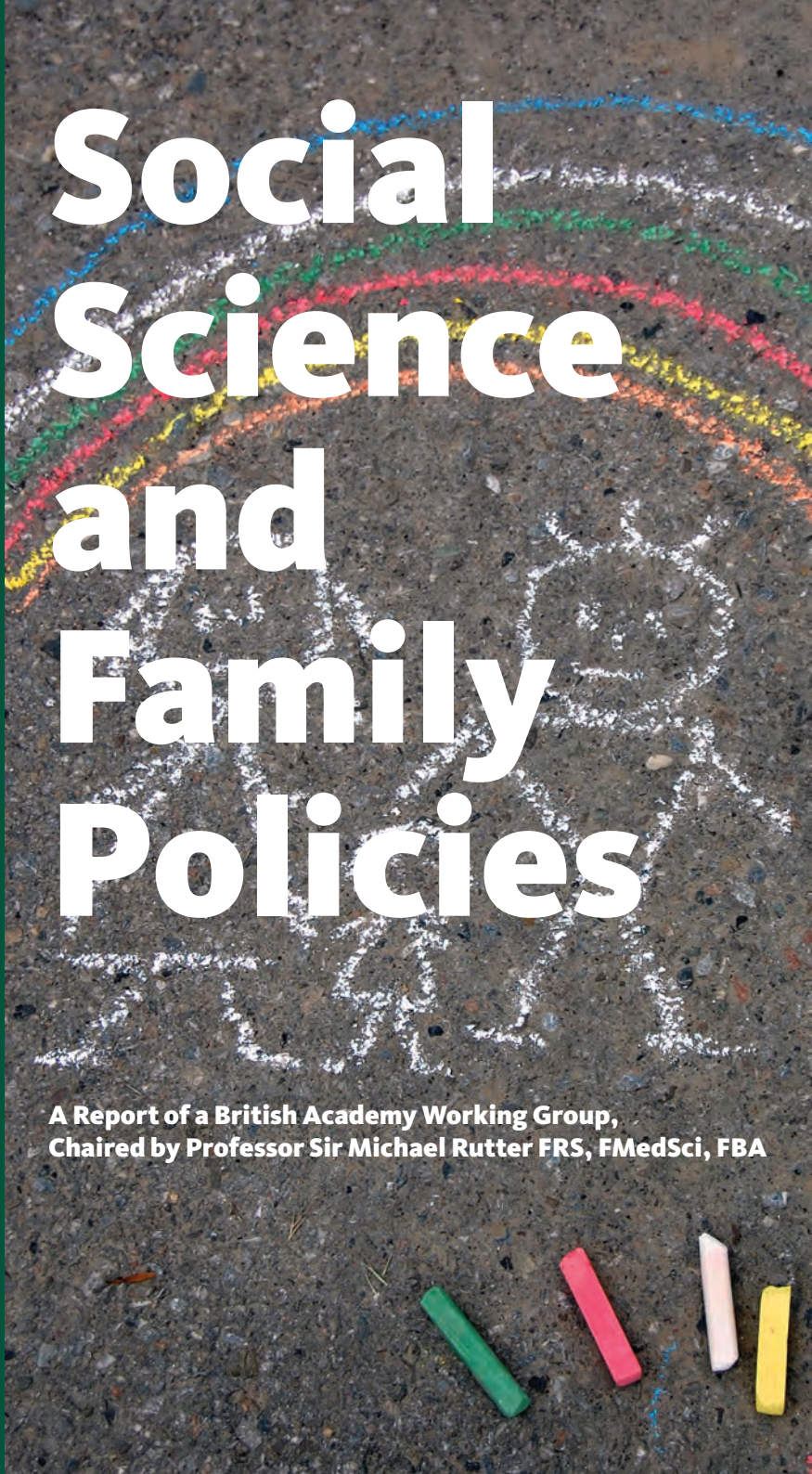
Social Science and Family Policies



A Report of a British Academy Working Group,
Chaired by Professor Sir Michael Rutter FRS, FMedSci, FBA

BRITISH ACADEMY
POLICY CENTRE

SOCIAL SCIENCE AND FAMILY POLICIES

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PREFACE FROM THE PRESIDENT

Families are changing in form and structure, both in the UK and internationally. At the same time, the question of the policies that should be pursued by governments in respect of families has proven to be a minefield. This report does not pretend to explore the whole minefield. Rather, it offers factual information and cool analysis about parts of it. The authors provide a summary of some of the changes in families, they explore certain questions relating to family policy, and above all they illustrate what mainly quantitative social and behavioural science can contribute in these areas. They deal mainly but by no means exclusively with developments in the United Kingdom.

Academic work can help to shed light rather than heat on an already hot topic. In this case it can help both in the identification of the many changes in family patterns that have taken place in the UK, and in suggesting which policies may have some prospect of being effective. The authors state clearly that this report does not seek to dictate policy, but rather to explore the interface between science and policy.

The British Academy's principal purposes are to inspire, recognise and support excellence and high achievement in the humanities and social sciences throughout the UK and internationally, and to champion their role and value. In pursuing these purposes, the Academy aims to benefit both the scholarly community and the wider public. We seek to highlight the engagement of humanities and social science disciplines with issues of public concern or interest, and to show how the humanities and social sciences help to shape and illuminate the UK's cultural, economic, intellectual and social life. This task – the dissemination of research – results in many different types of activity, including the Academy's programme of lectures, meetings and discussions.

One way of providing this wider benefit is to publish from time to time a guide to some of the best that has been thought and written on a topic of current interest. The reports of our policy working groups involve assembling a group of experts, drawn both from Fellows of the British Academy and more widely, with the aim of putting into the public domain an informed and at the same time an accessible understanding of a set of issues. *Social Science and Family Policies* does just that.

Adam Roberts, President, British Academy, London, February 2010

FOREWORD

There is an old saying that, if you wish for a happy life, you should choose your parents wisely. The values associated with parenting are widely held and include: the nurture of children's development; the promotion of their personal health and well-being; the protection of children from the risks of violence, substance abuse and economic insecurity; and the instilling of a sense of personal responsibility for one's own and one's family's future. So much seems unquestionable. Yet, if these values are widely shared, that alone does not answer the question of how best they are to be realised or what the effects of changing family patterns are. To answer these questions we need the empirically based research of the social and behavioural sciences. Over a number of decades, researchers in the UK and elsewhere have undertaken serious empirical studies on the effects of divorce on children, the origins of psychoses, the effects of institutionalisation on children's well-being and the place of the quality of care in producing good outcomes. As a central element of its initiative in contributing the findings of research to public policy making, the British Academy decided that the analysis of family patterns was a topic with high priority. Indeed, it was such a high priority that we asked a working group to report on the current state of understanding within two months.

In charging a Working Group with this arduous responsibility, the Academy has been fortunate in obtaining the services of one of the most distinguished analysts of family life, Professor Sir Michael Rutter, a Fellow of the Academy, together with a group of highly renowned researchers – one of the peer reviewers referred to them collectively as a 'dream team'. As a Working Group, they have produced this report with exceptional speed and diligence.

As the President points out in the Preface, family policy is often a minefield of engaged and committed partisan debate, naturally enough given the significance of parenting. As the Working Group points out, it is important to distinguish where the social and behavioural sciences can contribute to public understanding in a

rigorous and reliable way and where policy choices depend upon the way one understands personal and political values. An important lesson of their report is that understanding how families work takes us beyond the headlines to complicated patterns of personal and social interaction. Through setting out what is understood about the ways in which families function, the Working Group has also sought to identify more broadly what makes for a sound scientific contribution to policy making. Its contents will make fascinating reading for all those concerned about the role of the family in social life but also for those concerned with ensuring that public policy is based on the best evidence available.

Professor Albert Weale, Vice President (Policy), British Academy

EXECUTIVE SUMMARY

Values stand at the very centre of politics, particularly family policies. It is the duty and responsibility of Government to decide both the values it wishes to espouse and the relative priority to be given to different values. Science cannot determine what those values should be. On the other hand, policy-makers need science to provide robust evidence on the difficulties in different segments of the population in order to decide which require action and how to target the clientele who most require help. They will also wish to decide policy on the best available evidence on the causal processes that they wish to prevent or ameliorate, as well as on the effectiveness of various possible interventions under consideration. In addition, policy-makers will want any available evidence on the best time for intervention and on how to increase the likelihood that any intervention will bring about durable benefits. The need for science input on such issues arises because in one way or other, we are all part of families and, hence, feel ourselves to be experts on family matters. Accordingly, claims with respect to family polices abound but vary hugely in their source and solidity. This report discusses the broader science on which many public policy discussions of family policies rest in this country and elsewhere.

The aim of this report is to demonstrate how good science can contribute to evidence-based policy making. As such, it does not aim to provide authoritative guidance on policy formation or consequential action. What it does is to make a case that high-quality social science is needed by policy-makers in order to support the decisions they make. It is directed at senior policy-makers and their advisers, think-tanks and relevant NGOs, academics and students seeking an authoritative overview of a range of materials in this area.

In Chapter 1, we discuss the interface between science and policy and outline both the range of scientific research strategies and what it is that science can contribute. The strategies include descriptive studies, epidemiological/longitudinal studies, qualitative investigations, randomised controlled trials, systematic reviews, experimental studies and natural experiments. The contributions of science include the

identification of individual (or group) differences in response, and the determination of when associations do, and when they do not, imply causation.

