24 (159)	21.65 (142)	25.91 (170)	28.20 (185)
£15-19,999	35.33 (106)	19.67 (59)	22.33 (67)	22.67 (68)
>£20K	32.85 (342)	22.19 (231)	22.57 (235)	22.38 (233)
Chi2 21.50, df 6, p=0.001				

Appendix 15

Descriptive Statistics for our Poverty Indicators and Child Antisocial Behaviour (Teacher) – Younger and Older Mother Sample

Poverty indicators	No/Low ASB	Mod ASB	Mod/High ASB	High ASB
Mother's Age<=20 (Younger Mothers)				
Housing Tenure				
Own House	29.93 (120)	19.20 (77)	23.94 (96)	26.93 (108)
Rent Private	30.99 (22)	21.13 (15)	15.49 (11)	32.39 (23)
Rent LA	24.47 (139)	20.25 (115)	27.11 (154)	28.17 (160)
Chi2 7.97, df6, p=0.267, gamma =0.06				
Use of a Car				
No Car	25.11 (58)	18.61 (43)	25.11 (58)	31.17 (72)
Access Only	17.50 (14)	17.50 (14)	31.25 (25)	33.75 (27)
Own Car	28.55 (209)	20.63 (151)	24.45 (179)	26.37 (193)
Chi2 8.05, df6, p=0.234				
Number of Benefits Claimed in Last Year				
No Benefits	29.60 (103)	20.98 (73)	25.29 (88)	24.14 (84)
1 Benefit	27.89 (53)	21.05 (40)	22.63 (43)	28.42 (54)
>=2 Benefits	24.85 (125)	18.89 (95)	26.04 (131)	30.22 (152)
Chi2 5.83, df 6, P=0.450				
Mother's Unemployment/Inactivity over the last 5 years				
No/Low Unemployment	27.88 (75)	21.19 (57)	21.56 (58)	29.37 (79)
Moderate	24.59 (104)	19.15 (81)	27.66 (117)	28.61 (121)
High	28.99 (100)	20.29 (70)	24.06 (83)	26.67 (92)
Chi2 7.82, DF6, P=0.251				
Partners' Unemployment over the last five years				
No Unemployment	28.80 (195)	20.83 (141)	23.78 (161)	26.59 (180)
< 1 Year	22.14 (29)	22.90 (30)	26.72 (350)	28.24 (37)
> 1 Year	24.68 (57)	16.02 (37)	27.71 (64)	31.60 (73)
Chi2 7.82, DF 6, P=0.251				
Income				
<£14,999	23.09 (121)	20.61 (108)	26.91 (141)	29.39 (154)
£15-19,999	32.14 (54)	15.48 (26)	24.40 (41)	27.98 (47)
>£20,000	28.16 (87)	21.36 (66)	25.24 (78)	25.24 (78)
Chi2 8.4, df6, p=0.213				

Appendix 15

Poverty indicators	No/Low ASB	Mod ASB	Mod/High ASB	High ASB
Mother's Age >=21 (Older Mothers)				
Housing Tenure				
Own House	35.01 (314)	23.63 (212)	21.63 (1940)	19.73 (177)
Rent Private	41.18 (21)	25.49 (13)	13.73 (7)	19.61 (10)
Rent LA	24.47 (23)	22.34 (21)	25.53 (24)	27.66 (26)
Chi2 8.59, df6, p=0.211, gamma = 0.10				
Use of a Car				
No Car	20.00 (8)	35.00 (14)	25.00 (10)	20.00 (8)
Access Only	46.67 (14)	16.67 (5)	13.33 (4)	23.33 (7)
Own Car	34.50 (336)	23.31 (227)	21.77 (2120)	20.43 (199)
Chi2 7.88, df6, p=0.247				
Number of Benefits Claimed in Last Year				
No Benefits	34.88 (286)	23.54 (193)	21.83 (179)	19.76 (162)
1 Benefit	33.64 (37)	20.91 (23)	20.91 (23)	24.55 (27)
>=2 Benefits	30.70 (35)	26.32 (30)	21.05 (24)	21.93 (25)
Chi2 2.49, DF6, P=0.869				
Mother's Unemployment/Inactivity over the last 5 years				
No/Low Unemployment	33.91 (156)	24.78 (114)	21.30 (98)	20.00 (92)
Moderate	37.33 (134)	22.28 (80)	22.84 (82)	17.55 (63)
High	30.49 (68)	22.87 (51)	20.18 (45)	26.46 (59)
Chi2 8.41, DF6, P=0.209				
Partners' Unemployment over the last five years				
No Unemployment	34.20 (301)	23.64 (208)	20.80 (183)	21.36 (188)
< 1 Year	32.50 (26)	22.50 (18)	28.75 (23)	16.25 (13)
> 1 Year	38.75 (31)	22.50 (18)	23.75 (19)	15.00 (12)
Chi2 5.13, DF6, P=0.526				
Income				
<£14,999	28.79 (38)	25.76 (34)	21.97 (29)	23.48 (31)
£15-19,999	39.39 (52)	25.00 (33)	19.70 (26)	15.91 (21)
>£20,000	34.84 (255)	22.54 (165)	21.45 (157)	21.17 (155)
Chi2 5.08, df6, p=0.533				

Appendix 16

Descriptive Statistics for Child Antisocial Behaviour (Teacher) and Poverty

Child ASB	Sample	POVERTY		
		No/Low	Moderate	High
No/Low ASB	Weighted	33.76 (264)	31.19 (194)	26.50 (181)
	Age<=20	30.62 (64)	27.08 (75)	25.49 (142)
	Age>=21	34.90 (200)	34.49 (119)	30.95 (39)
Moderate ASB	Weighted	24.17 (189)	20.10 (125)	20.50 (140)
	Age<=20	22.97 (48)	17.69 (49)	19.93 (111)
	Age>=21	24.61 (141)	22.03 (76)	23.02 (29)
Moderate/High ASB	Weighted	21.23 (166)	23.31 (145)	25.92 (177)
	Age<=20	21.53 (45)	24.19 (67)	26.93 (150)
	Age>=21	21.12 (121)	22.61 (78)	21.43 (27)
High ASB	Weighted	20.84 (163)	25.40 (158)	27.09 (185)
	Age<=20	24.88 (52)	31.05 (86)	27.65 (154)
	Age>=21	19.37 (111)	20.87 (72)	24.60 (31)

Weighted = Chi2 19.52 df6, p=0.003

Age<= 20 (Younger Mothers) = Chi2 6.69, df6, p=0.348

Age >=21 (Older Mothers) = Chi2 2.70, df6, p=0.841

Appendix 17

Descriptive Statistics for Child Antisocial Behaviour (Teacher) according to the Mothers Antisocial Behaviour.

Child ASB	Sample	Mothers Antisocial Behaviour			
		No/Low	Moderate	Mod/High	High
No/Low ASB	Weighted	33.03 (216)	31.75 (140)	31.52 (151)	25.83 (132)
	Age<=20	29.91 (67)	30.88 (63)	24.91 (67)	24.42 (84)
	Age>=21	34.65 (149)	32.49 (77)	40.00 (84)	28.74 (48)
Moderate ASB	Weighted	23.39 (153)	22.68 (100)	18.58 (89)	21.92 (112)
	Age<=20	24.11 (54)	18.63 (38)	19.70 (53)	18.31 (63)
	Age>=21	23.02 (99)	26.16 (62)	17.14 (36)	29.34 (49)
Mod/High ASB	Weighted	24.46 (160)	20.18 (89)	21.50 (103)	26.61 (136)
	Age<=20	25.89 (58)	18.14 (37)	24.16 (65)	29.65 (102)
	Age>=21	23.72 (102)	21.94 (52)	18.10 (38)	20.36 (34)
High ASB	Weighted	19.11 (125)	25.40 (1120)	28.39 (136)	25.64 (131)
	Age<=20	20.09 (45)	32.35 (66)	31.23 (84)	27.62 (95)
	Age>=21	18.60 (80)	19.41 (46)	24.76 (52)	21.56 (36)

Weighted = Chi2 25.01, df9, p=0.003

Age<=20 (Younger Mothers) = Chi2 20.05, df 9, p=0.018

Age>=21 (Older Mothers) = Chi2 15.56, df9, p=0.077

Descriptive Statistics for Child Antisocial Behaviour (Teacher) according to all Biological Fathers Antisocial Behaviour

Child ASB	Sample	Biological Fathers Antisocial Behaviour			
		No/Low	Moderate	Mod/High	High
No/Low ASB	Weighted	38.11 (234)	32.99 (162)	25.64 (120)	24.21 (122)
	Age<=20	37.77 (71)	30.34 (71)	20.58 (50)	23.66 (88)
	Age>=21	38.26 (163)	35.41 (91)	31.11 (70)	25.76 (34)
Moderate ASB	Weighted	21.17 (130)	22.40 (110)	21.37 (100)	22.22 (112)
	Age<=20	18.62 (35)	22.22 (52)	21.81 (53)	18.01 (67)
	Age>=21	22.30 (95)	22.57 (58)	20.89 (47)	34.09 (45)
Mod/High ASB	Weighted	23.78 (146)	20.57 (101)	23.08 (108)	26.19 (132)
	Age<=20	25.53 (48)	17.95 (42)	27.98 (68)	27.96 (104)
	Age>=21	23.00 (98)	22.96 (59)	17.78 (40)	21.21 (28)
High ASB	Weighted	16.94 (104)	24.03 (118)	29.91 (140)	27.38 (138)
	Age<=20	18.09 (34)	29.49 (69)	29.63 (72)	30.38 (113)
	Age>=21	16.43 (70)	19.07 (49)	30.22 (68)	18.94 (25)

Weighted = Chi2 48.22, df9, p=0.000

Age<=20 (Younger Mothers) = Chi2 31.56, df9, p=0.000

Age>=21 (Older Mothers) = Chi2 27.66, df9, p=0.001

Appendix 17

Ordered Logistic Model for Parental Antisocial Behaviour and Child Antisocial Behaviour (Teacher)

Variable	Coef	95% Confidence Interval	
<u>Weighted 'All' Mother Sample</u>			
Mothers ASB	.0068344	-.0934814	.1071502
Fathers ASB	.1857813***	.0845035	.2870592
<u>Younger Mother Sample (Age<=20)</u>			
Mothers ASB	.041885	-.0839795	.1677495
Fathers ASB	.1854552**	.0484819	.3224284
<u>Older Mother Sample (Age>=21)</u>			
Mothers ASB	-.0300199	-.1634097	.1033699
Fathers ASB	..1506595*	.0150557	.2862634

Ordered Logistic Model for Poverty, Parental Antisocial Behaviour and Child Antisocial Behaviour (Teacher)

Variable	Coef	95% Confidence Level	
<u>Weighted 'All' Mother Sample</u>			
Poverty	.0972568	-.0413651	.2358787
Mothers ASB	..0056802	-.0947979	.1061582
Fathers ASB	.1612356**	.0513981	.2710732
<u>Younger Mother Sample (Age<=20)</u>			
Poverty	.0011284	-.1873475	.1896042
Mothers ASB	.0418589	-.0838933	.167611
Fathers ASB	.1851977*	.0376308	.3327645
<u>Older Mother Sample (Age>=21)</u>			
Poverty	.0555208	-.1524459	.2634875
Mothers ASB	-.0280096	-.1616809	.1056616
Fathers ASB	.140652	-.0021054	.2834094

Appendix 18

Final Model for the Teacher's Report on Child Antisocial Behaviour (Weighted Sample). Significant variables only shown.

Variables	Coefficient	95% Confidence Interval	
Fathers ASB -ModH	.6052048***	.2633926	.9470169
Fathers ASB High	.549929**	.1895946	.9102633
Monthly Smacked	.4863641*	.0516595	.9210687
Weekly/Daily Smacked	.8751247***	.4250152	1.325234
High Negativity	.9223676*	.0411784	1.803557
Cut 1	-.3201415	.1251211	
Cut 2	.6895168	.1263649	
Cut 3	1.76374	.1364068	

Reference Groups:

No/Low Antisocial Behaviour - Father
 No Smacking
 No/Low Maternal Negativity

Final Model for the Teacher's Report on Child Antisocial Behaviour (Younger Mother Sample) – Significant variables only shown

Variables	Coefficient	95% Confidence Interval	
Fathers ASB -ModH	.6766172**	.2340611	1.119173
Fathers ASB High	.5870195*	.0839265	1.090112
Monthly Smack	.7088786*	.0911401	1.326617
Weekly/Daily Smack	1.25352***	.6436842	1.863345
High Dom Violence	.4163076*	.0478371	.7847782

Reference Groups:

No/Low ASB – Biological Father
 No Smacking
 No Domestic Violence

Final Model for the Teacher's Report on Child Antisocial Behaviour (Older Mother Sample) – Significant Variables only shown.

Variables	Coefficient	95% Confidence Interval	
Weekly/Daily Smacked	.8247095**	.261675	1.388151

Reference Groups:

No Smacking

Appendix 19

Models to Test for the Mediatory Effect of Parenting Behaviour and Maternal Attitude upon the association between Poverty and Child Antisocial Behaviour (Teacher). Significant variables only shown.

Model 1	Coef	95% Confidence Interval	
High Poverty	.363111**	.1174145	.6088096

* = 0.05, ** = 0.01, *** = 0.001

Reference Group:

¹No/Low Poverty

Model 2	Coef	95% Confidence Interval	
High Poverty	.321556**	.114589	.598743
Freq of Smacking - Monthly ²	.5614147**	.1676393	.9551902
Freq of Smack - Weekly/daily	.9040595***	.4766094	1.33151

* = 0.05, ** = 0.01, *** = 0.001

Reference Group:

¹No/Low Poverty

²No Smacking

Models to Test for the Mediatory Effect of Parenting Behaviour and Maternal Attitude upon the association between Maternal Antisocial Behaviour and Child Antisocial Behaviour (Teacher). Significant variables only shown.

Model 1	Coef	95% Confidence Interval	
High Antisocial Behaviour	.2806058*	.0132024	.5480092

* = 0.05, ** = 0.01, *** = 0.001

Reference Group:

¹No/Low Antisocial Behaviour

Model 2	Coef	95% Confidence Interval	
Freq of Smacking - Monthly ²	.5108604*	.1064482	.9152726
Freq of Smack - Weekly/daily	.8600551***	.4233814	1.296729

* = 0.05, ** = 0.01, *** = 0.001

Reference Group:

²No Smacking

Appendix 19

Models to Test for the Mediatory Effect of Parenting Behaviour and Maternal Attitude upon the association between the Biological Father's Antisocial Behaviour and Child Antisocial Behaviour (Teacher). Significant variables only shown.

Model 1	Coef	95% Confidence Interval	
Moderate/High Antisocial Behaviour ¹	.5418526***	.2432955	.8404097
High Antisocial Behaviour	.49557929***	.2285182	.7630667

* = 0.05, ** = 0.01, *** = 0.001

Reference Group:

¹No/Low Antisocial Behaviour

Model 2	Coef	95% Confidence Interval	
Moderate/High Antisocial Behaviour	.496960***	.1912586	.8026619
High Antisocial Behaviour	.4675769***	.193327	.7418269
Freq of Smacking - Monthly ²	.4791188*	.0855676	.87267
Freq of Smack - Weekly/daily	.8281978***	.4060608	1.250335

* = 0.05, ** = 0.01, *** = 0.001

Reference Group:

¹No/Low Antisocial Behaviour

²No Smacking

Models to Test for Mediatory Effect of Parenting Behaviour and Maternal Attitude upon the association between Family Structure and Child Antisocial Behaviour (Teacher). Significant variables only shown.

Model 1	Coef	95% Confidence Interval	
Cohabiting	.2950732*	.0156134	.574533
Always Solo	.7579935*	.1023357	1.413651

* = 0.05, ** = 0.01, *** = 0.001

Reference Groups

¹Always Married

Model 2	Coef	95% CI	
Always Solo	.732997*	.1018376	1.410384
Monthly Smacking ³	.5584109**	.162639	.9541827
Weekly/Daily smacking	.9066013***	.4674476	1.345755

* = 0.05, ** = 0.01, *** = 0.001

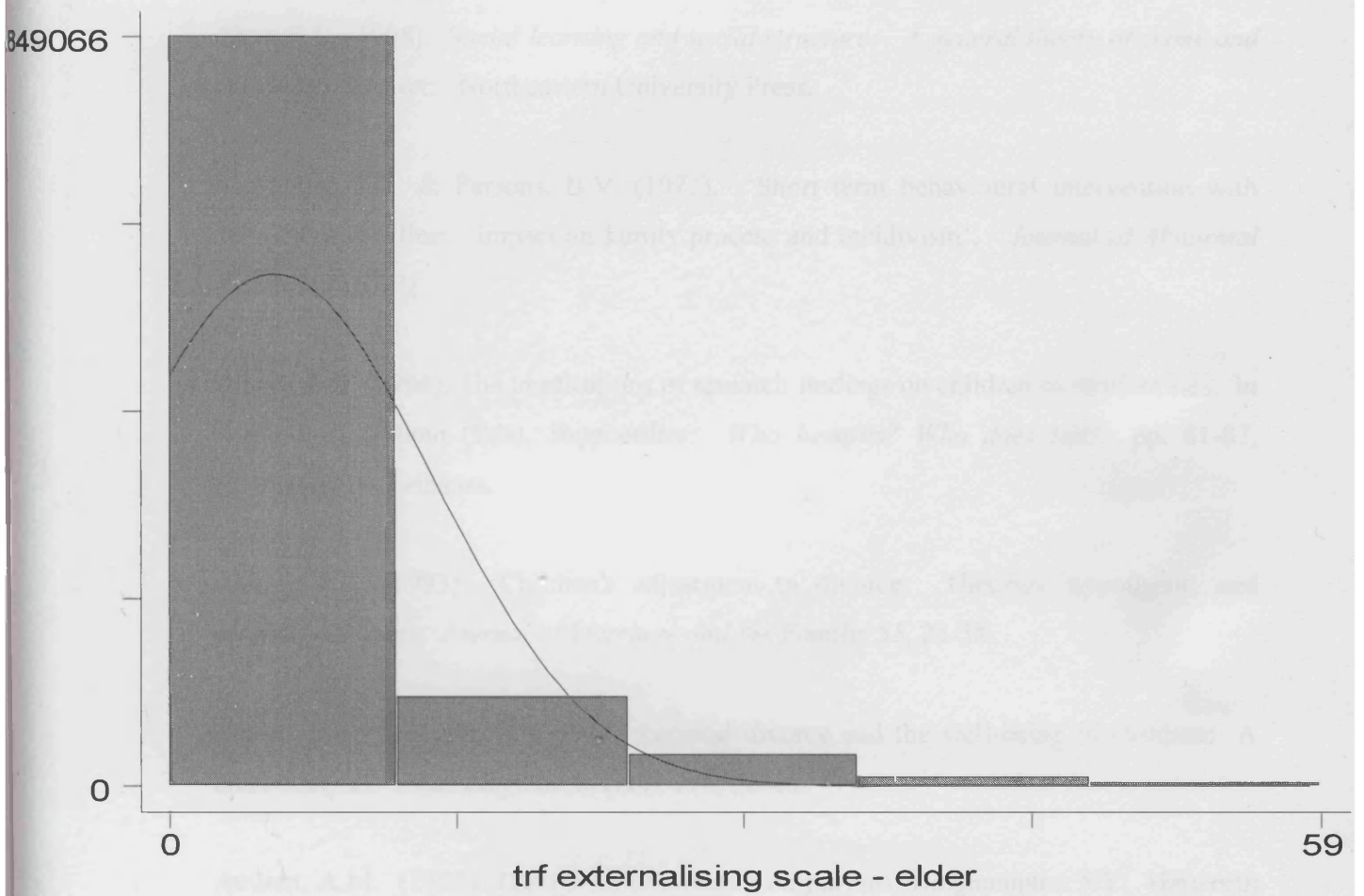
Reference Groups

¹Always Married

³No Smacking

Appendix 20

Distribution of Child Antisocial Behaviour Scores as Reported by the Teacher



BIBLIOGRAPHY

Achenbach, T.M. (1997). *Manuel for the young adult self-report and young adult behaviour checklist*. Burlington: University of Vermont Department of Psychiatry.

Achenbach, T.M. (1991). *Manual for the child behaviour checklist/4-18 and 1991 profile*. Burlington, VT: University of Vermont Department of Psychiatry.

Aker, R.L. (1998). *Social learning and social structure: A general theory of crime and deviance*. Boston: Northeastern University Press.

Alexander, J.F., & Parsons, B.V. (1973). 'Short term behavioural intervention with delinquent families: impact on family process and recidivism'. *Journal of Abnormal Psychology* 81(3)

Amato, P.R. (1994). The implications of research findings on children in stepfamilies. In A.Booth & J.Dunn (Eds), *Stepfamilies: Who benefits? Who does not?* pp. 81-87, Hillsdale, NJ: Erlbaum.

Amato, P.R. (1993). Children's adjustment to divorce: Theories, hypothesis, and empirical support. *Journal of Marriage and the Family*, 55, 23-38

Amato, P.R., & Keith, B. (1991). Parental divorce and the well-being of children: A meta-analysis. *Psychological Bulletin*, 110, 26-46.

Ambert, A.M. (1992). *The effects of children on parents*. Binghamton NY: Hatworth Press.

American Psychiatric Association (1994). *Diagnostic and statistical manual of mental disorders (4th ed.)*. Washington DC: Author

Aronfreed, J. (1969). The concept of internalisation. In D.A.Goslin (Ed). *Handbook of socialisation theory and research*. pp 263-323. Chicago: Rand McNally.

Arseneault, L., Moffitt, T. E., Caspi, A., Taylor, A., Riley, E. P., Rijisdijk, F. V. et al. (2003). Strong genetic effects on cross-situational antisocial behaviour among 5-year-old children according to mothers, teachers, examiner-observers, and twins' self-reports. *Journal of Child Psychology and Psychiatry*, 44, 832-848.

Asarnow, J.R., Tompson, M., Hamilton, E.B., Goldstein, M.J., & Guthre, D. (1994). Family expressed emotion, childhood onset depression and childhood onset schizophrenia spectrum disorders: Is expressed emotion a nonspecific correlate of child psychopathology or a specific risk factor for depression? *Journal of Abnormal Child Psychology*, 22. 129-146.

Asarnow, J.R., Tompson, M., Woo, S., & Cantwell, D.P. (2001). Is expressed emotion a specific risk factor for depression or a nonspecific correlate of psychopathology? *Journal of Abnormal Child Psychology*, 29, 573-583

ASBO Concern (2005). www.asboconcern.org.uk

Aseltine, R.H., & Kessler, R.C. (1993). Marital disruption and depression in a community sample. *Journal of Health and Social Behaviour*, 34, 237-251.

Asher, S.R., Erdley.C.A. and Gabriel, S.W. (1994). *Peer rejection in childhood*. New York: Cambridge University Press.

Astone, N.M., and McLanahan, S.S. (1991). Family structure, parental practices and high school completion. *American Sociological Review*, 56, 309-320.

Bandura, A. (1977). *Social Learning Theory*. Englewood Cliffs, NJ: Prentice-Hall, Inc.

Bandura, A. (1969). Social learning of moral judgements. *Journal of Personality and Social Psychology*, 11, 275-279

Bandura, A. & Walters, R. (1963). *Social learning and personality development*. New York, NY: Holt, Rinehart & Winston.

Bank, L., Forgatch, M.S., Patterson G.R., & Fetrow, R.A. (1993). Parenting practices of single mothers: Mediators of negative contextual factors. *Journal of Marriage and the Family*, 55, 371-384

Bank, L., & Patterson, G.R., (1992). The use of structural equation modelling in combining data from different types of assessment. In J.C.Rosen & P McReynolds (Eds). *Advances in Psychological Assessment*, Vol 8, pp41-74. New York: Plenum Press.