The report does not attempt to cover all social/behavioural research relevant to family policies, and it does not attempt to review the individual research findings that might point to the desirability of particular individual policies. Rather, we have focused on a selective range of topics chosen because they illustrate well the value of a diverse mixture of research strategies and because they include examples that illustrate how research findings have (or should have) altered concepts of either risk factors or preventive strategies. Thus, in Chapter 2, we review research on family structure, break-up and reconstitution. Initially, in the 1940s and 1950s, most attention was focused on the supposed adverse effects of 'broken homes'. Research during the 1970s and 1980s showed that the main risks to children derived from the family discord/conflict associated with family break-up in some instances. Other research was important in showing that the risks were mainly brought about by environmental influences; that the effects involved bi-directional effects (i.e., children's effects on parents as well as parents' effects on children). We also discuss the unresolved issues with respect to marriage and cohabitation, noting the heterogeneity of non-marital relationships and the need to consider the major factors that may 'select' different sorts of people into marriage or non-marital cohabitation.

In Chapter 3, the vexed issues involved in the different varieties of non-parental care are discussed. We note the evidence that group day care in the first year of life is, on average, associated with a modest increase in disruptive behaviour later, but also with a modest enhancement of intellectual and language functioning. The evidence indicates that the quality of care both as provided by parents and that in non-parental care settings is a crucial influence. In addition, however, peer group effects may be important. Science showed that some of the supposed effects of group day care had been exaggerated and that non-maternal care involved several different considerations, sometimes working in opposing directions.

In Chapter 4, we focus on the well established finding that, with all environmental hazards, there is a huge variation in response. Research has been instructive in showing the importance of social experience in adult life in fostering resistance to environmental adversities – usually conceptualised as 'resilience'. In addition, a range of different research strategies has shown the importance of genetic influences on environmental risk effects. The scientific findings were instrumental in showing the extent of individual differences in response to environmental hazards and identifying some of the features that led to such variation.

Chapter 5 turns to the effects of life stressors. At first sight, it might seem that the scientific study of life stressors is rather distant from family policies. However, this is included for four reasons. First, the research brings out the interplay between inner psychological stressors and external social circumstances. Second, parents are people and any understanding of parenting needs to take account of the factors that facilitate or interfere with good parenting. The research indicates the important role of depression in affecting parenting behaviour. Third, the research shows the importance of early vulnerability factors in moderating the effects of later life stressors - hence pointing to the value of a life span perspective. Fourth, the research again indicates the role of genetic effects on environmental susceptibility.

Chapter 6 deals with the high risk situations of abuse and neglect (both of which largely occur within the family) and bullying (which mainly occurs outside but which needs to involve parents in both prevention and amelioration). The research on both indicates their high frequency and their major adverse consequences, as well as elucidating some of the mediating mechanisms.

Chapter 7 focuses on the effects on children of profound institutional deprivation. Its relevance for family policies is that most discussions in the literature tend to consider inter-country adoption as a whole; the scientific findings show that this is misleading because institutional deprivation has rather specific effects. Its contemporary relevance is that although adoptions from Romania have more or less

ceased, adoptions of children experiencing institutional care in other countries (especially Russia or China) continue. It is important that prospective adoptive parents understand the nature of the challenges that they may face. The research is also important in showing the biological effects of psychosocial deprivation, the persistence of effects at least into mid-adolescence, but also the large individual differences in outcome.

Chapter 8 discusses the effects of drugs (including alcohol) on psychological outcomes. It is included in the report because it highlights the fact that the level of risk can rarely be reduced to a single meaningful figure; this is because risks may be low at a total population-level, but quite high in those with particular vulnerabilities (associated with age and with genetic influences). Balancing the low risks in some people but the high risks in others raises quite tricky policy considerations, but it is important that decisions be taken in the light of the scientific evidence. The study of prenatal risk exposure raises the rather different issue of whether the risks truly operate before birth (in which case particular biological mechanisms are operative) or whether they apply similarly before and after birth, implying quite different causal mechanisms. Preventive policies need to be planned with knowledge of which apply. The relevance for family policies arises because, if the effects apply prenatally, this has inevitable implications for how the period of gestation is dealt with by mothers-to-be. Also, of course, parents have a key role in how they respond to drug-taking by their children.

In Chapter 9 our discussion focuses on the evidence concerning the risk and protective effects that derive from communities and social groups. Social sciences have been highly informative in showing that there **are** important effects on psychological functioning and in identifying some of the key ways in which the influences operate. The basic message is that family influences are important, not just with respect to how they operate in the home, but also in terms of how they operate within the community.

Chapter 10 focuses on social science contributions with respect to preventive interventions concerned with family dysfunction and poor parenting. Of course, this constitutes just one aspect of prevention relevant to family policies, but it well illustrates some of the key considerations. The findings showed that interventions of an appropriate kind, designed to improve parenting practices, are effective in improving outcomes for high risk groups of preschoolers, but that uncertainty remains on their efficacy with very seriously high risk groups in which abuse or neglect is prominent. Especially with very high risk groups, there must be a good deal of caution before assuming that interventions using self-administered implementation or the use of volunteers will be effective. As with most interventions, challenges remain in identifying the key elements in interventions that make for success, and in determining the factors that influence individual differences in response.

In Chapter 11 we draw together the threads of the argument in relation to the needs of policy-makers. A genuine commitment to evidence-based policy means paying attention to the methods by which understanding is produced. In particular, this means:

- Checking the validity of observations in terms of their representativeness.
- Conducting a range of statistical analyses that reveal the different ways in which individuals respond to similar causes.
- Rejecting the fallacy that it is possible to find a single cause for complex conditions.
- Using multiple sources of evidence and accepting that studies need to be replicated to be believable.

Well designed interventions can be beneficial, but common sense will not tell a policy-maker what is beneficial and what is harmful. For that we need the methods noted above and a willingness to ensure that the facilities are available for good work in the social and behavioural sciences, which have so much to contribute to social well-being.

1 THE INTERFACE BETWEEN SCIENCE AND POLICY

This report is concerned with the question of why social/behavioural science is needed in relation to questions of family policy and what exactly it is that science can contribute. It does not make recommendations on what specific policies government should pursue because it is uncommon for scientific evidence to provide a direct answer to this question. Rather, the report begins with a discussion of values, and then moves on to the interface between science and policy.

VALUES

The role of values is perhaps most easily illustrated by taking an issue that is not of direct relevance in relation to Britain today (although it is of relevance in other countries) – namely capital punishment. There are those who have a firm religious conviction that, on the basis of 'an eye for an eye and a tooth for a tooth', God's laws require that any individual who has killed someone else unlawfully must lose their own life – in this case through legal execution. Science has nothing to contribute in relation to such claims other than pointing out that different religions have different values, and that poses the dilemma of which ones to accept and which ones to reject. If, on the other hand, such beliefs lead to a claim that capital punishment serves as an effective deterrent of violent crime or of killing, that is a proposition that can be tested through the workings of social/behavioural sciences. Similarly, if it is argued that there have been no executions of individuals who were innocent of the crimes for which they were convicted, science can test whether that claim is correct. The issue here is not the number of individuals who are freed because of doubts about the evidence or the adequacy of the procedures being followed,

but rather on the positive proof that some other individual was guilty of the act and that the individual about to be executed should be totally exonerated. Such evidence has been available for some years. Broadly similar issues come up in relation to the belief that US citizens have a constitutional right to carry firearms. Science has nothing very useful to say on that claim, but it can provide evidence on whether the carrying of firearms is associated with an increased rate of homicide and suicide and whether such effects account for the differences among countries in murder rates (see Rutter, Giller & Hagel, 1998).

Values stand at the very centre of political issues. That is, it is the duty and responsibility of government to decide both the values it wishes to espouse and the relative priority to be given to different values. In that connection, it needs to be noted that it is quite common to have a clash between different values. For example, in the field of family policy, what balance should there be between the rights of parents and the rights of children (Commission on Families & the Wellbeing of Children, 2005)? This has been an issue in discussions on whether or not to allow the corporal punishment of children. Similarly, in Eire, the argument that parental rights are of such over-riding importance that they outweigh the needs of children is now a central issue in relation to adoption. Equally, how should state responsibilities and family responsibilities be brought together? In the contemporary context, most people accept that children's development is fostered by being reared in a harmonious family in which both parents are committed to each other and to the children (Coleman & Glenn, 2009). But, there is marked divergence on how important it is that this be in the context of a legal marriage contract.

Political values are also central in choosing the favoured remedies for problems. For example, the main political parties in the UK are agreed on the desirability of abolishing child poverty, but they differ on whether this should be achieved through welfare benefits, an increase in the minimum wage, or providing incentives for both parents to have full-time paid employment. Similarly, there is agreement on the undesirability of unplanned, unwanted pregnancies

among teenagers but people may differ in the emphasis placed on sex education, contraception, and chastity before marriage. While it is evident that science can contribute much on the likely efficacy of the proposed remedies, it cannot validate, or invalidate, the underlying values. The basic point is that both scientific findings and values are essential, and it is highly desirable that both roles are appreciated; they are not synonymous.

These raise quite tricky issues for everyone. For example, one of us (Rutter, 1983) argued that, for him, racism was an abomination and that he would oppose it regardless of the scientific evidence. On the other hand, equally, he argued that he would certainly look to the scientific evidence on both the consequences of racial discrimination and on the efficacy of steps to diminish either discrimination or its adverse effects on other people. In other cases, the values themselves may be influenced by scientific evidence. For example, that might be thought to apply to the ill effects found to be associated with major economic inequalities (see Wilkinson & Pickett, 2009). Group comparisons have shown that countries or societies with large economic inequalities tend to have higher rates of psychosocial problems. The implication has been that the large economic inequalities have caused the higher rate of problems.

Costello et al.'s (2003) study of the effects of reduction of poverty on a Native American reservation in the United States provides a good example of a test of causal inference but also of the complexities of drawing inferences on the mediating mechanisms – meaning the key elements that actually brought about the effects. They found that the relief of poverty (which resulted from a Federal requirement that when a casino is set up on a Native American reservation, a specified portion of the proceeds must be distributed to all Native Americans living on the reservation) was associated with a significant reduction in certain kinds of psychopathology in young people, but the further evidence (which was not subject to the control of universal availability of economic benefits of the casino) showed that the benefits seemed to derive from the effects of relief of poverty on family patterns of interaction, rather than from direct effects on the child. Such

complexities are very common when dealing with social policies, including family policies.