Barber, N. (2000). *Why parents matter*. Westport CT: Bergin & Garvey

Barlow, J., (1998). Parent-training programmes and behaviour problems: findings from a systematic review in Buchanan, A., & Hudson, B.L., (Eds) *Parenting, schooling, and children's behaviour*. Ashgate 89-109.

Barlow, J. (1997). *Systematic Review of the Effectiveness of Parent-Training Programmes in Improving Behaviour Problems in Children aged 3-10 Years*. Oxford: Health Services Research Unit.

Barnes-McGuire, J., & Earls, F. (1994). The test retest stability of the Five Minute Speech Sample in parents of disadvantaged minority children. *Journal of Child Psychology and Psychiatry and Allied Disciplines*, 35 (5), 971-979

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

Barrett, M., (2003). *Resettlement. Action for Prisoners Families* available at <http://www.actionpf.org.uk/resettlement.html>

Bates, J.E., Bayles, K., Bennett, D.S., Ridge, B., & Brown.M.M. (1991). Origins of externalising behaviour problems at eight years old age. In D.J.Pepler & K.H.Rubin (Eds). *The development and treatment of childhood aggression*, pp93-120, Hillsdale, NJ: Erlbaum.

Baumrind, D. (1991). Parenting styles and adolescent development. In J.Brooks-Gunn, R. Lerner, & A.C. Petersen (Eds). *The encyclopaedia of adolescence*, pp 746-758, New York: Garland

Baumrind, D., (1989). Rearing Competent Children in W.Damon (Eds), *Child Development Today and Tomorrow*. pp. 349-37, . San Francisco: Jossey-Bass.

Baumrind, D., (1971). Current patterns of parental authority. *Developmental Psychology Monograph, Part 2, 4(1)*, 1-103.

Becker, G.S., (1991). *A treatise on the family*. Cambridge, MA: Harvard University Press

Becker, G.S., (1964). *Human Capital*. New York: National Bureau of Economic Research.

Becker, G.S., & Thomas, N. (1986). Human capital and the rise and fall of families. *Journal of Labour Economics*, 4, 1-139.

Bell, R. Q. (1968). A reinterpretation of the direction of effects in socialization. *Psychological Review*, 75, 81-95.

Bell, R. Q. & Chapman, M. (1986). Child effects in studies using experimental or brief longitudinal approaches to socialization. *Developmental Psychology*, 22, 595-603.

Belsky, J. (1984). The determinants of parenting: A process model. *Child Development*, 55, 88-96.

Belsky, J., Robin, E., & Gamble, W. (1984). The determinants of parental competence: Toward a contextual theory. In M.Lewis & L.Rosenblum (Eds), *Beyond the Dyad: Social Connections*. 251-279. NY:Plenum

Bennett, N., Jarvis, L., Rowlands, O., Singleton, N., & Haselden, L. (1996). *Living in Britain: Results from the General Household Survey*. London: HMSO

Birth Statistics. (1996). Series FM1 No 23. London: HMSO

Bitensky, S.H. (1998). Spare the rod, embrace our humanity: Toward a new legal regime prohibiting corporal punishment of children. *University of Michigan Journal of Law Reform*, 31, 353-474

Blau, D. (1999). The effect of income on child development. *Review of Economics and Statistics*, 81 (2), 261-276

Blumstein, A., Farrington, D. P., & Moitra, S. (1985). Delinquency careers: Innocents, desisters, and persisters. In M.Tonry & N. Morris (Eds.), *Crime and Justice: An annual review of research (Vol. 6)*. pp. 187-219. Chicago, IL: University of Chicago Press.

Bohman, M. (1996). Predisposition to criminality: Swedish adoption studies in retrospect. In G.R. Bock & J.A.Goode (Eds). *Genetics of Criminal and Antisocial Behaviour* (Ciba Foundation Symposium No 194.) pp 99-114. Chichester: Wiley.

Booth, C.L., Rose-Krasnor, L., & Rubin, K.H. (1991). Relating preschooler's social competence and their mother's parenting behaviours to early attachment security and high-risk status. *Journal of Social and Personal Relationships*, 8, (3), 363-382

Bowlby, J. (1973). *Attachment and Loss*. (2nd ed.) New York: Basic Books.

Bradley, R.H. (1995). Environment and parenting. In M H Bornstein (Ed). *Handbook of Parenting*. pp235-261. Mahwah NJ: Lawrence Erlbaum

Bradshaw, J., (2000). *Poverty and the outcomes for children*. London: Family Policies Studies Centre.

Braver, S.L., & Bray, R.C., (1992). Assessing and compensating for self-selection bias of the family research sample. *Journal of Marriage and the Family*, 54, 925-939.

Bray, J.H., (1990). The developing family II: Overview and previous findings. *Paper presented at the annual meeting of the American Psychological Association*, Boston, MA.

Brestan, E.V., & Eyberg, S.M., (1998). Effective psychosocial treatment for conduct-disordered children and adolescents: 29 years, 82 studies, and 5,272 kids. *Journal of Clinical Child Psychology*, 27, 180-189.

Brewer, M., Clark, T., & Goodman, A. (2002). *The Government's Child Poverty Target: How much progress has been made?* London: The Institute of Fiscal Studies.

Bronfenbrenner, U., (1989). Ecological Systems Theory. *Annals of Child Development*, 6, 187-249.

Bronfenbrenner, U. (1979). *The Ecology of Human Development*. Cambridge, MA: Harvard University Press

Brooks-Gunn, J. & Duncan, G. J. (1997). The effects of poverty on children. *Future of Children*, 7, 55-71.

Brown, A., (2004). Anti-Social Behaviour, Crime Control and Social Control. *The Howard Journal of Criminal Justice* 43 (2), 203-211.

- Brown, J. (1990) The Focus on Single Mothers in Murray. In *'The Emerging British Underclass'*. IEA London
- Brown, G. (1999). 'A scar on the nation's soul'. *Poverty*, Vol 104, 8-10.
- Brown, G.W., & Rutter, M. (1966). The measurement of family activities and relationships: A methodological study. *Human Relations*, 19, 241-263.
- Bryan, E.M. (1993). Prenatal and perinatal influence on twin children: Implications for behavioural studies. In P. Propping, & T.J. Bouchard, (Eds) *Twins as a tool of behavioural genetics*, pp217-225. Oxford: John Wiley & Sons
- Buchanan, A., & Flouri, E. (2001). Recovery after age 7 from externalising behaviour problems: The role of risk and protective clusters. *Children and Youth Services Review*, 23, 899-914
- Buehler, C., Anthony, C., Krishnakumar, A., Stone, G., Gerard, J., Pemberton, S. (1997). Interparental conflict and youth problem behaviours: A meta-analysis. *Journal of Child Family Studies*, 6., 233-247
- Buehler, C., Krishnakumar, A., Stone, G., Anthony, C., Pemberton, S., Gerard, J., & Barber B.K. (1998). Interparental conflict styles and youth problem behaviours: A two sample replication study. *Journal of Marriage and the Family*, 60, 119-132.
- Burchardt, T., Le Grand, J., Piachaud, D. (2002). Introduction in Hills, J., Le Grand, J., Piachaud, D. (Eds). *Understanding Social Exclusion*. pp1-12. Oxford: Oxford University Press
- Butzlaff, R.L., & Hooley, J.M. (1998). Expressed emotion and psychiatric relapse. *Archives of General Psychiatry*, 55. 547-552.

Bynner, J. (1998). Which children are most at risk of becoming socially excluded. In *Comprehensive Spending Review: Cross departmental review of provision for young children: Supporting papers, Volume 1*. London: HM Treasury

Cabinet Office (2006). Press Release: Hilary Armstrong: Tackling Deep-Seated Social Exclusion (13th June). CAB/035/06

Campbell, S., (2002). *A review of antisocial behaviour orders*. Home Office Research Study No 236. London: Home Office Research and Statistics Directorate

Campbell, S. B., Pierce, E. W., Moore, G., Marakovitz, S., & Newby, K. (1996). Boys' externalising problems at elementary school age: Pathways from early behaviour problems, maternal control, and family stress. *Development and Psychopathology*, 8, 701-719.

Capaldi, D.M., & Patterson, G.R. (1991). Relation of parental transitions to boys' adjustment problems: 1. A linear hypothesis. 11. Mothers at risk for transitions and unskilled parenting. *Development Psychology*, 27, 489-504

Carey, G. (1994). Genetics and violence. In A.J.Reiss, Jr., K. A. Miczek, & J. A. Roth (Eds.), *Understanding and preventing violence: Vol. 2, Biobehavioural influences*. pp. 21-58. Washington, DC: National Academic Press.

Caspi, A., McClay, J., Moffitt, T.E., Mill, J., Martin, J., Craig, I.W., et al (2002). Role of genotype in the cycle of violence in maltreated children. *Science*, 297 (5582), 851-854.

Caspi, A., Moffitt, T. E., Newman, D. L., & Silva, P. A. (1996). Behavioural observations at age 3 predict adult psychiatric disorders: Longitudinal evidence from a birth cohort. *Archives of General Psychiatry*, 53, 1033-1039.

Caspi, A., Moffitt, T. E., Thornton, A., Freedman, D., Amell, J. W., Harrington, H. L. et al. (1996b). The Life History Calendar: A research and clinical assessment method for

collecting retrospective event-history data. *International Journal of Methods in Psychiatric Research*, 6, 101-114.

Caspi, A., Taylor, A., Moffitt, T. E., & Plomin, R. (2000). Neighbourhood deprivation affects children's mental health: Environmental risks identified in a genetic design. *Psychological Science*, 11, 338-342.

Caspi, A., Taylor, A., Smart, M. A., Jackson, J., Tagami, S., & Moffitt, T. E. (2001). Can women provide reliable information about their children's fathers? Cross informant agreement about men's antisocial behaviour. *Journal of Child Psychology and Psychiatry*, 42, 915-920.

Caspi, A., Henry, B., McGee, R.O., Moffitt T., & Silva, P.A. (1995). Temperamental origins of child and adolescent behaviour problems: From age three to age fifteen. *Child Development*, 66, 55-68.

Catalano, R.F., & Hawkins, J.D. (1996). The Social Development Model: A theory of antisocial behaviour. In J.D.Hawkins (Ed). *Delinquency and Crime: Current Theories*. 149-197. New York: Cambridge

Chen, X., Liu, M., & Li, D. (2000). Parental warmth, control and indulgence and their relations to adjustment in Chinese children: A longitudinal study. *Journal of Family Psychology*, 14, 401-419

Cherlin, A.J., (1992). *Marriage, divorce, remarriage: Social trends in the United States*. Cambridge, MA: Harvard University Press.

Cherlin, A.J., & Furstenberg, F.F., (1994). Stepfamilies in the United States: A reconsideration. *Annual Review of Sociology*, 20, 359-381.

Cherlin, A.J., Furstenberg, F.F., Chase-Lansdale, P.L., Kiernan, K., Robins, P.K., Morrissey, M.R., & Teitler, J.O. (1991). Longitudinal studies of effects of divorce on children in Great Britain and the United States. *Science*, 252, 1386-1389

Clarke, A.D.B., & Clarke, A.M. (1981). Sleeper effects in development: Fact or artefact. *Developmental Review* 1, 344-360

Clark, C., (2005). Home Office Website. 1st March 2005

Clarke, C., (2005). Daily Mirror 2nd March 2005

Cohen, P. (1996). Response: How can generative theories of the effect of punishment be tested? *Paediatrics*, 98. 834-6.

Cohen, R D., & Strayer, J., (1996). Empathy in conduct-disordered and comparison youth. *Developmental Psychology*, 32(6), 988-998.

Coie, J.D., Terry, R., Lenox., K., Lochman, J & Hyman, C. (1995). Childhood peer rejection and aggression as predictors of stable patterns of adolescent disorder. *Development and Psychopathology*, 7, 697-713

Coiro, M.J., & Emery, R.E. (1998). Do marriage problems affect fathering more than mothering? A quantitative and qualitative review. *Clinical Child and Family Psychology Review*, 1, 234-40

Coley, R.L., & Morris, J.E. (2001). Comparing Father and Mother Reports of Father involvement among Low-Income Minority Families.

Conger, R.D., Conger, K.J., & Elder, G.H. (1997). Family economic hardship and adolescent adjustment: Mediating and moderating processes. In G.J.Duncan & J. Brooks-Gunn (Eds). *Consequences of growing up poor*, pp288-310, New York: Russell Sage.

Conger, R.D., & Elder, G.H. (1994). *Families in troubled times: Adapting to change in rural America*. New York: Aldine de Gruyter

Conger, R.D., Conger, K.J., Elder, G.H., & Lorenz, F.O. (1993). Family economic stress and adjustment of early adolescent girls. *Developmental Psychology* 29, 206-219.

Conger, R.D., Conger, K.J., Elder, G., Jr., Lorenz, F.O., Simons, R.L., & Whitbeck, L.B. (1992). A family process model of economic hardship and adjustment in early adolescent boys. *Child Development*, 63, 526-41.

Conger, K.J., Rueter, M.A., & Conger, R.D. (2000). The role of economic pressure in the lives of parents and their adolescents. The Family Stress Model. In L.J.Crockett & R.K.Silbersisen (Eds), *Negotiating adolescence in times of social change*. pp201-233. New York: Cambridge University Press

Conseur, A., Rivara, F.O., Barnowski, R., & Emmanuel, I. (1997). Maternal and perinatal risk factors for later delinquency. *Paediatrics*, 99, 785-790

Costello, E. J. (1989). Child psychiatric disorders and their correlates: A primary care paediatric sample. *Journal of the American Academy of Child and Adolescent Psychiatry*, 28, 851-855.

Coughlin, C., & Vuchinich, S. (1996), Family experience in preadolescent and the development of male delinquency. *Journal of Marriage and the Family*, 58, 491-501.

Cressey, D.R. (1953). *Other people's money: A study in the social psychology of embezzlement*. Glencoe, NY: Free Press

Crockenberg, S.B., & Covey, S.L. (1991). Marital conflict and externalising behaviour in children. In D.Cicchetti & S.Toth (Eds). *Rochester Symposium on Developmental Psychopathology. Vol 3. Research and clinical contributions to a theory of developmental psychopathology*. Rochester, NY: University of Rochester Press.

Cummings, E.M., & Davies, P.T. (1994). *Children and marital conflict: The impact of family dispute and Resolution*. London: The Guilford Press

Cummings, E.M., Davies, P.T., & Simpson, K.S. (1994). Marital conflict, gender and children's appraisal and coping efficacy as mediators of child adjustment. *Journal of Family Psychology*, 8, 141-149.

Cummings, E.M., Zahn-Waxler, C., & Radke-Yarrow, M. (1981). Young children's responses to expressions of anger and affection by others in the family. *Child Development*, 52, 1274-1282.

Dahrendoff (1985). The Times July 1985.

Daley, D., Sonuga-Barke, E.J.S., & Thompson, M. (2003). Assessing expressed emotion in mothers of preschool AD/HD children: Psychometric properties of a modified speech sample. *British Journal of Clinical Psychology*, 42 (1), 53-67.

Danziger, S., & Waldfogel, J., (2000). Investing in Children: What do we know? What should we do? *CASE paper 34*, London: London School of Economics.

Davies, P.T., & Cummings, E.M. (1994). Marital conflict and child adjustment: An emotional security hypothesis. *Psychological Bulletin*, 116, 387-411

Day, R.D., Peterson, G.W., and McCracken, C. (1998). Predicting Spanking of younger and older children by mothers and fathers. *Journal of Marriage and the Family*, 60, 79-94.

Delaney-Black, V., Covington, C., Templin, R., et al (2000). Teacher assessed behaviour of children prenatally exposed to cocaine. *Pediatrics*, 106 (4) 782-791.

Demo, D.H., & Acock, A.C. (1996). Family structure, family process, and adolescent well-being. *Journal of Research on Adolescence*. 6, 457-488.

DFES. (2003). *Every Child Matters*. London: DFES

DFES. (2004). *Children Act 2004*. London: HMSO

Dishion, T.J., & Patterson, G.R. (1999). Model building in developmental psychopathology: A pragmatic approach to understanding and intervention. *Journal of Clinical Child Psychology*, 28, 502-512.

Dodge, K.A., Bates, J.E., and Pettit, G.S. (1990) Mechanisms in the cycle of violence. *Science*, 250, 1678-1683

Dodge, K.A., Pettit, G.S., Bates, J.E., & Valente, E. (1995). Social information processing patterns partially mediate the effect of early physical abuse on later conduct problems. *Journal of Abnormal Psychology*, 104, 632-643.

Dodge, K.A. (2003). Do social information processing patterns mediate aggressive behaviour?. In Lahey, B.B., Moffitt, T.E., & Caspi, A. (Eds), *Causes of Conduct Disorder and Juvenile Delinquency*. New York: Guilford Press.

Dodge, K.A., Pettit, G.S., & Bates, J.E. (1994). Socialisation mediators of the relation between socio-economic status and child conduct problems. *Child Development*, 65, 649-665.

Dodge, K.A., Pettit, G.S., McClaskey, C.L., and Brown, M.M. (1986). Social competence in children. *Monographs of the Society for Research in Child Development*, 51 (2, Serial No.213).

Doherty, P., Hall, M & Kinder, K., (2003). On Track Thematic Report: Assessment, Referral and Hard to Reach Groups. *DFES Research Report RR475*. London: DFES

DSS. (2000). *Households Below Average Income 1994/5-1998/9*, Leeds, Corporate Document Services.

DSS. (1999). *Opportunity for All: Tackling poverty and social exclusion*, First Annual Report, Cm 4445, London: The Stationary Office.

Dubow, E.F., & Ippolito, M.F. (1994). Effects of poverty and quality of the home environment on chances in the academic and behavioural adjustment of elementary school-age children. *Journal of Clinical Child Psychology*, 23, 401-412.

Duffy, K. (1995). *Social exclusion and human dignity in Europe*. Strasbourg: Council of Europe

Duncan, G.J., & Brooks-Gunn, J. (2000). Family Poverty, Welfare Reform and Child Development. *Child Development* 71 (1), 188-196

Duncan, G.J., Brooks-Gunn, J., & Klebanov, P.K. (1994). Economic deprivation and early childhood development. *Child Development*, 65, 296-318

Duncan, G. J., Brooks-Gunn, J., & Klebanov, P. K. (1997). Economic deprivation and early childhood development. *Child Development*, 65, 296-318

Duncan, G. J., Yeung, W. J., Brooks-Gunn, J., & Smith, J. R. (1998). How much does childhood poverty affect the life chances of children? *American Sociological Review*, 63, 406-423.

Dunn, J., & Plomin, R., (1986). Determinants of maternal behaviour toward three year old siblings. *British Journal of Developmental Psychology* 4, 127-137.

Earls, F. & Jung, K. G. (1987). Temperament and home environment characteristics as causal factors in the early development of childhood psychopathology. *Journal of the American Academy of Child and Adolescent Psychiatry*, 26, 491-498.

Egeland, B., Carlson, E., & Sroufe, L.A. (1993). Resilience as process. *Development and Psychopathology*, 5, 517-28.

Elder, G. H., Jr. (1979). Historical change in life patterns and personality. In P.B.Baltes & O. G. Brim, Jr. (Eds.), *Life-span development and behaviour*. pp.117-159. New York: Academic Press.

Elder, G.H. & Caspi, A. (1988). Economic stress in lives: *Developmental perspectives*. *Journal of Social Issues*, 44, 25-45.

Elliott, B.J., & Richards, M.P.M. (1991). Children and divorce: Educational performance and behaviour, before and after parental separation. *International Journal of Law and the Family*, 5, 258-276.

EPOCH-USA (2000). *Legal reforms: Corporal punishment of children in the family*. Retrieved June 30, 2001, from <http://www.stophitting.com/legalReform.php>

Eron, L.D., Huesmann, L.R., & Zelli, A. (1991). The role of parental variables in the learning of aggression. In D.J. Pepler & K.H.Rubin (Eds), *The development and treatment of childhood aggression* (pp169-188). Hillsdale, NJ: Lawrence Erlbaum.

Farrington, D.P. (2000), Psychosocial predictors of adult antisocial personality and adult convictions. *Behavioural Sciences and the Law*, 18, 605-22

Farrington, D.P. (1997). Early prediction of violent and nonviolent youthful offending. *European Journal on Criminal Policy and Research* 5 (2), 51-66

Farrington, D.P. (1996). *Understanding and preventing youth crime: Social policy findings*. York: Joseph Rowntree Foundation

Farrington, D.P., (1995). The development of offending and antisocial behaviour from childhood: Key findings from the Cambridge Study in Delinquent Development. *Journal of Child Psychology and Psychiatry*, 36, 929-64.

Farrington, D.P. (1994). Childhood, adolescent and adult features of violent males. In L.R.Huesmann (Ed). *Aggressive behaviour: Current perspectives* pp 215-240. New York: Plenum Press

Farrington, D.P. (1991). Childhood aggression and adult violence: Early precursors and later-life outcomes. In D.J.Pepler & K.H.Rubin (Eds). *The development and treatment of childhood aggression*. pp 5-29. Hillsdale, NJ: Lawrence Erlbaum

Farrington, D.P. (1978). The family backgrounds of aggressive youths. In L. Hersov, M.Berger, and D.Shaffer, (Eds). *Aggression and Antisocial Behaviour in Childhood and Adolescence*. Oxford: Pergamon.

Farrington, D.P., Barnes, G.C., & Lambert, S. (1996). The concentration of offending in families. *Legal and criminological Psychology* 1, 47-63.

Farrington, D.P., & Hawkins, J.D., (1991). Predicting participation, early onset, and later persistence in officially recorded offenders. *Criminal Behaviour and Mental Health*, 1, 1-33.

Farrington, D.P., & Loeber, R. (1999). Transatlantic replicability of risk factors in the development of delinquency. In P.Cohen, C.Slomkowski & L.N.Robins (Eds), *Historical and geographical influences on psychopathology*. pp 299-329. Mahway, NJ: Lawrence Erlbaum

Farrington, D.P., & West, D.J. (1993). Criminal, penal and life histories of chronic offenders: Risk and protective factors and early identification. *Criminal Behaviour and Mental Health*, 3, 492-523

Fauber, R.L., & Long, N., (1991). Children in context: The role of the family in child psychotherapy. *Journal of Consulting and Clinical Psychology, 59*, 813-820.

Fauber, R.L., Forehand, R., Thomas, A.M., & Wierson, M. (1990). A mediational model of the impact of marital conflict on adolescent adjustment in intact and divorced families: The role of disrupted parenting. *Child Development, 61*, 1112-1123

Feldman, E., & Dodge, K.A. (1987). Social information processing and sociometric status: Sex, age, and situational effects. *Journal of Abnormal Child Psychology, 15*, 211-227.

Fergusson, D.M., & Lynskey, M.T. (1996) Adolescent resiliency to family adversity. *Journal of Child Psychology and Psychiatry 37*, 281-292

Ferri, E. (1984). *Step Children: A National Study*. Windsor: NFER-Nelson

Ferri, E. (1976). *Growing up in a one parent family*. Windsor: National Foundation for Educational Research Publishing Company.

Fincham, F. D. (1994). Understanding the association between marital conflict and child adjustment: Overview. *J.Family Psych., 8*, 123-127.

Fine, M.A., & Kurdek, L.A. (1995). Relation between marital quality and (step) parent-child relationships quality for parents and stepparents in stepfamilies. *Journal of Family Psychology, 9*, 216-223.