SCIENCE AND POLICY

The interface between science and policy is most easily illustrated by the furore that arose recently in relation to the classification of the risks associated with cannabis (Fong, 2009). The various issues in relation to the science itself are discussed more fully in Chapter 8 in this report, but here we note the unfortunate misunderstandings that arose with respect to the interface between science and policy. On the one hand, the scientists concerned acted in a way that seemed to suggest that policy- makers were obligated to follow the scientific advice without consideration of other social or political issues. On the other hand, the government failed to make explicit a respect for scientific advice or the reasons why, on this particular occasion, there was a decision to act in a way that seemed to run against the advice received. We conclude that the lesson is that both scientists and policy-makers need to understand better their respective roles and contributions. It would make no sense for any straightforward conclusion that, in all circumstances, one necessarily 'trumps' the other.

WHY IS SCIENCE NEEDED IN RELATION TO FAMILY POLICY?

In relation to family policy, one of the problems is that we are all, in one way or another, part of families and hence, all too often, feel that we are thereby 'experts' on family matters – at least when it concerns families like our own. Accordingly, claims with respect to family policies abound but they vary hugely in their source and their solidity. Thus, some claims are based solely on value systems. Such values, especially when they derive from religion, are part of the human condition and it would be futile as well as impractical to suppose that

they can be eliminated (see Hinde, 1999). As noted above, the main problem is that different religions have different value systems. That is particularly crucial in multicultural societies such as our own in which the organised religions span various varieties of Christianity, Islam, Hinduism, Judaism, and others. In addition, many citizens belong to no church but nevertheless hold 'humanist' values.

Once we move away from claims based solely on values, to claims about why things are as they are, we have still not moved into the realm of science. For example, empirical claims are sometimes based on small, unrepresentative, volunteer samples, making it impossible to know whether the claims made are valid. The media are full of supposed 'findings' based on the non-systematic, non-standardised interviewing of a haphazard small sample of people in the street. No satisfactory reliance can be placed on such samples. Science only begins to have a role in showing what emerges when adequate-sized, representative samples are used.

Even with adequate samples, however, claims may be based on unsatisfactory, poor quality statistical analyses. It would be unhelpful to pinpoint specific examples of this but modern statistics has well established procedures to be followed in both data analysis and the reporting of data analyses (see Academy of Medical Sciences, 2007). Perhaps, reference should also be made to the numerous concerns raised about the findings as presented by some pharmaceutical companies on the benefits and the risks associated with their products (Eisenberg & Belfer, 2009). There are indications that, on some occasions, commercial interests have led to biased reporting. Bias may also apply to 'surveys' of family life designed to influence lobbyists.

Finally, there are claims that are based on good observational studies of adequate size but where conclusions have to be tempered by an awareness over uncertainties regarding unmeasured 'confounders' (meaning, features associated with the true risk factor that mimic its effects without being part of the causal influence) and hence whether it is justified to use an observed association or correlation as a basis for inferring causation (see Academy of Medical Sciences, 2007). Alternatively, there may be uncertainty regarding the

identification of what is the key risk factor. Various examples of this are presented in the chapters to follow. Furthermore, there may be uncertainty on the direction of the causative influence. Thus, for example, in an influential paper in 1968, Bell argued that many of the conclusions of the supposed socialisation influences on children were actually due to the effects of children on their rearing environments. There are now good designs, and good analytic strategies, for teasing apart the direction of causal effects and several examples are given in the chapters that follow. There may, also, be uncertainty on the extent to which mediation (meaning the mechanism by which risk effects are brought about) is genetic or environmental. As will be illustrated in the chapters that follow, the fact that a risk factor describes an environmental feature does not necessarily mean that the risks are environmentally mediated. A key paper in 1991 by Plomin and Bergeman pointed out that the presence of gene-environment correlations meant that it was quite likely that part of the supposed environment effects were actually genetically mediated. Again, examples are given in the chapters that follow.

WHAT DO POLICY-MAKERS NEED FROM SCIENCE?

First, policy-makers need science to provide robust evidence on population needs in order to decide which require action and how to target the clientele most in need of help. For example, how many children experience bullying? Do the adverse effects of such experiences vary by age or schooling or family circumstances? To what extent are bullies also the victims of bullying by others?

Second, they need to decide policy based on the best available evidence on the causal processes for the problems that they wish to prevent or ameliorate. Equally, they need evidence on the effectiveness of the various possible interventions under consideration.

Third, they need evidence that would enable them to know the best time for intervention. This issue will always need to be

subdivided into the time when intervention is most needed; the time when intervention is most likely to be welcomed; and the time when it is most likely to be effective. Science may be helpful in providing answers to questions on these three aspects of timing, but policy-makers will still need to make judgements on the weights to be attached to each of these.

Fourth, policy-makers will need any available evidence on what is required to increase the chances that the effects of any intervention will bring about durable benefits. The answer could lie in the nature of the intervention itself or in the services context in which it is to be embedded.

After a policy initiative has been made, policy-makers will need evidence on its efficacy in bringing about the desired outcomes. Insofar as it was effective, what were the key elements that made it so? Insofar as it fell short of what had been hoped for, why had it not been more successful? Was the initiative of the wrong kind, or did its limitations lie in the way in which it was introduced, the constraints of the service context, or the level of resource provided? Should the policy be adapted in some fashion or should it be totally changed? What were the cost benefits? That is, did the economic benefits brought about by an effective intervention outweigh the costs involved in providing the intervention? The topic is clearly an important one, but it involves many tricky considerations (see Knapp, 2008) and it is outside the scope of what could be achieved in this report.

SCIENTIFIC RESEARCH STRATEGIES

Against that background, we need to note what scientific strategies may be used to provide the evidence that may be relevant for family policies.

Descriptive studies: The usual starting point is a descriptive, cross-sectional, epidemiological study to determine whether some supposed risk factor is associated with some outcome of interest. Thus, in Chapter 2 we illustrate this with the proposition that broken

homes cause crime. Good science will pay careful attention to sampling in order to check that any association applies to a representative sample of the population. Note that this will not always be the total general population if the risk is thought to apply only to children, or to males, or to some other defined subgroup of the population. There will be analyses to determine whether the association could have arisen by chance, and analyses to calculate the size of the effect. Size of effect will need to be expressed in terms of relative risk – meaning, the extent to which the risk effect increases the likelihood of the adverse outcome being considered. Typically, this will be expressed in terms that reflect the relative risk in comparison with that in groups who do not have the risk factor. Thus, the findings may be said to show a doubling of the risk. But, also, findings will be expressed in absolute terms. For example, is the risk doubled from 1 in 10 to 2 in 10 or from 1 in 10,000 to 2 in 10,000? Obviously, the practical implications are quite different in these two alternatives (see Academy of Medical Sciences, 2007). Such descriptive studies are invaluable in 'charting the territory' and in sorting out the patterns, but they are likely to be weak in providing an understanding of escapes from risk – resilience in the face of adversity. They will also be weak in testing whether the associations truly reflect causation.

Epidemiological/longitudinal studies: Prospective longitudinal studies have an advantage on both counts. To begin with, they allow study of within-individual change over time. That is, they can show whether outcomes change for the worse after some defined risk experience, or change for the better when the risk factor is removed. Also, they are better placed to study individual variations in outcome following some stress or adversity. An understanding of the factors promoting resilience is likely to be helpful in planning policies to foster the overcoming of environmental hazards (Rutter, 2006; Rutter, submitted). If, however, there has been a change over time in patterns, repeated studies may be needed to understand the causes of these changes.

Qualitative investigations: Qualitative studies provide rather different information (Laub & Sampson, 2003). They are designed to

illuminate the **meaning** and interpretations of findings, rather than testing some hypothesis. Thus, Hauser et al. (2006) studied the qualities associated with resilience following a serious psychiatric disorder in adolescence, and Laub and Sampson (2003) investigated what were the features that underlay the protective effects of marriage in delinquent men. In both cases, qualitative research was combined with quantitative analyses, with the former being used to generate hypotheses, rather than test them. Typically, qualitative studies are based on quite small samples and usually they need to be embedded in larger scale studies. Peter Medawar, the Nobel Prize winning immunologist, wrote extensively on what was involved in science and in scientific papers (Medawar, 1982). The basic point that he was making was that science did not begin with the quantitative testing of specific hypotheses. Rather, it began with the putting forward of a plausible story on what empirical findings might mean. Particularly in the field of social and behavioural sciences, that is where qualitative research comes in. It does not prove hypotheses but what it does do, most usefully, is suggest the hypotheses on mediating mechanisms that should be taken on board that might most fruitfully be subjected to rigorous enquiry. In the chapters that follow, we give some examples of where that has paid off.

Randomised controlled trials: It is well established that individuals who **choose** to have some preventive or therapeutic intervention are often unusual in ways that could bias attempts to study the efficacy of that intervention (see Academy of Medical Sciences, 2007). In order to circumvent that problem, randomised controlled trials were introduced. The rationale is quite straightforward; that is individuals are asked if they would agree to take part in a trial comparing two interventions with it being uncertain which is the better, and with it being left entirely to chance which intervention they will actually receive. It is 'controlled' because the randomisation is done in a systematic manner and because the researcher will not know which intervention any individual receives. Moreover, insofar as it is possible, the participant will also be kept 'blind' to which intervention s/he has been given. The method was

first developed for drug studies but it is equally applicable for the assessment of psychosocial interventions. Regrettably, they have been far too little used and they should be employed more widely. They are invaluable for testing the efficacy of policies. Nevertheless, it should be noted that their great strength lies in their 'internal validity' (namely the validity of any effects found within the groups studied) and there are inevitable limitations on 'external validity' (i.e., the extent to which findings may be generalised more widely) if a substantial proportion of individuals are unwilling to be subjected to randomisation (see Academy of Medical Sciences, 2007).