Frick. P.J. (1998). *Conduct disorders and severe antisocial behaviour*. New York: Plenum

Friedman, S., & Schonberg, S.K. (1996). Consensus Statements. *Paediatric*, 98: 583

Furstenberg, F.F. (1993). How families manage risk and opportunity in dangerous neighbourhoods. In W.J.Wilson (Ed), *Sociology and the public agenda*. pp 231-258. Newbury Park, CA: Sage.

Furstenberg, F.F. (1988). Good dads....bad dads: Two faces of fatherhood. In A.J. Cherlin (Ed). *Changing American Family and Public Policy*. Washington DC: The Urban Institute Press

Furstenberg, F.F., & Nord. C.W. (1985). Parenting apart: Patterns of child-rearing after marital disruption. *Journal of Marriage and the Family*, 47, 893-904.

Galambos, N.L., & Silberisen, R.K. (1987). Income change, parental life outlook and adolescent expectations for job success. *Journal of Marriage and the Family*, 49, 141-149.

Garbarino, J. (1996). Invited Commentary: CAN reflections on 20 years of searching. *Child Abuse and Neglect*, 20, 157-160

Garmezy, N., Masten, A. S., & Tellegen, A. (1984). The study of stress and competence in children: A building block for developmental psychopathology. *Child Development*, 55, 97-111.

Gerhardt, S., (2004). *Why love matters*. London: Routledge

Geronimus, A.T., & Korenman, S. (1992). The socioeconomic consequences of teen childbearing reconsidered. *Quarterly Journal of Economics*, 107, 1187-214

Gershoff, E.T. (2002). Corporal punishment by parents and associated child behaviours and experiences. A meta-analytic and theoretical review. *Psychological Bulletin*, 128 (4), 539-579

Ghate, D., & Ramella, M. (2002). *Positive parenting: The effectiveness of the Youth Justice Board's Parenting Programme*. London: Youth Justice Board

Ghate, D., & Hazel, N. (2002). *Parenting in poor environments: stress, support, and coping*. London: Jessica Kingsley

Gordon, D., Adelman, A., Ashworth, K., Bradshaw, J., Levitas, R., Middleton, S., Pantazis, C., Patsios, D., Payne, S., Townsend, P., & Williams, J. (2000). *Poverty and Social Exclusion in Britain*, York: Joseph Rowntree Foundation.

Gorman-Smith, D., Tolan, P.H., Loeber, R & Henry, D.B. (1998). Relation of family problems to patterns of delinquent involvement among urban youth, *Journal of Abnormal Child Psychology*, 26 (5) 319-333

Gottman, J. M. & Katz, L. F. (1989). Effects of marital discord on young children's peer interaction and health. *Developmental Psychology*, 25, 373-381.

Gottfredson, M., & Hirschi, T. (1990). *A General Theory of Crime*. Stanford, CA: Stanford University Press.

Gould, W., & Sribney, W. (1999). *Maximum likelihood estimation with STATA*. College Station, TX: Stata Press.

Goutz, K. (1981). Children's initial aggression level and the effectiveness of intervention strategies in moderating television effects on aggression. Cited in Goutz, K.R. (1987). Attention and social problem-solving as correlates of aggression in preschool males. *Journal of Abnormal Psychology*, 15, 181-197.

Graham & Bowling (1995). *'Young People and Crime'*. Home Office Research Study 145.

Graxiano, A.M., Hamblen, J.L., & Plante, W.A. (1996). Subabusive violence in childrearing in middle-class American families. *Paediatrics*, 98, 845-851.

Graziano, W.G. (1994). The development of agreeableness as a dimension of personality. In C.F.Halverson, G.A.Kohnstamm & R.P.Martin (Eds) *The Developing Structure of Temperament and Personality from Infancy to Adulthood*. pp339-354. Hillsdale NJ: Lawrence Erlbaum

Grotberg, E.H. (1995). *A guide to promoting resilience in children: Strengthening the human spirit*. The Hague, Netherlands: The Bernard van Leer Foundation.

Grych, J.H. & Fincham, F.D. (1990). Marital conflict and children's adjustment: A cognitive-contexts framework. *Psychological Bulletin*, 108, 267-90

Guerin, D.W., Gottfried, A.W., & Thomas, C.W. (1997). Difficult temperament and behavioural problems: A longitudinal study from 1.5 to 12 years. *International Journal of Behavioural Development*, 21, (1), 71-90

Halsey, K., Ashworth, M., & Harland, J. (2002). *A summary of NFER's evaluation of the Safe Group family relationships and parenting programme*. London: NFER

Hanson, T.L., McLanahan, S., & Thomson, E. (1997). Economic resources, parental practices, and children's well-being. In G.J.Duncan and J.Brooks-Gunn (Eds). *Consequences of growing up poor*. Russell Sage Foundation.

Harold, G.T., & Conger, R.D. (1997). Marital conflict and adolescent distress: The role of adolescent awareness. *Child Development*, 68, 333-350.

Hartup, W., & Laurson, B. (1993). Conflict and context in peer relations. In C. Hart (Ed) *Children on playgrounds: Research and perspectives and applications*. pp44-84. Albany NY: SUNY Press

Hashima, P.Y., & Amato, P.R., (1994). Poverty, social support, and parental behaviour. *Child Development*, 65, 394-403.

Haveman, T.L., & Wolfe, B., (1994). *Succeeding generations: On the effects of investments in children*. New York: Russell Sage Foundation

Henn, F.A., Bardwell, R., & Jenkins, R.L. (1980). Juvenile delinquency revisited: Adult criminal activity. *Archives of General Psychiatry*, 37, 1160-3.

Henricson, C & Grey, A. (2001). *Understanding discipline: an overview of child discipline practices and their implications for family support*. London: National Family and Parenting Institute.

Henry, B., Moffitt, T.E., Robins, L., Earls, F., & Silva, P.A. (1993). Early family predictors of child and adolescent antisocial behaviour: Who are the mothers of delinquents? *Criminal Behaviour and Mental Health*, 3, 97-118.

Hetherington, E.M., & Clingempeel, W.G. (1992) Coping with marital transitions: A family systems perspective. *Monographs of the Society for Research in Child Development*, 57 (Series No.227)

Hewitt, L. E. & Jenkins, R. L. (1946). *Fundamental patterns of maladjustment: The dynamics of their origin*. Chicago, IL: State of Illinois.

Hibbs, E.D., Hamburger, S.D., Lenane, M., Rapoport, J.L., Kruesi, M.J.P., Keysor, C.S., & Goldstein, M.J. (1991). Determinants of expressed emotion in families of disturbed and normal children. *Journal of Child Psychology and Psychiatry and Allied Disciplines*, 32, 757-770

Hills, J. (2001). Measurement of income poverty and deprivation: The British approach. In *Indicators of Progress: A discussion of approaches to monitor the Government's strategy to tackle poverty and social exclusion*. Report of the workshop held on 19th July 2000 organised by the Department of Social Security and Centre for Analysis of Social Exclusion. *CASEReport 13*, London: London School of Economics.

Hirschi, T. (1969). *Causes of delinquency*. Berkeley: University of California Press

Hirshfeld, D.R., Biederman, J., Brody, L., Faraone, S.V., & Rosenbaum, J.F. (1997). Associations between expressed emotion and child behavioural inhibition and psychopathology: A pilot study. *Journal of the American Academy of Child and Adolescent Psychiatry*, 36. 205-213.

Hobcraft, J. (2003). Continuity and change in pathways to young adult disadvantage: Results from a British Birth Cohort. *CASEpaper 66*, London: London School of Economics.

Hobcraft, J. (1998). Intergeneration and life course transmission of social exclusion, *CASEpaper 15*. London: London School of Economics.

Hobcraft, J., & Kiernan, K. (1999). Childhood poverty, early motherhood, and adult social exclusion. *CASEpaper 28*. London: London School of Economics

Hodge, M. (2004). Press Release 2004/0210. London: DFES

Holden, G. W. & Ritchie, K. L. (1991). Linking extreme marital discord, child rearing, and child behaviour problems: Evidence from battered women. *Child Development*, 62, 311-327.

Home Office (1998). *Crime and Disorder Act 1998*. London: Home Office

Home Office (2002). *Narrowing the Justice Gap*. London: Home Office

Home Office (2003). *Respect and Responsibility: Taking a stand against antisocial behaviour*. London: Home Office.

Home Office (2004). *Home Office Strategic Plan*. London: Home Office

Home Office (2005). *Yobs will face the consequences of their Action – Charles Clarke*.

Home Office Press Release 042/2005

Home Office (2006). *Respect Action Plan*. London: Home Office

Howard, S. & Johnson, B. (2000). What makes the difference? Children and teachers talk about resilient outcomes for children at risk. *Educational Studies*, 26, 321-339.

Howe, G.W., Reiss, D., & Yuh, J. (2002). Can prevention trials test theories of etiology. *Development and Psychopathology*, 14 673-694.

Huesmann, L. R., Eron, L. D., Lefkowitz, M. M., & Walder, L. O. (1984). Stability of aggression over time and generations. *Developmental Psychology*, 20, 1120-1134.

Hunter, C., Nixon, J., & Shayer, S., (2000). *Neighbour nuisance, social landlords and the law*. Chartered Institute of Housing in association with the Joseph Rowntree Foundation.

Ishii-Kuntz, M., & Ihinger-Tallman, M. (1991). The subjective well-being of parents. *Journal of Family Issues*, 12 (1), 58-68

Jaffee, S.R., Moffitt, T.E., Caspi, A., & Taylor, A. (2003). Life with (or without) father: The benefits of living with two biological parents depend on the father's antisocial behaviour. *Child Development*, 74. 109-126.

Jaffee, S.R., Caspi, A., Moffitt, T.E., Taylor, A., & Dickson, N. (2001). Predicting early fatherhood and whether young fathers live with their children: Prospective findings and policy recommendations. *Journal of Child Psychology and Psychiatry*, 42, 803-815.

Jenkins, J.M., & Smith, M.A. (1991). Marital disharmony and children's behavioural problems: Aspects of poor marriage that affect children adversely. *Journal of Child Psychology and Psychiatry*, 32, 793-810.

Jouriles, E.N., Barling, J., & O'Leary, K.D. (1987). Predicting child behaviour problems in martially violent families. *Journal of Abnormal Child Psychology*, 15, 165-173.

Jouriles, E. N., Murphy, C. M., & O'Leary, K. D. (1989). Interspousal aggression, marital discord, and child problems. *Journal of Consulting and Clinical Psychology*, 57, 453-455.

Kazdin, A.E., (1987). Treatment of antisocial behaviour in children: current status and future directions. *Psychological Bulletin*, 102, 187-203

Kazdin, A.E., & Wassell, G. (2000). Therapeutic changes in children, parents, and families resulting from treatment of children with conduct problems. *Journal of the American Academy of Child and Adolescent Psychiatry*, 39, 414-420.

Keenan, K., & Wakschlag, L.S. (2000). More than the terrible twos: The nature and severity of preschool behaviour problems. *Journal of Abnormal Child Psychology*, 28, 33-46

Kiernan, K. (2002). Disadvantage and Demography – Chicken and Egg. In J.Hills, J Le Grand & D Paichaud (Eds). *Understanding Social Exclusion*. pp84-97. Oxford: Oxford University Press

Kiernan, K. (2000) European Perspectives on Union Formation in Waite, L., Bachrach, C., Hindin, M., Thomson E., Thornton, A., & Aldine de Gruyter (Eds). *Ties that Bind: Perspectives on Marriage and Cohabitation*, pp 40-58,

Kiernan, K. (1999). Childbearing outside marriage in Western Europe. *Population Trends*, 98, 11-20.

Kiernan, K. (1998). Parenthood and family life in the United Kingdom. *Review of Population and Social Policy*, 7, 63-81

Kiernan, K.E. (1997). The legacy of parental divorce: Social, economic and demographic experiences in adulthood. *CASEpaper1*. London: London School of Economics.

Kiernan, K. (1995). Transition to parenthood: Young mothers, Young fathers: Associated factors and later life experiences. *Welfare State Programme Discussion Paper No 113*. London: London School of Economics.