Sometimes people tend to assume that psychosocial interventions, if they are sensible and well thought through cannot do harm, and this makes them very different from drug treatments. However, that is **not** a safe assumption. There are many examples of interventions that seemed benign but that were shown to do harm (see Lilienfeld, 2007). The best known of these was the Cambridge-Somerville youth study to prevent or ameliorate delinquency. Skilled counselling was provided and the boys were encouraged to participate in group activities including Boy Scouts and summer camps. The evaluation involved a randomised controlled design including a detailed comparison of matched pairs. The initial findings showed no differences between cases and controls but follow-up findings (McCord, 1978; Dishion, McCord & Poulin, 1999) showed that the treatment actually led to significantly **worse** outcomes. In this case, it seemed that the explanation lay in the adverse effects that stemmed from a deviant peer group, but the point is not the result of this specific study but rather that well intentioned psychosocial interventions can actually cause harm. That is why randomised controlled trials are so necessary.

Systematic reviews: But it is never safe to rely on the results of just one study, whatever its quality. Accordingly, there has been increasing reliance on systematic reviews that follow all the usual scientific rules, but which seek to bring the findings from multiple studies together (see Chalmers, 2003; Chalmers & Glazsiou, 2009). Careful attention needs to be paid to the avoidance of bias, as well as

bringing together many investigations in order to capitalise on the value of larger samples in order to detect relatively small, but potentially important, beneficial effects (or the reverse). In that connection, meta-analyses (combining multiple studies in a way that takes account of sample sizes in order to derive an overall measure of effect size) may be very useful. However, it is crucial that adequate attention is paid to methodological issues and that has not always been the case (see Uher & McGuffin, 2010).

Experimental studies: True experimental studies to study causal influences, are mainly inapplicable in studies of family influences because it is rarely ethically possible to induce noxious experiences in order to investigate their effects. Nevertheless, experimental thinking is crucial in social/behavioural science and an example of an ingenious experiment to examine children's influence on parental behaviour is described in Chapter 2. Also, there is a further discussion of experimental approaches in Chapters 4 and 6.

'Natural experiments': These were devised in order to have strategies that, whilst not fully experimental, approximated the experimental strategy in 'pulling apart' variables that ordinarily go together (Rutter, 2007 & in press). Thus, there are a range of genetic strategies that deal with the issue of whether any association reflects genetic or environmental mediation. Similarly, there are strategies using temporal associations, combined with other design features, to determine the direction of causal effects. Then, there are a range of designs that deal with the problem of what has been called 'social selection'. What this means is that it is not random chance that accounts for some people being exposed to risk (or protective) environments. As noted above, the exposure to such environments is influenced by people's actions in selecting or shaping such environments. One of the best ways of dealing with this problem is to examine the unusual circumstances when a risk effect is either introduced at a total population level or, alternatively, removed at a total population level. For example, this approach was used to great effect in the example mentioned above of the reduction of poverty on a Native American reservation and it was also used with great effect

with respect to the hypothesis that either the measles, mumps, rubella (MMR) combined vaccine, or the thimerosal, mercury-containing preservative in vaccines was responsible for the apparent epidemic in diagnosed autism. The finding that the rise in the rate of autism was completely unaffected by the removal of either the MMR vaccine or the removal of the thimerosal preservative (Honda et al., 2005; Stehr-Green et al., 2003; Atladóttir, et al., 2007) rather effectively ruled out that hypothesis. Another approach is to use an 'instrumental variable' – meaning a feature outside the control of the individual that affects the outcome being studied by some means that is independent of the usual liability to that outcome. The effect of early puberty on early use of alcohol (probably through peer group effects) is an example of how it was used to study the effects of early drinking on later alcoholism. In the chapters that follow, we consider a range of other examples. The basic point is simply that social/behavioural sciences include a range of good ways of testing the causal inference.

WHAT CAN SCIENCE CONTRIBUTE?

The first thing that science can contribute is to present the evidence on what is found when representative samples of adequate size are used. Such findings will usually be presented with an indication of what is termed a 'confidence interval'. This is something that indicates, on the basis of the sample studied, the range within which 95 per cent (or whatever cut-off is chosen) of observations can be expected to fall, given what is known about measurement error and measurement variations. This means that the true value of whatever is being measured should be found within the confidence interval. That is an important statistic because what it usually shows is that, even with findings that are statistically highly significant, the range of confidence is wide. What this means is that there should be no surprise if a further study gives what appears to be a somewhat different finding but yet one which is within the same confidence interval. Science will also usually pay attention to the crucially important issue of whether

the findings work in the same way in all groups. For example, are the findings in males and females the same; do the effects vary according to age; do they vary according to the degree of social disadvantage; etc.? These are really important issues because they have fairly direct consequences for policy considerations. In the chapters that follow, we will give several examples where effects do indeed vary considerably according to the particular group being examined. Note, that this is not just a function of statistical 'noise' and measurement error; rather it is that effects that are consistently strong in one group are consistently weak (or are different) in other groups.

Finally, scientists make use of a variety of both statistical and design features that can help deal with the tricky, but absolutely crucial, issues of when observed correlations do, and do not, imply causation, when causative influences operate in one direction rather than another, and which aspect of the risk feature actually carries the mediation of causal risk. These issues have been extensively reviewed elsewhere (Rutter, 2007 & in press) but here we merely note briefly some of the key features. Others are presented in more detail in the chapters that follow.

For example, with respect to statistical devices, so-called 'propensity' analyses (propensity meaning the likelihood of having the risk experience being studied) have been undertaken in order to determine whether the risks associated with some particular feature are a function of that feature or, rather, of the risk factors that lead to the occurrence of that feature (see Sampson et al., 2006). Again, examples are given in the chapters that follow. But the point here is simply that attention to the origins of the risk factor can be hugely important in understanding whether or not the effects of that risk factor are as claimed. The issue is important because, to a considerable extent, the behaviour of individuals influences the types of environment they experience.

Alternatively, what have been termed 'mediation analyses' have been used to determine whether the risk effects associated with some particular risk environments are due to one element or some other element. The point here is a quite simple one. Examples are given in

Chapter 2, although the statistical techniques used in these older reported studies are not as sophisticated as those that are available now. The importance of all of this for policy implications is that interventions need to focus on the element that actually brings about the risk rather than those that are merely associated with the risk effect but which are not themselves responsible for the causal effect.

Although there are numerous subsidiary questions, perhaps the most fundamental concerns the difficulty in moving from an observed association or correlation to a causal inference. That is crucially important from a policy perspective because there is no point in focusing attention on some feature that is only accidentally associated with the causal effect, rather than with the key elements that actually bring about the causal impact. An all-pervasive problem is the possible impact of so-called unmeasured confounders. What this simply means is that, with any observed association, there is a large range of associated features that may mimic the causal effect, without being responsible for the causation.

A widely publicised example concerned the effects of hormone replacement therapy (Academy of Medical Sciences, 2007). A large scale prospective study showed benefits that were contradicted by the evidence from randomised controlled trials. The crucial confounder in this case concerned the major differences, from the rest of the population, in the characteristics of the women choosing to use hormone replacement therapy.

Traditionally, there are statistical methods for controlling for such confounders but they only work if the confounders are adequately conceptualised and measured. Inevitably, there is always the possibility that confounders that are either not conceptualised or not measured adequately, may be responsible, artefactually, for causal effect. Many of the scientific strategies that are mentioned in subsequent chapters focus on this as an issue. In theory, randomised control trials are supposed to be the way of dealing with this problem most adequately. The central issue here, however, is that very few features relevant to family policy are either practically or ethically open to randomised controlled trials that introduce a risk factor in order to study its

effects. Accordingly, there needs to be recourse to a range of other approaches that may tackle the basic issue of inferring causation from observed associations. As already noted, however, randomised controlled trials have a major place in the evaluation of planned preventive or therapeutic interventions or policies.

Finally, in the following chapters, we seek to illustrate all of this by reference to a selected number of issues. In each case, we try to indicate what the science has shown and also how that has either led to, or should have led to, changes in thinking on family policies. Our choice of issues has been determined by those that most clearly illustrate the role of science, and there has been no attempt to provide an exhaustive review of the use of social/behavioural science to provide all the evidence relevant to family policies. For various reasons, the report had to be written in just two months in order to show just what good science could contribute to a complex area of public debate. This meant a concentration on the areas of expertise of the Working Party members. This was adequate to provide what was needed on the interface between science and policy but meant that it was impossible to provide a systematic review of all areas of family policies, and that was ruled out as an objective.

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2 FAMILY STRUCTURE, BREAK-UP AND RECONSTITUTION

The whole of this report is concerned with one or other aspect of family functioning but, in this chapter, we focus particularly on issues in relation to family structure – starting with the historical example of 'broken homes', which led to much controversy half a century ago. We then move on to discuss the initial assumption that any associations between parenting and child behaviour research reflected a unidirectional socialisation causal effect from parents on the children. The controversies in the 1960s and 1970s were all concerned with mothering, whereas in the 1970s and 1980s academic discussions began to pay attention to fathers (e.g., Lamb, 1976) and ask whether children might benefit from an increased involvement of fathers in the upbringing of children (Lamb, Pleck & Levine, 1985). That is a broad topic and there is space here only to concentrate on the question of whether the effects vary by the qualities of the father. We then turn to the controversies over the differences between marriage and cohabitation. The crucial scientific evidence on this topic is largely lacking, so we content ourselves with outlining the issues and how they should be tackled. We look next at the effects on children and on parents of parental remarriage and of living in a reconstituted family. Finally, we consider a few of the legal issues surrounding marriage break-up.

BROKEN HOMES

Although the literature goes back further, in many ways the most influential starting point was Bowlby's study (1946) of 44 thieves. He observed a high rate of broken homes in a group of boys showing delinquency, and concluded that broken homes were a key causal influence. His 1951 monograph for the World Health Organization

took the claim somewhat further by postulating that the key issue was one of parent-child separation (Bowlby, 1951). In 1959, the eminent social scientist, Barbara Wootton, made a scathing critique of the claims that broken homes caused delinquency (Wootton, 1959) and three years earlier Bowlby published his own study of children admitted to a TB sanatorium, finding that the effects of separation were not as great as he had previously supposed (Ainsworth, Boston, Bowlby & Rosenbuth, 1956). We were left with a somewhat inconsistent association, the meaning of which was in doubt.

The need, as ever, was to consider what might be the alternative hypotheses and then put them to the empirical test. Rutter (1971) made two sorts of comparisons. First, happy and unhappy separations were compared with respect to their association with antisocial behaviour. The findings were clear-cut in showing that the association applied to unhappy separations but not to happy ones. The second comparison was between divorce and bereavement. Bereavement is, obviously, the most final separation, but it differs from divorce in not having been usually preceded by conflict and discord. His findings were that the association with antisocial behaviour applied to divorce, but only very weakly to bereavement. Fergusson and Horwood (Fergusson, Horwood & Lynskey, 1992) used the findings from the Christchurch longitudinal study to contrast the effects of family discord (controlling for the amount of separation as measured in various ways) and the amount of separation (controlling for the presence of discord). The findings clearly showed that the risk for antisocial behaviour applied to discord and were of very little importance with respect to separation as such. The findings in relation to educational outcomes may be different (Steele et al., 2009). Harris, Brown, and Bifulco (1986) had similarly noted that family break-up was a risk factor for later depression, and they examined the alternative explanations of this being a function of the parental loss leading to poor parenting and the possibility that it was the loss per se that created the risk. The findings showed that poor parenting was the major immediate risk factor. Poor parenting constituted a risk even in the absence of family break-up, whereas family break-up carried little

risk if it was not also followed by poor parenting. Divorce was important as an indirect, distal influence that made poor parenting more likely, but its proximal direct effect was quite small.

More recently, epidemiological (Kessler, Davis & Kendler, 1997), twin (Kendler et al., 2002; Kendler & Prescott, 2006), adoptee (Amato & Cheadle, 2008; Burt et al., 2008), and children of twin studies (D'Onofrio et al., 2006 & 2007) have re-examined the effects on children of parental death and parental divorce. The data are consistent in showing that the adverse effects on the children of parental divorce are considerably stronger than those from parental death (with the possible exception of parental death as a contributing factor in the causation of major depressive disorders – see Kendler & Prescott, 2006). So far as divorce is concerned, the findings are also important in showing that the effects can have an impact on functioning even in adult life and that these include the intergenerational transmission of marriage break-up. Finally, although genetic influences on people's behaviour are involved, the risks to the offspring from parental divorce are largely environmentally mediated.

What the twin designs do is to contrast the effects within pairs of identical twins (who share all their genes) and fraternal twins who on average share only half. The difference in the degree of genetic relatedness of the two types of twin-pair allows genetic and environmental contributions to be contrasted. Adoptee designs contrast effects within adoptive families who provide rearing experiences but not genes and within biological families who transmit genes but not rearing. Children of Twins (CoT) design use contrasts between the offspring of identical twins who are half-siblings and offspring of fraternal twins who are cousins (i.e., a weaker genetic link). All of these designs (and other variants of them) constitute 'natural experiments' in which the effects of genes and of environments can be separated.

Similar questions need to be asked in relation to family discord and parental negativity to the child. Three different strategies have been used to examine the varied roles of genetic and environmental influences. First, multivariate analyses of twin data were used by Pike

and colleagues (1996), making use of a cross-twin and a cross-trait comparison. That is the cross-twin aspect was that used to make the usual contrast between identical and fraternal twins. The cross-trait aspect treated parental negativity as a trait. This enabled the twin comparisons to be used to examine the relative strength of genetic and environmental influences on parental negativity. What the findings showed was that there was a substantial environmentally mediated effect but, also, that about one quarter of the variance was accounted for by genetic mediation. O'Connor and colleagues (1998) used an adoption design in which they examined the effects of adoptive children's behaviour on the negativity shown by their adoptive mothers (who reared them, but who had no genetic link with them). Ge and colleagues (1996) made a similar comparison. In both cases, what the results showed is that there were significant effects on mother's negativity deriving from the child's disruptive behaviour. In other words the associations were bi-directional.

The third approach, used by Caspi and colleagues (2004) used a comparison within pairs of identical twins in order to isolate environmentally mediated effects. Because they were identical (monozygotic), they will not have differed genetically to any appreciable extent. A prospective longitudinal study of high risk families constituted the sample. Mothers' negative expressed emotion to each child was assessed when the children were aged 5, and effects were considered in terms of the children's behaviour as assessed at school by teachers two years later. In other words, the very rigorous test of using different informants for the risk factor and the outcome variable, and examining effects across a radical change of environment (i.e., starting school) dealt with possible rating biases. In addition, the child's behaviour at age 5 was entered into the analysis so that the effect was assessed in terms of changes in behaviour between 5 and 7 years. What the findings showed was that the twin who was most exposed to mother's negative expressed emotion was significantly often the twin who showed the most disruptive behaviour two years later. The findings provide a striking confirmation of an environmentally mediated effect. Obviously, too, they raise the

question as to what it was about the circumstances with the twins that led the mother to respond so differently to each member of an identical pair.

If discord and conflict constituted the key risk factor, it might be expected that the association with maladaptive outcomes would begin before the family break-up and might also continue after it where the break-up did not lead to a resolution of the conflict. Longitudinal data from the British National Child Development study (NCDS) were used by Cherlin and colleagues (1991) to test the former possibility with findings that showed the risks frequently began well before the moment of break-up (see also Sun, 2001). However, although this was the case at age 11, a later follow-up in adult life showed that the late effects of divorce increased over time (Cherlin et al., 1998). The findings suggest that part of the effects of divorce reflect pre-divorce features but, in addition, divorce itself (or the consequences associated with it) also has a lasting effect. The effects of post-divorce conflict were examined by Buchanan and colleagues (1991) who showed that the risks following break-up were largely moderated by whether or not the break-up led to harmony or continuing conflict.

One further possibility was that the risks to the children were associated with the atypicality of family break-up due to divorce, rather than features associated with divorce as such. A comparison across the three British cohort studies (with births in 1946, 1958 and 1970) spanned a time when divorce rates rose markedly. If the risks stemmed from atypicality, then the risks should diminish markedly as divorce became much more common. In other words, the higher the rate of divorce in the general population, the less any individual divorce will be viewed as atypical. In reality, the findings showed that the risks remained remarkably stable (at least as measured) over this time period (Ely, et al., 1999; Sigle-Rushton, Hobcraft & Kiernan, 2005).

Putting together the issues that arise out of the findings just discussed, it is clear that there are three major problems in assessing the effects on children associated with parental divorce. First, we need to consider whether any ill-effects found are due to the characteristics

of the parents who divorce rather than to the effects of the divorce. As noted, research findings indicate that part (but only part) of the effects are a function of pre-divorce family features. Second, it is necessary to ask whether the adverse consequences for children that are associated with the divorce are due to divorce per se or, rather, from the umpteen post-divorce features. Continuing inter-parental discord is probably the strongest of these but, also, we have to consider possible ill-effects from parental remarriage, the relationship with the new step-parent, the arrival in the family of step siblings, the birth of a half-sibling from the new partnership, and the stresses associated with needing to have a foot in two homes (the home of the parent, usually the mother, who is caring for the child, and the home of the other parent). Of course, the event of divorce will have set in motion this train of circumstances, thereby having a distal causal effect (meaning an effect at a distance that predisposes to some other risk factors). Nevertheless, it might be that the proximal causal effect (meaning that which is more directly involved in the immediate causal effect) concerns post-divorce circumstances. Thirdly, it is necessary to consider possible moderating effects – meaning features that lead to different effects in different groups. The most obvious of these is whether the divorce had been preceded by serious parental conflict that impinged on the child, in which case the break-up may have brought a much needed relief provided the conflict did not continue post-divorce. Alternatively, if the divorce had not been preceded by conflict and therefore came as a complete surprise to the children, this may actually have been more stressful for them. The theme that links these three problems is the ever-present need to take a lifecourse perspective in which divorce may be a key event but the risk processes preceded the event and continued after it (see Chapter 5).

Possible selection effects

Other research strategies beyond those already discussed, have also been used to assess the strength of divorce effects on the children after taking account of selection into divorce. For example, siblings who

have experienced parental divorce as a child may be compared with other siblings who did not because they were over 16 years of age when the discord occurred (e.g., Ermisch & Francesconi, 2001; Ermisch, Francesconi & Pevalin, 2004; Björklund & Sundström, 2006; Björklund, Ginther & Sundström, 2007). The method controls well for enduring attributes of the mother but may introduce new factors (such as parental conflict that arose at a time that meant that it impinged on one sibling but not the other) that influence both the divorce and the children's experiences.

Although there is no perfect solution, estimation of causal effects with different scientific methods, allows an accumulation of evidence that is less dependent on one particular approach. Evidence from many countries has indicated that a simple comparison of children from intact families and those broken by divorce always shows a substantial difference that favours intact families. The methods we have noted indicate that simple comparisons based on the **event** of divorce do not take into account influences that reflect the sort of people who divorce and the sort of family environment they provided before the divorce. That is, the comparisons based on the event of divorce may be valid, but nevertheless it could well be that the effects found reflect, in part, either the characteristics of people who divorce or the family relationships prior to the divorce. However, the overall findings do indicate that part of the adverse effects do stem from the circumstances surrounding the divorce (see, e.g., Cherlin et al., 1998).