Kiernan, K.E. (1992). The impact of family disruption in childhood on transitions made in young adult life, *Population Studies*, 46 (2), 213-234.

Kiernan, K., & Smith, K. (2003). Unmarried parenthood: New insights from the Millennium Cohort Study. *Population Trends*, 114, 26-33

Kolbo, J.R., Blakely, E.H., & Engleman, D. (1996). Children who witness domestic violence. A review of empirical literature. *Journal of interpersonal Violence*, 11, 281-293.

Kolvin, I., Miller, F.J.W., Fleeting, M., & Kolvin, P.A. (1988). Social and parenting factors affecting criminal-offence rates: Findings from the Newcastle Thousand-Family Study (1947-1980). *British Journal of Psychiatry*, 152, 80-90.

Krueger, R.F., Moffitt, T.E., Caspi, A., Bleske, A., & Silva, P.A. (1998). *Behavioural Genetics* 28 (3), 173-186

Krueger, R.F., Schmutte, P.S., Caspi, A., Moffitt, T.E., Campbell, K., & Silva, P.A., (1994). Personality traits are linked to crime among men and women: evidence from a birth cohort. *Journal of Abnormal Psychology*, 103 (2), 328-338.

Krueger, R.F., Caspi, A., & Moffitt, T.E. (2000). Epidemiological Personology: The unifying role of personality in population-based research on problem behaviours. *J Pers*, 68 (6), 967-998.

Kuczynski, L., and Kochanska, G. (1990) Development of children's non-compliance strategies from toddlerhood to age 5. *Developmental Psychology* 26, 398-408

Lahey, B.B., & Waldman, I.D., (2003). A developmental propensity model of the origins of conduct problems during childhood and adolescence. In B.B.Lahey, T.E.Moffitt & A.Caspi (Eds). *Causes of Conduct Disorder and Juvenile Delinquency*. pp76-117. New York: Guilford Press.

Landy, S. & Peters, R.D. (1992). Toward an understanding of a developmental paradigm for aggressive conduct problems during the preschool years. In R.D.Peters, R.L.McMahon & V.L.Quinsey (Eds), *Aggression throughout the life span*. pp1-30. Newbury Park, CA: Sage.

Lee, C. L. & Bates, J. E. (1985). Mother-child interaction at age two years and perceived and difficult temperament. *Child Development*, 56, 1314-1323.

Levitas, R. (1998). *The inclusive society: Social Exclusion and New Labour*. Basingstoke: Macmillan

Limson, R., Goldman, D., Roy, A., Lamparski, D., Ravitz, B., Adinoff, B., & Linnoila, M. (1991). Personality and cerebrospinal fluid monoamine metabolites in alcoholics and controls. *Archives of General Psychiatry*, 48, 437-441.

Lipsey, M.W., and Derzon, J.H. (1998). Predictors of violent or serious delinquency in adolescence and early adulthood: A synthesis of longitudinal research. In R.Loeber & D.P.Farrington (Eds), *Serious and violent juvenile offenders: Risk factors and successful interventions*. pp 313-345. Thousand Oaks, CA: Sage

Local Government Association (LGA) (2004). *Sustainable solutions to antisocial behaviour: Local Government's joined-up approaches to tackle antisocial behaviour*. Available from www.lga.gov.uk

Loeber, R., and Dishion, T.J. (1983). Earlier predictors of male delinquency: A review. *Psychological Bulletin* 94, 68-99.

Loeber, R., & Farrington, D.P. (2001). *Child Delinquents: Development, intervention and service needs*. Thousand Oaks, CA: Sage

Loeber, R., & Farrington, D.P. (1998). *Serious and violent juvenile offender: Risk factors and successful interventions*. Thousand Oaks, CA: Sage

Loeber, R., Green, S.M., Lahey, B.B., Frick, P.J., & McBurnett, K. (2000). Findings on disruptive behaviour disorders from the first decade of the Developmental Trends Studies. *Clinical Child and Family Psychology Review*, 3 (1), 37-60.

Loeber, R., and Hay, D.F. (1994). Developmental approaches to aggression and conduct problems. In M Rutter & D.F.Hay (Eds), *Development through life: A handbook for clinicians*, pp488-516. Oxford: Blackwell Scientific.

Loeber, R., & Stouthamer-Loeber, M. (1986). Family factors as correlates and predictors of juvenile conduct problems and delinquency. In M.Tonry & N.Morris (Eds), *Crime and Justice*. Vol 8, pp. 29-149. Chicago: University of Chicago Press.

Losel, F., & Bender, D. (2003). Protective Factors and Resilience in D.P.Farrington & J.W.Coid (Eds). *Early Prevention of Adult Antisocial Behaviour*. Cambridge: Cambridge University Press.

Luthar, S.S., Cicchetti, D., & Becker, B. (2000). The construct of resilience: A critical evaluation and guidelines for future work. *Child Development, 71*, 573-5.

Lyons, M. J., Truen, W. R., Eisen, S. A., Goldberg, J., Meyer, J. M., Faraone, S. V. et al. (1995). Differential habitability of adult and juvenile antisocial traits. *Archives of General Psychiatry, 52*, 906-915.

Maccoby, E.E., & Martin, J.A., (1983). Socialisation in the context of the family: Parent-child interaction. In P H Mussen (Ed) & E.M.Hetherington (Vol Ed). *Handbook of Child Psychology: Vol 4. Socialisation, Personality, and Social Development*. pp1-101. New York: Wiley

Mack, J., & Lansley. G. (1985). *Poor Britain*. London: Allen & Unwin.

Magana, A.B., Goldstein, M.J., Karno, D.J., Miklowitz, J.J., & Falloon, I.R.H. (1986). A brief method for assessing expressed emotion in relatives of psychiatric patients. *Psychiatry Research, 17*, 203-212

Magdol, L., Moffitt, T. E., Caspi, A., & Silva, P. A. (1998). Developmental antecedents of partner abuse: A prospective-longitudinal study. *Journal of Abnormal Psychology, 107*, 375-389.

Manlove, J. (1997). Early motherhood in an intergenerational perspective: The experiences of a British cohort. *Journal of Marriage and the Family, 59*, 263-279.

Mannuzza, S., Klein, R.G., Bonagura, N., Malloy, P., Giampino, T.L. & Addalli, K.A. (1991). Hyperactive boys almost grown up. *Archives of General Psychiatry, 48*, 77-83.

Margolin, G. (1998). Effects of domestic violence on children. In P.K.Trickett & C.J.Schellabach (Eds), *Violence against children in the family and the community*. pp 4-57. Washington, DC: American Psychological Association.

Marsh, A., & McKay, S. (1993). *Families, Work and Benefits*. Policy Studies Institute

Martin, N., Boomsma, D. I., & Machin, G. (1997). A twin-pronged attack on complex traits. *Nature Genetics*, 17, 387-392.

Martin, J.A., Maccoby, E.E., & Jacklin, C.N. (1981). Mothers' responsiveness to interactive bidding and nonbidding in boys and girls. *Child Development* 52, 1064-1067

Maughan, B. & Lindelow, M. (1997). Secular change in psychological risks: the case of teenage motherhood. *Psychological Medicine*, 27, 1129-1144.

Maughan, B., Pickles, A., Hagell, A., Rutter, M., & Yule, W. (1996). Reading problems and antisocial behaviour: Developmental trends in comorbidity. *Journal of Child Psychology and Psychiatry*, 37, 405-18.

Mayer, S.E., (1997). *What money can't buy: Family income and children's life chances*. Cambridge, MA: Harvard University Press

Maynard, R.A. (1997). *Kids having Kids: Economic costs and social consequences of teen pregnancy*. Washington, DC: Urban Institute Press.

McCarty, C.A., & Weisz, J.R. (2002). Correlates of expressed emotion in mothers of clinically-referred youth: An examination of the five minute speech sample. *Journal of Child Psychology and Psychiatry and the Allied Disciplines*, 43, 759-768

McCord, J. (1995). *Coercion and Punishment in Long-term Perspectives*. New York: Cambridge University Press

McCord, J. (1991). Family relationships, juvenile delinquency, and adult criminality. *Criminology*, 29, 397-417.

McCord, J. (1979). Some child-rearing antecedents of criminal behaviour in adult men. *Journal of Personality and Social Psychology*, 8, 1477-1486

McCulloch, A., Wiggins, R.D., Joshi, H.E., and Sachdev, (2000). Internalising and externalising children's behaviour problems in Britain and the US: Relationship to family resources. *Children and Society*, 14, 368-383.

McGue, M., Bacon, S., & Lykken, D. T. (1993). Personality stability and change in early adulthood: A behavioural genetic analysis. *Developmental Psychology*, 29, 96-109.

McKay, S., & Marsh, A. (1994). *Lone Parents and Work*. London: HMSO

McKibben, L., De Vos, E., & Newberger, E. H. (1989). Victimization of mothers of abused children: A controlled study. *Pediatrics*, 84, 531-535.

McLanahan, S. & Sandfur, G. (1994). *Growing up with a single parent*. Cambridge, MA: Harvard University Press.

McLanahan, S., & Booth, K. (1989). Mother only families: Problems, prospects and politics. *Journal of Marriage and the Family*, 51, 557-80

McLeod, J. D. & Shanahan, M. J. (1993). Poverty, parenting, and children's mental health. *American Sociological Review*, 58, 351-366.

McLoyd, V. (1990). The impact of economic hardship on Black families and children: Psychological distress, parenting, and socioemotional development. *Child Development* 61, 311-346

- McLoyd, V., (1989). Socialisation and development in a changing economy. The effects of paternal job and income loss on children. *American Psychologist*, 44, 293-302.
- McLoyd, V., Jayaratne, T.E., Ceballo, R., & Borquez, J. (1994). Unemployment and work interruption among African American single mothers: Effects on parenting and adolescent socioemotional functioning. *Child Development*, 65, 562-589
- McMahon, R. & Foreland, R. (1988). Conduct disorders. In E.J.Mash & L.G.Terdal (Eds). *Behavioural assessment of childhood disorders*. New York: Guilford.
- Meltzer, R., Gatward, R., Goodman, R., & Ford, T. (2000). *The mental health of children and adolescents in Great Britain*. London: Office of National Statistics
- Mezzacappa, E., Tremblay, R.E., Saul, J.P., Kindlon, D., Arseneault, L., Sequin, J., Pihl, R.O., & Earls, F. (1997). Anxiety, antisocial behaviour, and heart rate regulation in adolescent males. *Journal of Child Psychology and Psychiatry*, 38 (4), 457-469.
- Miles, D.R., & Carey, G. (1997). The genetic and environmental architecture of human aggression. *Journal of Personality and Social Psychology*, 72, 207-17
- Milich, R., & Dodge, K.A. (1984). Social information processing patterns in child psychiatric populations. *Journal of Abnormal Child Psychology*, 12, 471-490.
- Miller, N.B., Cowan, P.A., Cowan, C.P., Hetherington, E.M et al. (1993). Externalising in preschoolers and early adolescents: A cross study replication of a family model. *Developmental Psychology*, 29 (1), 3-18
- Millie, A., Jacobson, J., McDonald, E., & Hough, M. (2005). *Antisocial Behaviour Strategies: Finding a Balance*. London: Joseph Rowntree Foundation

Moffitt, T.E., (2005). The new look of behavioural genetics in development psychopathology: Gene-Environment interplay in antisocial behaviours. *Psychological Bulletin*, 131, (4) 533-554.

Moffitt, T.E. (1993). Adolescence-limited and life course-persistent offending: A complementary pair of developmental theories. In T.P.Thornberry (Ed). *Advances in criminological theory: Vol 7. Developmental theories of crime and delinquency*. pp. 11-54. New Brunswick, NJ: Transaction Publishers.

Moffitt, T.E., and the E-Risk Study Team. (2002). Teen-aged mothers in contemporary Britain. *Journal of Child Psychology and Psychiatry*, 43, 727-742.

Moffitt, T.E., (1990). Juvenile delinquency and attention deficit disorder: Boys developmental trajectories from age 3 to age 15. *Child Development* 61, 893-910

Morash, M., & Rucker, L. (1989). An exploratory study of the connection of mother's age at childbearing to her children's delinquency in four data sets. *Crime and Delinquency*, 35, 45-93.

Morris, L. (1994). *Dangerous Classes: The underclass and social citizenship*. London: Routledge

Mosely, J., & Thomson, E. (1995). Fathering behaviour and child outcomes: The role of race and poverty. In W.Marsiglio (Ed), *Fatherhood: Contemporary theory, research and social policy*, 148-165. Thousand Oaks, CA: Sage

Mrazek, P.J., & Haggerty, R.J. (1994). *Reducing risk for mental disorders: frontiers for preventive intervention research*. Washington DC: National Academy Pres

Murray, C. (1999). *The underclass revisited*. Washington, DC: American Enterprise Institute for Public Policy Research.

Murray, C. (1994) *Underclass – the Crisis Deepens*. London: Institute of Economic Affairs

Murray, C. (1990). *The emerging British underclass*. London: Institute of Economic Affairs.

NCH (2005). *Tackling antisocial behaviour: Have we got it right?* Available at www.nch.org.uk

Neighbors, B., Forehand, R., & Bau, J.J. (1997). Interparental conflict and relations with parents as predictors of young adult functioning. *Development and Psychopathology*, 9, (1), 169-187

Neighbors, B., Forehand, R., & McVicar, D., (1993). Resilient adolescents and interparental conflict. *American Journal of Orthopsychiatry*, 63, 462-71.

Newell, A., & Simon, H.A. (1972). *Human problem solving*. Englewood Cliffs, NJ: Prentice-Hall.

Nichell, S. (2003). Poverty and worklessness. *Centrepiece* 8 (3) 5-15.

Nixon, J., Blandy, S., Hunter, C., Jones, A., & Reeve, K. (2003). *Developing good practice in tackling antisocial behaviour in mixed tenure areas*. Sheffield: Sheffield Hallam University.

NSPCC (2004). NSPCC response to Every Child Matters. www.nspcc.org.uk/publicaffairs

Olson, H.C., Stressguth, A.P., Sampson, P.D., Barr, H.M., Bookstein, F.L., & Thiede, K. (1997). Association of prenatal alcohol exposure with behavioural and learning

problems in early adolescence. *Journal of the American Academy of Child and Adolescent Psychiatry*, 36 (9), 1187-1194.

Olweus, D. (1979). Stability of aggressive reaction patterns in males: A review. *Psychological Bulletin*, 86, 852-875.

Osborn, A.F. (1990). Resilient children: A longitudinal study of high achieving socially disadvantaged children. *Early Child Development and Care*, 62, 23-47.

Osborn, A.F., Butler, N.R., & Morris, A.C. (1984). *The social life of Britain's five year olds. A report of the Child Health and Education Study*. London: Routledge and Kegan Paul.

Osofsky, J.D. (1995). Children who witness domestic violence: The invisible victims. *SRCD Social Policy Report*, 9 (3), 1-16.

Owen, M.T., & Cox, M.J. (1997). Marital Conflict and the Development of infant-parent attachment relationships. *Journal of Family Psychology*, 11, 152-164

Patterson, G.R. (1995). Coercion as a basis for early age onset for arrest. In J.McCord (Ed) *Coercion and Punishment in long-term perspectives*, pp 81-105. Cambridge: Cambridge University Press.

Patterson, G.R. (1982). *Coercive family process*. Eugene, OR: Castalia.

Patterson, G.R. (1975). *A social learning approach to family intervention. Vol 1. Families with aggressive children*. Eugene, OR: Castalia

Patterson, G.R., & Capaldi, D.M. (1991). Antisocial parents: Unskilled and vulnerable. In P.A.Cowan & E.M.Hetherington (Eds). *Family Transitions*, pp.195-218. Hillsdale, NJ: Erlbaum.

Patterson, G.R., Capaldi, D.M., & Bank, L. (1991). An early starter model for predicting delinquency. In D.J.Pepler & K.H.Rubin (Eds). *The development and treatment of childhood aggression*. pp. 139-168. Hillsdale, NJ: Lawrence Erlbaum.

Patterson, G.R., DeBaryshe, B.D., & Ramsey, E. (1989). A developmental perspective on antisocial behaviour. *American Psychologist*, 44, 329-35.

Patterson, G. R., DeGarmo, D. S., & Knutson, N. (2000). Hyperactive and antisocial behaviours: Comorbid or two points in the same process? *Development and Psychopathology*, 12, 91-106.

Patterson, G.R., Reid, J.B., & Dishion, T. (1992). *Antisocial boys: A social interactional approach*. Eugene, OR: Castalia

Patterson, G.R., & Yoerger, K. (1997). A developmental model for late onset delinquency. *Nebraska Symposium on Motivation*, 44, 119-177

Peris, T.S., & Baker, B.L. (2000). Applications of the expressed emotion construct to young children with externalising behaviour: Stability and prediction over time. *Journal of Child Psychology and Psychiatry and Allied Disciplines*, 41. 457-462.

Pettit, G.S., & Bates, J.E. (1989). Family interactions patterns and children's behavioural problems from infancy to 4 years. *Developmental Psychology*, 25, 413-420.

Piachaud, D., & Sutherland, H. (2002). Child Poverty in Hills, J., Le Grand, J., & Piachaud, D., (Eds). *Understanding Social Exclusion*. pp141-154, Oxford: Oxford University Press.

Piachaud, D. & Sutherland, H. (2000). How effective is the British government's attempt to reduce child poverty? *CASEpaper 38*, London: London School of Economics.

Pine, D.S., Coplan, J.D., Wasserman, G.A., Miller, L.S., Fried, J.E., Davies, M., Cooper, T.B., Greenhill, L., Shaffer, D., & Parson, B. (1997). Neuroendocrine response to fenfluramine challenge in boys. *Archives of General Psychiatry* 54, 839-846.

Plomin, R. (1994). *Genetics and experience: The interplay between nature and nurture*. Thousand Oaks, CA: Sage.

Plomin, R., & Bergeman, C.S., (1991). The nature of nurture: Genetic influences on 'environmental' measures. *Behavioural and Brain Sciences*, 10, 1-15.

Plomin, R. & Daniels, D. (1987). Why are children in the same family so different from one another? *Behavioural and Brain Sciences*, 10, 1-16.

Plomin, R., Scheier, M. F., Bergeman, C. S., Pedersen, N. L., Nesselroade, J. R., & McClearn, G. E. (1992). Optimism, pessimism, and mental health: A twin/adoption analysis. *Personality and Individual Differences*, 13, 921-930.

Plomin, R., DeFries, J. C., McClearn, G. E., & Rutter, M. (1997). *Behavioural genetics*. New York: Freeman.

Plomin, R., Owen, M. J., & McGuffin, P. (1994). The genetic basis of complex human behaviours. *Science*, 264, 1733-1739.

Plomin, R., & Rutter, M., (1998). Child development, molecular genetics and what to do with genes once they are found. *Child Development* 69, 1223-1242.

Princes Trust (2001). It's like that: The views and hopes of disadvantaged young people. <http://www.princes-trust.org.uk/downloads/newsum.html>

Pugh, G. (1998). Children at risk of becoming socially excluded: An introduction to the 'problem'. *Paper prepared for the Cross-Departmental Review of Provision for Young Children*. (London, January).

Pugh, G., De'Ath, E., & Smith, C. (1994). *Confident parents, confident children: Policy and practice in parent education and support*. London: National Children's Bureau

Querido, J.G., Warner, T.D., & Eyberg, S.M. (2002). Parenting styles and child behaviour in African-American families of pre-school children. *Journal of Clinical Child Psychology*, 31, 272-277.

Radke-Yarrow, M.R., Campbell, J.D., & Burton, R.V. (1968). *Child Rearing: An inquiry into research and methods*. San Francisco: Jossey-Bass

Reid, W.J. & Crusafulli, A., (1990). Marital discord and child behaviour problems: A meta-analysis. *Journal of Abnormal Child Psychology*, 18, 105-117.

Richard, B.A., & Dodge, K.A. (1982). Social maladjustment and problem solving in school-aged children. *Journal of Consulting and Clinical Psychology*, 50, 226-233.

Richman, N., Stevenson, J., & Graham, P. (1982). *Pre-school to school: a behavioural study*. London: Academic Press.

Robins, L. N., Cottler, L., Bucholz, K. K., & Compton, W. (1995). *Diagnostic Interview Schedule for DSM-IV*. St. Louis, MO: Washington University School of Medicine.

Robins, L. N. (1978). Sturdy childhood predictors of adult antisocial behaviour: Replications from longitudinal studies. *Psychological Medicine*, 8, 611-622

Rowe, D.C., & Farrington, D.P. (1997). The familial transmission of criminal convictions. *Criminology* 35, 177-201.

Rowe, D.C. (1994). *The limits of family influence: Genes, experience and behaviour*. New York: Guilford Press.

Rutter, M. (2003). Crucial Paths from Risk Indicator to Causal Mechanism in Lahey, B.B., Moffitt, T.E., & Caspi, A., (Eds). *Causes of Conduct Disorder and Juvenile Delinquency*. pp3-24. New York: The Guilford Press.

Rutter, M., (2002). Nature, nurture and development: from evangelism through science toward policy and practice. *Child Development* 73, 1-21.

Rutter.M. (2000), Psychosocial influences: Critiques, findings, and research needs. *Development and Psychopathology*, 12, 375-405.

Rutter, M. (1995). Maternal deprivation. In M.H. Bornstein (Eds). *Handbook of parenting: Vol 4. Applied and practical parenting. Part 1: Applied issues in parenting*, pp3-31. Mahwah NJ: Erlbaum.

Rutter, M. (1985). Resilience in the face of adversity: Protective factors and resistance to psychiatric disorder. *British Journal of Psychiatry*, 147, 598-611.

Rutter, M. (1983). Stress, coping and development: Some issues and some questions. In R.Garmezy & M.Rutter (Eds). *Stress, coping and development in children* pp1-41. New York: McGraw-Hill.

Rutter, M., Cox, A., Tupling, C., Berger, M., & Yule.W. (1975). Attainment and adjustment in two geographical areas. 1: The prevalence of psychiatric disorder. *British Journal of Psychiatry*, 126, 493-509.

Rutter, M., Dunn, D., Plomin, R., Simonoff, E., Pickles, A., Maughan, B., Ormel, J., Meyer, J., & Eaves, L. (1997). Integrating nature and nurture: Implications of person-environment correlations and interactions for developmental psychopathology. *Development and Psychopathology* 9, 335-364

Rutter, M., Giller, H., & Hagell, A. (1998). *Antisocial behaviour by young people*. New York: Cambridge University Press.

Rutter, M., & Madge, N. (1976). *Cycles of disadvantage*. Heinemann

Rutter, M., and Redshaw, J. (1991). Growing up as a twin: Twin-singleton differences in psychological development. *Journal of Child Psychology and Psychiatry*, 32, 885-895.

Rutter, M., Silberg, J., & Simonoff, E. (1993). Whither behavioural genetics? A developmental psychopathology perspective. In R Plomin and G.E.McClearn (Eds). *Nature, Nurture and Psychology*, pp 433-56. Washington, DC: American Psychological Association

Sameroff, A. J., Seifer, R., Baldwin, A., & Baldwin, C. (1993). Stability of intelligence from preschool to adolescence: The influence of social and family risk factors. *Child Development*, 64, 80-97.

Sampson, R. J. & Groves, W. B. (1989). Community structure and crime: Testing social disorganization theory. *American Journal of Sociology*, 94, 774-802.

Sampson, R.J., & Laub, J.H. (1993). *Crime in the making: Pathways and turning points through life*. Cambridge, MA: Harvard University Press.

Sampson, R.J., & Laub, J.H. (1994). Urban poverty and the family context of delinquency: A new look at structure and process in a classic study. *Child Development* 65, 523-540.