Role of fathers

One of the issues that frequently gives rise to disagreements between divorcing parents is the extent to which both should continue to be involved in the upbringing of the children and, in particular, whether the non-resident parent (this is usually the father) should be able to have the children to stay with him. There is now an abundance of evidence showing that fathers do have an impact on children's social, emotional and cognitive development (see Parke, 2002; Commission on Families and the Well-being of Children, 2005). It came to be the

given wisdom that children's development fared better the more that fathers were present in the home and were actively engaged in childcare. There were numerous studies documenting this association, although there was a lack of evidence that this represented a causal effect of the amount of contact per se. It is quite possible that the benefits derived from the qualities of the fathers who spent a lot of time in childrearing. Jaffee and colleagues (Jaffee, Moffitt, Caspi & Taylor, 2003) asked the crucially important question as to whether the effects were a function of what the fathers were like. What they showed was that, in keeping with the traditional view, active involvement of fathers was beneficial provided that the father was not seriously antisocial. However, if the father was markedly antisocial, then the greater the father's involvement, the worse the outcome.

The findings on the ill-effects for children of the involvement of markedly antisocial fathers in their upbringing have the important policy implication that when considering the role of fathers it is essential to consider what the fathers are like. However, there is also the broader issue of the extent to which, following divorce, there should be a 50:50 split between the two parents for the care of the children. This issue was considered in the Family Commission report (2005) and, therefore, is not re-discussed here. The evidence is convincing (Dunn, 2004) that, unless the father is markedly antisocial, children benefit from his continuing involvement. However, few fathers in intact marriages or in marriages prior to divorce have as much as 50 per cent involvement, so any court decision based on equal involvement is likely to mean a distinct change from what previously occurred (which could be unsettling for the children). That is why decisions are best based on assessments of the overall pattern of family relationships and family functioning, together with the views of the children involved, rather than according to any rigid formula.

Moderating effects

Whilst there is a wealth of evidence showing big differences among children in the ways in which they respond to divorce, very little is

known on the reasons for these differences – i.e., the moderating features that make for these differences. We have noted already the moderating effect of continuing post-divorce conflict – outcomes for children being worse when that occurs. Conversely, there is a limited amount of evidence suggesting that children may suffer more from divorce that has not been preceded by conflict (Amato, 2001; Amato & Gilbreth, 1999). The speculation is that, especially with younger children, divorce in those circumstances may seem both inexplicable and perhaps unreasonable, whereas divorce that puts an end to daily conflicts may be experienced by the children as a relief. The other possible major moderators are the effects of the divorce on the mother's mental health and the effect on her income. Coleman and Glenn's (2009) review showed that the two tended to be associated but there was little evidence on the extent to which this influenced (moderated) the effects of divorce on children.

Effect of parents on children or effects of children on parents

Up until this point, most of the literature on divorce and on parenting adopted a unidirectional perspective in which associations were interpreted entirely with respect to parent effects on the children. An important review paper by Richard Bell (1968) challenged that assumption and argued that many of the findings were as likely to be child effects on parents as socialisation effects stemming from the parent. Numerous studies, using a variety of different research strategies, have shown the reality of child effects (Bell & Harper, 1977). Here we will simply note three important ways in which the question was tackled. First, in children with hyperactivity and attention problems, the direction of effects was tested by determining what happened to measures of family dysfunction when the child's behaviour was markedly improved by stimulant drug medication. The findings (Barkley, 1981; Schachar, Taylor, Wieselberg, Thorley & Rutter, 1987) were consistent in showing the beneficial effects on family functioning of chemically induced improvements in children's behaviour. Second, Anderson, Lytton and Romney (1986) used an

experimental paradigm of an ingenious kind to compare mother effects and child effects. The sample used comprised both children with disruptive behaviour and children without behavioural difficulties. Mothers had to engage children in a clearing up task, and measures were taken of both mother's behaviour and child's behaviour. The focus for this purpose needs to be on the comparison between mothers interacting with their own child and mothers interacting with someone else's child, with the key comparison being whether the child in question did, or did not, show behavioural disturbance. What the findings showed was that there were both parent and child effects, but in this experimental situation the child effects seemed to be more influential. That is, mothers were affected by the behaviour of the child whether it was their own child or someone else's.

The third approach involved the use of prospective longitudinal data, examining the direction of predictive effects. This strategy has been used with great effect by Kerr, Stattin and their colleagues, investigating whether or not parental supervision did, or did not, have an effect on children's antisocial behaviour. They had earlier (Kerr & Statin, 2000) noted that the findings from previous research were ambiguous because of the measures used. In most studies, what was asked about in questionnaire and interview surveys was whether the parents knew where the children were and what they were doing. They argued that this was really a measure of parental knowledge (obviously influenced by what the young people told them) and not just parental actions. In the longitudinal study, the findings showed that whereas the children's behaviour predicted over time various aspects of parental behaviour at a different point, the reverse did not apply. The validity of the causal inference was assessed by using multivariate approaches to take a range of relevant variables into account and by determining whether or not the findings at a later point were accounted for by measures at an earlier point. The findings apply to particular aspects of parent behaviour but, together with the other research, the conclusions are clear-cut in demonstrating that parent-child interaction is a two-way process (Kerr, Stattin & Engels,

2008; Kerr, Stattin & Pakalniskiene, 2008). The findings do not necessarily mean that parental supervision and monitoring are of no value (see Fletcher, Steinberg & Williams-Wheeler, 2004) but they do indicate the importance of two-way effects.

The findings of rigorous research, using multiple research strategies, has shown that the original postulated risk factor (i.e., parent-child separation stemming from family breakdown) misidentified the key risk influence. The focus has shifted to looking at family discord and conflict and it also moved away from a unidirectional effect to a bidirectional process in which children evoke parental behaviour, just as parents influence child behaviour. Numerous questions remain regarding the details of daily functioning that puts children at risk, but what is clear is that the main, direct risks lie in the quality of family functioning over time and not in the event of divorce per se (although this does have an important distal predisposing effect). In other words, the conflict associated with divorce sets off a train of circumstances that has more immediate effects on the children. As this brief review of research findings indicates, matters are rarely settled on the basis of one all encompassing study. What high quality research does, instead, is tackle in a programmatic, sequential fashion, a series of possible alternatives in order to focus down on what seem to be possible key mediating causal mechanisms.

RECONSTITUTED FAMILIES AFTER FAMILY BREAK-UP

The complexities of the multiple situations that may follow divorce – including remarriage and the entry into the family of step-parents and then half-siblings born to the same mother but now to a different father, are well brought out in the longitudinal studies undertaken by Hetherington and her colleagues (1989) in the US and the longitudinal study undertaken by Dunn and her colleagues in the UK based on the ALSPAC epidemiological/longitudinal study (Dunn,

2004 & 2008; Dunn, 2003; Lussier et al., 2002; Cheng et al., 2006). The subtitle of the Hetherington paper (Winners, losers and survivors) clearly brings out the heterogeneity of outcomes. Some children are better off following the break-up (or the remarriage), some are worse off and some, despite difficulties, manage to find a way of coping successfully.

Several key findings emerge from this research. First, on the whole, children from cohabiting families prior to the family break-up exhibited significantly more difficulties associated with their parents' separation than did children in families headed by a couple who were originally married. However, this finding is much complicated by two features. On the one hand, people who cohabited differed systematically from those who married, particularly in a higher rate of risk factors such as teenage parenthood, level of education and economic resources. On the other hand, the overall term 'cohabitation' covered a most diverse range of situations. Thus, there were firmly committed couples whose relationship was very similar to those in marriage, apart from the legal difference. Second, children experiencing a second separation from a remarriage relationship also tended to suffer more. Nevertheless, on the whole it was striking that the effects of parental separation were broadly comparable in first married and remarried families. It appears that although children in step-families may experience somewhat less warm and supportive relationships with their step-parent, it does not follow that the separation is associated with any less distress as a result. Finally, throughout all the research, it is clear that risk and protective effects are much more strongly associated with the qualities of the parental relationship and with the family functioning as a whole than with its legal form. The implication is that the policy attention needs to focus on the steps needed to foster good family functioning, putting the specific issue of family structure at a lower level of priority. Nevertheless, the evidence suggests that multiple partnering and separation may be cumulative in their effects and, hence, that serial re-partnering is not generally a good option.

Three other important findings of this research require emphasis. First, there is the evidence on the importance of the quality of the relationship with the non-resident parent. Whilst it is difficult to sort out the specifics of cause and effect relationships, there is no doubt that an important goal should be doing whatever can be done to improve and maintain the quality of that relationship when it is constructive for the children. Second, according to the children's own reports, the relationship with grandparents, perhaps especially those on the mother's side, were very important in providing support, guidance and love. The focus on the family needs to include the older generation as well as the nuclear family. Whilst recognising the potential beneficial role of grandparents, once more decisions need to be taken in the light of pre-existing relationships and their quality vis à vis the child. Third, children's reports also indicated the value they placed on the support of their friends and the ability to confide in them and discuss their situation.