Sanders, M.R., Turner, K.M., & Markie-Dadds, C. (2002). The development and dissemination of the Triple P-Positive Parenting Programme: A multilevel evidence-based system of parenting and family support. *Prevention Science*, 3, 173-189.

Save the Children (2004). *Britain's Poorest Children Revisited*. London: Save the Children.

Scarr, S., (1992). Developmental theories for the 1990's: Development and individual differences. *Child Development* 63, 1-19.

Schwartz, C.E., Dorer, D.J., Beardslee, W.R., Lavori, P.W., & Keller, M.B. (1990). Maternal expressed emotion and parental affective disorders: Risk for childhood depressive disorder, substance abuse or conduct disorder. *Psychiatric Research*, 24, 231-250

Scott, S. (1998). Aggressive behaviour in childhood. *British Medical Journal*, 316, 202-6

Scott, S., and others (2001a). Multicentre controlled trial of parenting groups for childhood antisocial behaviour in clinical practice. *British Medical Journal* 323, 7306. 19407.

Scott, S. & Campbell, C. (2001). Expressed emotion about children: reliability and validity of a Camberwell Family Interview for Childhood (CFI-C). *International Journal of Methods in Psychiatric Research*, 9, 3-10.

Scott, S., Knapp, M., Henderson, J., & Maughan B. (2001b). Financial cost of social exclusion: follow up study of antisocial children into adulthood. *British Medical Journal*, 323, 1-5

Secombe, K. (2000). Families in poverty in the 1990's: Trends, causes, consequences and lessons learned. *Journal of Marriage and the Family*, 62 (4), 1094-1113

Seifer, R. (1995). Perils and pitfalls of high-risk research. *Developmental Psychology*, 31, 420-4.

Sigle-Rushton, W. (2004). Intergenerational and Life-Course Transmission of Social Exclusion in the 1970 British Cohort Study. *CASEpaper* 78. London: London School of Economics

Silva, P.A. (1990). The Dunedin Multidisciplinary Health and Development Project: A 15 year longitudinal study. *Paediatric and Perinatal Epidemiology* 4, 96-127.

Simons, R.L., Lin, K, H., Gordon, L.C., Conger, R.D., & Lorenz, F.O. (1999). Explaining the higher incidence of adjustment problems among children of divorce compared with those in two-parent families. *Journal of Marriage and the Family* 61, 1020-1033

Simons, R.L., Simon, L.G., & Wallace, L.E. (2006). *Families, Delinquency and Crime: Linking Society's Most Basic Institution to Antisocial Behaviour*. California: Roxbury

Simons, R.L., & Associates. (1996). *Understanding differences between divorced and intact families: Stress, interaction and child outcomes*. Thousand Oaks, CA: Sage

Smith, J.R., & Brooks-Gunn, J., (1997). Correlates and consequences of harsh discipline for young children. *Archives of Paediatric and Adolescent Medicine*, 151, 777-786

Social Exclusion Unit. (2004). *Breaking the Cycle*. London: Social Exclusion Unit

Social Exclusion Unit. (2000). *Anti-social behaviour*, Policy Action Team 8. London: Social Exclusion Unit

Social Exclusion Unit. (1999). *Teenage Pregnancy, CM 4342*. London: The Stationary Office Ltd.

Social Exclusion Unit. (1997). *Social Exclusion Unit: Purpose, work priorities and working methods*. London: The Stationary Office.

Social Trends. (2001). London: Stationary Office

Sparkes, J., & Glennerster, H. (2002). Preventing Social Exclusion: Education's Contribution. In Hills, J., Le Grand, J., & Piachaud, D., (Eds). *Understanding Social Exclusion*. Oxford: Oxford University Press

Squires, P., (2006). The Politics of Antisocial Behaviour. *Critical Social Policy* 26 (1). 144-168.

StataCorp. (2001). *Stata statistical software: Release 7.0*. College Station, TX: Stata Corporation.

Stets, J. (1992). Interactive processes in dating aggression: A national study. *Journal of Marriage and the Family*, 54, 165-177.

Stets, J. E. & Straus, M. A. (1990). The marriage license as a hitting license: A comparison of assault in dating, cohabiting, and married couples. In M.A.Straus & R. J. Gelles (Eds.), *Physical violence in American families: Risk factors and adaptations to violence in 8,145 families*. pp. 227-244. New Brunswick, NJ: Transaction.

Stoolmiller, M., (1999). Implications of the restricted range of family environments for estimates of heritability and nonshared environment in behaviour-genetic adoption studies. *Psychological Bulletin*, 125, 392-409.

Straus, M.A. (1999). Is it time to ban corporal punishment of children? *Canadian Medical Association Journal*, 161, 821-822

Straus, M.A. (1994). *Beating the devil out of them: Corporal punishment in American Families*. New York: Lexington Books

Straus, M. A. (1990). The Conflict Tactics Scales and its critics: An evaluation and new data on validity and reliability. In M.A.Straus & R. J. Gelles (Eds.), *Physical violence in American families: Risk factors and adaptations to violence in 8,145 families*. pp. 49-73. New Brunswick, NJ: Transaction Books.

Straus, M. A. (1979). Measuring intrafamily conflict and violence: The Conflict Tactics (CT) Scales. *Journal of Marriage and the Family*, 41, 75-88.

Stubbe, D.E., Zahner, G.E.P., Goldstein, M.J., & Leckman, J.F. (1993). Diagnostic specificity of a brief measure of expressed emotion: A community study of children. *Journal of Psychology and Psychiatry and Allied Disciplines*, 34, 139-154

Sturge, C., (1982). Reading retardation and antisocial behaviour. *Journal of Child Psychology and Psychiatry*, 23, 21-31/

Sutherland, H., Sefton, T., & Piacharud, D. (2003). *Poverty in Britain: The impact of Government Policy since 1997*. York: Joseph Rowntree Foundation.

Sutherland, E. H. (1947) . *Principles of Criminology*, 4th ed. Philadelphia: J. B. Lippincott Company.

Takeuchi, D.T., Williams, D.R., & Adair, R.K. (1991). Economic stress in the family and children's emotional and behavioural problems. *Journal of Marriage and the Family*, 53, 1031-1041.

Thornberry, T. P. (1987). Toward an interactional theory of delinquency. *Criminology*, 25,863-891.

Thorpe, K., & Wood, M. (2004). 'Antisocial Behaviour' in S.Nicholas and A. Walker (Eds) *Crime in England and Wales 2002/2003: Supplementary Volume 2: Crime, Disorder and the Criminal Justice System – Public Attitudes and Perceptions*. Home Office Statistical Bulletin 02/04. London: Home Office

Tonry, M. (2004). *Punishment and Politics: Evidence and Emulation in the Making of English Crime Control Policy*. Cullompton: Willan Publishing

Townsend, P. (1979). *Poverty in the United Kingdom*. Harmondsworth: Penguin

Trouton, A., Spinath, F.M., & Plomin, R. (2002). Twins Early Development Study (TEDS): A multivariate, longitudinal genetic investigation of language, cognition and behaviour problems in childhood. *Twin Research* 5, 444-448.

Unicef. (2000). A league table of child poverty in rich nations, *Innocenti Report Card Issue No1*. Florence: Unicef.

Utting, D., Bright, J., & Henricson, C. (1993). *Crime and the family: Improving child-rearing and preventing delinquency*. London: Family Policy Studies Centre.

Vandewater, E.A., & Lansford, J.E. (1998). Influences of family structure and parental conflict on children's well-being. *Family Relations*, 47, 323-330.

Vaughn, C. E. (1989). Expressed emotion in family relationships. *Journal of Child Psychology and Psychiatry*, 30, 13-22.

Vaughn, C. E., Block, J. H., & Block, J. (1988). Parental agreement on child rearing during early childhood and the psychological characteristics of adolescents. *Child Development*, 59, 1020-1033.

Vaughn, C.E., & Leff, J.P. (1976). The measurement of Expressed Emotion in the families of psychiatric patients. *British Journal of Social and Clinical Psychology*, 15, 157-65

Vogel, F., & Motulsky, A.G. (1986). *Human Genetics: Problems of and Approaches to*. (2nd Ed). Springer

Vostanis, P., & Nicholls, J. (1995). Nine-month changes of maternal expressed emotion in conduct and emotional disorders of childhood: A follow-up study. *Journal of Child Psychology and Psychiatry and Allied Disciplines*, 36, 833-846.

Vostanis, P., Nicholls, J., & Harrington, R. (1994). Maternal expressed emotion in conduct and emotional disorders of childhood. *Journal of Child Psychology and Psychiatry*, 35, 365-376.

Wadsworth, J., Burnell, I., Taylor, B., & Butler, N. (1985). The influence of family type of children's behaviour and development at five years. *Journal of Child Psychology and Psychiatry*, 26, 245-254.

Wahler, R., & Dumas, J., (1985). Maintenance factors in coercive mother-child interactions: The compliance and predictability hypothesis. *Journal of Applied Behavioural Analysis*, 19 (1), 13-22.

Walker, A. (1990) – 'Blame the Victims'. Available at www.civitas.org.uk/pdf/cw33.pdf

Warren House Group at Dartington (2004). A research perspective on reforms to Children's Services in England. Available at www.whg.org.uk

Webster Stratton, C. (2001). Commentary: nipping conduct problems in the bud. *British Medical Journal* 323 (28), 7

Webster-Stratton, C., (1990). Long term follow-up of families with young conduct-problem children from pre-school to grade school. *Journal of Clinical Child and Adolescent Psychology*, 19, 144-9.

Webster Stratton, C., & Hammond, M. (1999). Marital conflict management skills, parenting style, and early-onset conduct problems: Processes and pathways. *Journal of Child Psychology and Psychiatry and Allies Disciplines*, 40, 917-927.

Webster Stratton, C., & Herbert, M. (1994). *Troubled Families: Problem Children*. Chichester: Wiley

Wechsler, D. (1974). *Manual for the Wechsler Intelligence Scale for Children – Revised*. New York: Psychological Corporation

Weissman, M.M., Warner, V., Wickramaratne, P.J., & Kandel, D.B., (1999). Maternal smoking during pregnancy and psychopathology in offspring followed to adulthood. *Journal of the American Academy of Child and Adolescent Psychiatry*, 38 (7), 892-899.

Werner, E.E., & Smith, R.S. (1992). *Overcoming the odds*. Ithaca, NY: Cornell University Press.

Werner, E.E., & Smith, R.S., (1982). *Vulnerable but invincible: A longitudinal study of resilient children and youth*. New York: McGraw-Hill.

Williams, S., Anderson, J., McGee, R., & Silva, P.A. (1990). Risk factors for behavioural and emotional disorder in preadolescent children. *Journal of the American Academy of Child and Adolescent Psychiatry* 29, 413-419.

Wintour, P. (2004). Analysis: Blair opens another chapter in his crusade against 'Crime and Grime'. *Guardian* 20th July.

Wolfe, D., Jaffe, P., Wilson, S.K., & Zak, L. (1985). Children of battered women: The relation of child behaviour to family violence and maternal stress. *Journal of Consulting and Clinical Psychology*, 53, 657-665.

Wood, M. (2004). *Perceptions and experience of antisocial behaviour: Findings from the 2003/2004 British Crime Survey*. London: Home Office

Wyman, P.A., Cowen, E.L., Work, W.C., Hoyt-Meyers, L., Magnus, K.B., & Fagen, D.B., (1999). Caregiving and developmental factors differentiating young at-risk urban children showing resilient versus stress-related outcomes: A replication and extension. *Child Development*, 70, 645-659.

Yokishawa, H. (1994). Prevention as cumulative protection: Effects of early family support and education on chronic delinquency and its risks' *Psychological Bulletin*, 115, 28-54.

Youth Justice Board (2004). *ISSP: The Initial Report*. Youth Justice Board.

Zahn-Waxler, C. (1993). Warriors and worries: Gender and psychopathology. *Development and Psychopathology* 5, 79-89.