Generally, initiatives aimed solely at addressing either family structure or social/family processes fail to appreciate that healthy families are more likely to flourish in environments in which the relationship between the parents is strong and committed, and in which families have access to the material, social and psychological resources they need to thrive. Accordingly, legal, mental health and school initiatives, as well as policy reforms, should adopt a comprehensive approach towards reducing the risks in children's lives, including parental divorce. With respect to the role of fathers, initiatives aimed at maintaining the role of fathers after a divorce that do not also address the related factors influencing father involvement, risk being ineffectual or, even, detrimental. These contextual and socioeconomic factors include: employment; antisocial behavior and mental health issues; interpersonal issues, such as ongoing conflict with the mother of the children, and prior relationship with the children together; societal attitudes, such as views about how far 50:50 arrangements can work; and the lack of appropriate intervention to encourage or enforce Court rulings.

Marriage and Cohabitation

In the UK (Centre for Social Justice, 2006), in other European countries (Kiernan, 2004) and in the USA (Stevenson and Wolfers, 2007) there has been a strong increase in the number of people living together without marrying, although in the USA this has been, at least up to now, mostly a prelude to marriage. Marriage is a legal event and a couple's legal status is not the same thing as their living arrangements. Differences between the effects of marital living and living as divorced, separated, widowed or never-married, which constitute the bulk of the evidence used in Waite and Gallagher's The *Case for Marriage* (2002), are not necessarily the consequence of the legal status but could be a result of living in partnership rather than singly. There is widespread and pervasive evidence that unmarried cohabiting parents separate more frequently and more quickly than do married parents (e.g., McRae, 1993; Maclean & Eekelaar, 1997; Andersson, 2002; Kiernan, 2004). In the Millennium Cohort Study (MCS) sample, children born to cohabiting parents were less than half as likely as those born to married parents to be living with both those parents when they were 3 years old (Benson, 2006) and a third as likely when they were 5 years old (Kiernan and Mensa, 2009).

On the face of it, it would seem that couples living together without being married are much more likely to separate than married couples. However, this ignores crucial considerations. To begin with, the non-married but cohabiting couples are very heterogeneous. Some, although non-married, are as committed in their relationship as the married. One possible reflection of that is the large increase over time in the UK of births to unmarried couples registering both the father and mother as parents. At the other extreme, some are living together for a variety of reasons but without any commitment (or even expectation) to stay together indefinitely (see Eekelaar & Maclean, 2004; Eekelaar, 2007). Some qualitative studies (e.g., Lewis, 2001) have suggested that married people are more likely to be strongly committed to living together than was the case with the unmarried but cohabiting. But is marriage the cause or consequence

of that commitment? There are no studies to date that adequately deal with that issue, although some have attempted to do so.

The second consideration involves the major factors involved in 'selection effects', meaning the fact that those who marry before they have children are likely to be rather different sorts of people from those who have children while cohabiting. The factors predisposing childbirth outside marriage include being economically worse off (Kiernan & Smith, 2003), lower educational attainments, less religious commitment, the experience of sex before 16, having a widowed mother (Thornton et al., 2007), black ethnicity, having been a teenage parent, and having a low income (Benson, 2006). It should be noted that most of these predisposing factors have strong statistical effects not only on the propensity to marry but also on parenting. Accordingly, it is quite possible that the disadvantages experienced by children born to those who are unmarried but living together have more to do with the characteristics of the people concerned than with whether or not they are legally married. It should also be noted that the disadvantages of marrying young were evident in the immediate post-war years when marriage rates were much higher than today (Thornes & Collard, 1979). In that era, marriages at a young age were much more likely to break up than marriages at later ages.

Bearing in mind these findings, a thought experiment can be carried out. If legal steps were taken to ensure that more people in the high risk group married, what would happen to marriage stability? The evidence suggests that probably it would lessen and that the differences between the married and cohabiting would diminish. It has been argued that the emphasis should be on the quality of parental relationships (with each other and with the children) rather than on marriage as such (Acs, 2007). However, it cannot be claimed that we have adequate evidence on the pros and cons of marriage versus non-marital cohabitation.

There is abundant evidence to conclude that committed loving relationships between parents benefit children (Coleman & Glenn, 2009). Also, the scientific findings make it very clear that any conclusions on the benefits of marriage must be based on

considerations that include differences between people who do, and who do not, choose to marry. In other words, people choose whether or not to marry, and the differences in child outcomes between groups of married and cohabiting couples with children may reflect the sorts of people who choose to marry, rather than the effects of the marital situation as such. That is not to say that marriage does not engender commitment. But we cannot ascribe all the differences between the married and non-married to the degree of commitment between partners (either as a cause or consequence of marriage). That is the main message from social science with respect to family policies concerning marriage.

Lone Parenthood

Much of the case for the overwhelming benefits of marriage is based on comparisons between married couples living together and a heterogeneous mixture of all other situations (see Waite and Gallagher, 2000). The latter group included those who have divorced, as well as single parents who have never married, and marriages in which one parent has died. The findings are indeed consistent in showing the somewhat better outcomes for married parents and for their children. As we have discussed, the uncertainties concern the causal processes concerned. Exactly comparable issues arise with respect to lone parenthood. Many studies have shown that, on average, children reared by single parents fare somewhat less well on a range of outcome measures than children whose parents stayed together (see e.g., McLanahan & Sandefur, 1994; Amato & Booth, 1997; Chapple, 2009). As with marriage, the uncertainties arise over the causal mechanisms involved (see Chapple, 2009 for a good review of the strategies to test for causation). Thus, there is a strong association between lone parenthood and poverty, as well as with ethnicity. Statistical analyses indicate that much of the disadvantage for children stems from the poverty (McLanahan & Sandefur, 1994). As with cohabitation, it is also the case that lone parents are a very heterogeneous group. Some have never married or cohabited with the father of the child, and

some were married but then divorced. Taking account of these (and other) differences in the 'routes' or 'selection' into lone parenthood are essential in any study of effects on the children.

The issues involved in disentangling this association are well-illustrated in Kiernan and Mensah's (in press) use of the Millennium Cohort (one of the UK national prospective studies) to examine early educational attainment. Among the children who had not experienced poverty, 60 per cent had good achievement as compared with 26 per cent of those who had lived in persistent poverty. The associations with parenting were of the same general order – 70 per cent good achievement in those with a high (good) score on parenting compared with 31 per cent with a low score. Putting poverty and poor parenting into the same statistical model showed that both had independent effects on achievement. The consequence of taking parenting into account statistically was that the effects of poverty on achievement were reduced by about 50 per cent, although there was no interaction between the two. That is, the effects of parenting were much the same at all levels of parenting. Some commentators might be tempted to conclude that good parenting can compensate for poverty but the lack of an interaction indicates that it cannot. That is, there were ill-effects of both poverty and poor parenting but they were **independent** of each other. There was no evidence of a greater benefit of good parenting for those experiencing poverty.

It should be added that, as the authors of this study were well aware, the findings could be influenced by variables not included in the analysis, and the associations cannot be assumed to be necessarily causal (because the design did not include a means of testing for causation). This analysis did not concern lone parenthood but it illustrates well the difficulties that science faces in sorting out causal mechanisms in complex situations.

So far as policy implications are concerned, it is also likely to be relevant that, for obvious practical reasons, single parents coping with childrearing on their own will be unlikely to be able to provide so much time for the children as two parents who can share responsibilities. In addition, the lack of two parents in the home will

make shared decision-making more difficult because of the need for reliance on friends or family. There is no doubt that, as a group, children of lone parents are disadvantaged but what remedies are likely to be most efficacious requires a better understanding of causal influences than is available at the moment. It should be added that both meta-analyses and detailed reviews show that the overall effect size for the effects of lone parenthood on children's psychosocial development is small, and that there is great heterogeneity in outcomes as in findings on divorce (Chapple, 2009; Lansford, 2009).

DIVORCE, SEPARATION AND THE LAW

In this section, we consider briefly some key aspects of the complex interaction between law and social behaviour. Because divorce is a legal event, its prevalence reflects the operation of the justice system as well as of marital behaviour. Gibson (1980) showed the fluctuations in divorce rates after World War II, and tracked the availability of Legal Aid. People have been adept at evading attempts to control marital behaviour through the content or structure of divorce law (Eekelaar, 1994). In both the United States and Europe, the legal ground of divorce by mutual consent masked *de facto* unilateral divorce so that the change in the law often followed social change and had only slight, short-lived effects on underlying trends in divorce rates (Wolfers, 2006; Kneip & Bauer, 2009). Cultural, social and demographic issues have proved more important than changes in the law.

The evidence is also clear that the economic circumstances of families that separate are worse than those that remain intact (Duncan & Hoffman, 1985; McLanahan & Sandefur, 1994; McKeever & Wolfinger, 2001; Fisher & Low, 2009) and that the rate of unmarried cohabitation, and accordingly of separation, is higher for people whose parents have separated (Kiernan, 2004). That is, when considering the effects of divorce and the routes into it, it is necessary to consider the same sort of 'selection' issues that we raised in the

section on cohabitation and marriage.

Given that unmarried parents are generally worse off economically than married ones (Kiernan & Smith, 2003) and that both groups suffer economically on family break-up, the weakness of the legal remedies available to separated, unmarried parents compared with those available to married parents has been criticised (Law Commission 2007). A comparison between those Australian states that have improved remedies for separating, unmarried cohabitants and those that have not, found that the introduction of such remedies did not affect marriage rates (Kiernan, Barlow & Merlo, 2007). The evidence on the effectiveness of legal remedies for improving the economic status of divorced persons is thin indeed. Research in the 1980s showed that 'maintenance' payments, though modest, made it more advantageous for divorced mothers to remain in low paid work than to rely on state benefits (Eekelaar & Maclean, 1986). It also seemed that divorced mothers were more likely to remain in the house with the child after break up in the 1990s than they were in the 1970s; and that formerly married mothers were more likely to receive monetary payments from the father than formerly unmarried cohabiting mothers. Of course this feature could well be a consequence of the fact that formerly married fathers are more likely to be exercising contact with the child, rather than anything reflecting the operations of the legal process (Maclean & Eekelaar, 1997; Marsh, Ford & Finlaysonn, 1997). The extent to which the legal process can affect the dynamics of personal relationships is unclear because methods of intervention vary considerably, and without randomised controlled studies no causal inference is justifiable (Beck & Sales, 2000). One US project showed higher settlements by couples having mediation and, as many as 12 years after the divorce, there was greater father-child contact than with couples not having mediation (Emery, Sbarra & Groves, 2005). However the sample size was small and the mediation procedures were particularly intense. Also, once again, findings are likely to be influenced by 'selection' effects; that is, those opting to have mediation are likely to be different in systematic ways from those who do not. Mediation may be helpful but there is little

evidence that it would bring benefits if it were to be made compulsory.

In England, 'in-court' conciliation meetings that both parties were expected to attend, did result in increased frequency of contact but it did little to improve inter-parent relationships and, at a two-year follow up, measures of the children's wellbeing showed no improvement at all, although parental wellbeing had improved (Trinder & Kellet, 2007). Australian research provided evidence of the possible effects of legislation encouraging courts to promote shared care. This showed that the quantity of contact (including overnight stays) with the parent outside the child's household increased. Nevertheless, four months later, the anxiety levels in the children in cases that had proceeded to court were actually higher than the remainder. The researchers concluded that 'a significant proportion of children emerged from court under conditions that meant substantially shared care between their parents posed a psychological strain on them', although they stressed that this is not the case when the care was shared between cooperative parents (McIntosh & Long, 2007). In the UK, because divorce tends to be thought of as a legal issue, there has been a reluctance to undertake rigorous controlled evaluations of interventions designed to change behaviour. Without such evidence, we will continue to lack knowledge on how to achieve better outcomes for children when couples cannot agree on such matters.

Programmes designed to help parents through the transition of separation, by means of education and emotional support, have received strong reports of client satisfaction but the effectiveness overall has not been established and the findings are quite mixed (Hunt & Roberts, 2005). It has been suggested that participation in divorce education may be associated with an increase in parental knowledge, but there is little evidence to suggest that there are other positive outcomes (Douglas, 2006). There is even less research on the effectiveness of compulsory types of sanction in cases of non-compliance with court orders concerning children and very little alternative types of intervention. Pearson & Thoennes (1998)

surveying US enforcement programmes, found substantial levels of user satisfaction but less success in resolving problems (especially in higher conflict cases). The complexities of divorce/separation mean that much more research needs to be done on the effects of legal and psychoeducational programmes, especially given that some of these are legally required (Beck et al., 2009). It seems very unlikely that one approach will suit everyone (Salem, 2009). One problem is that parents who go to Court to resolve issues regarding child contact often lack the basis of a prior strong partner relationship.

It may be concluded that social science findings have done much to sort out the various key components involved in the consequences for children of family break-up, contact with non-resident parents, and reconstituted families following remarriage. It is also apparent, however, that these findings do not boil down to a straightforward set of policy recommendations. There is no doubt that a focus on the quality of family life and on the quality of parenting must be an essential component. Legal interventions have had, at best, a very mixed success in lessening bad outcomes for children.

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3 NON-PARENTAL CHILD CARE

Much research has shown the importance of the early years in providing the next generation with a good start to life. In that connection, much attention has focused on the role of non-parental care and especially of that provided in the form of group day care. In this chapter we discuss the contributions of social science in aiding decision-making on this topic, which continues to involve controversies.

Throughout history and across multiple societies, child care has typically involved a range of people in addition to the father and mother – as clearly brought out in Werner's (1984) book with the splendid title of *Child Care: Kith, Kin and Hired Hands*. Initially, the Bowlby review in 1951 for the World Health Organisation argued that there were risks for young children's attachment relationships if care was extended beyond the mother. It soon became clear that this was not so, and concerns switched to the serious risks that were thought to derive from group day care. Again, various early reviews (e.g., Belsky & Steinberg, 1978; Rutter, 1981) showed that the risks had been greatly exaggerated. Nevertheless, some studies suggested that there might be some risks to some children in some circumstances. An important role of science concerns its ability to identify different effects in different groups of people – so avoiding the dangers of misleading over-generalisations. The question shifted from the simplistic, polarising query of whether non-parental child care was generally good or bad for children, to the much more complex issues involved in whether responses varied according to such matters as the child's age, the quality and consistency of care, the family background, and whether or not the care was provided in the form of group day care. Researchers and funding agencies in the United States came to appreciate that adequate answers were not likely to be provided by further small scale studies. Rather, the need was for a very large scale prospective longitudinal study involving the collaboration of the

leading researchers in this field (which included scientists with rather different expectations on the likely findings and policy implications). This resulted in multimillion dollar funding for the National Institute for Child Health and Development (NICHD) Early Child Care Research Network (2003, 2004, 2006; McCartney et al., in press; Vandell et al., in press).

The first finding in both this study and others is that the quality of care matters. There are, for example, benefits, especially for cognitive-linguistic development and future academic achievement, when caregivers are highly attentive, responsive and stimulating (Broberg, Wessels, Lamb, & Hwang, 1997; Lamb & Ahnert, 2006; Mashburn et al., 2008; NICHD Early Child Care Research Network, 2006; Belsky et al., 2007; Vandell et al., in press). Higher quality of care seems to be promoted by better trained and paid caregivers working in smaller rather than larger groups, with not too many children per caregiver (NICHD Early Child Care Research Network, 2004). Most of the research is of the correlational variety, seeking to control statistically for confounding factors, but experimental work supports the 'quality matters' conclusion, too. The Florida Child Care Quality Improvement Study is probably the most compelling. Not only was improvement witnessed in the quality of care when staff-child ratios were improved in 450 classrooms in 150 licensed programmes, with caregivers becoming more sensitive and re¬sponsive and less reliant on negative disciplinary tactics over time, but so was child social behaviour, with fewer behaviour problems involving aggression, anxiety, and hyperactivity being reported (Howes, Smith, & Galinsky, 1995).

Perhaps what is most surprising about much of the data on quality is that effect sizes are more modest than many might have anticipated (NICHD Early Child Care Research Network, 2006). Recent work suggests that this may be due, at least in part, to the fact that most investigations both over- and under-estimate quality of care effects (Pluess & Belsky, 2009; in press) or, in the case of early interventions designed to promote well-being in the case of the most at-risk children, the effects of such programmes (Blair, 2002). This is because children differ in their susceptibility to environmental influences.

Moreover, it is not just that some, as has long been assumed, are more vulnerable to the negative effect of adversity, including poor quality care, but that the very same individuals are also more likely to benefit from supportive environments, including high-quality child care (Belsky & Pluess, in press). In other words, the susceptibility differences probably apply to both positive environments and adverse ones.

QUANTITY/DOSAGE OF CARE

No matter what the benefits for children of higher quality care and the lower costs of poorer care, quality of care is not the only factor that matters with respect to the multidimensional child care experience. Only one investigation has been specifically designed to tease apart the effects of quality, quantity and type of care – by measuring these constructs repeatedly from birth through school enrolment – and it clearly shows, at least in the confines of a longitudinal field study carried out in the USA and relying on statistical controls to discount (some) selection effects, that amount of time in child care matters *irrespective of the quality of care*. Most notably, the more time children spend in any kind of group child care across their infant, toddler and preschool years, the more aggressive and disobedient they prove to be around the transition to school (NICHD Early Child Care Research Network, 2003; 2006) and at age 15 (Vandell et al., in press). Research linking much time in care, either in terms of years or hours with increased (but low) levels of childhood aggression, has emerged in studies carried out in Norway (Borge & Melhuish, 1995) and the UK (Mathers & Sylva, 2007; Melhuish et al., 2001). Nevertheless, it needs to be acknowledged that other studies have produced rather different findings. Accordingly, some uncertainty remains on the extent to which findings vary by social context.

Whether published in scholarly journals or reported in government reports, in no case is it appropriate to link day care experience, including that which is 'early, extensive and continuous', with psychopathological levels of problem behaviour. This seems

especially the case as effects of high dosages of non-family child care on aggression and disobedience are also modest in magnitude. But, just as with quality-of-care effects, it seems problematic to dismiss or minimise the importance of findings that could apply to very large numbers of children. Indeed, the question arises as to 'what is more important, a big effect that applies to a few or a small one that applies to many?' In addition, it is necessary to balance the slight increase in physical aggression against the well documented educational benefits. Exposure to group-based child care has been associated with enhanced cognitive-linguistic functioning and academic achievement (Melhuish et al., 2008; NICHD Early Child Care Research Network, 2006), even as late as age 15 (Vandell et al., in press). There is reason to believe that such effects may not solely be a function of quality of care. This is because such effects emerge even without variations in the quality of care having been taken into account (NICHD Early Child Care Research Network, 2006; Vandell et al., in press).

It remains unclear why extensive exposure to day care seems to increase some children's levels of aggression and disobedience – in many studies, even if not all of them. It does not appear to be the result of the stress of separation, even early in life, because the child care effect on aggression seems restricted to non-familial care (Belsky et al., 2007). Thus, children cared for by a grandparent who thus experience separation from the mother, even at an early age, seems less (or not at all) prone to the child care effect in question (i.e., on aggression/disobedience). The fact that being in child care settings, especially at young ages, increases levels of cortisol (Verner & van IJzendoorn, 2006) raises the possibility that stress resulting from factors unrelated to separation from parent could play a role in the child care/aggression association. The fact that quality of care, defined in terms of how caregivers relate to children, does not account for the effect under consideration raises the query whether the mechanism of influence may involve peer processes. This is suggested, too, by recent evidence that effects of dosage of care on aggression seem most pronounced when children are in larger groups of peers (McCartney et al., in press).

The possible role of peer group influences in fostering aggression might constitute part of the explanation for the apparent effects of group day care in somewhat increasing aggressive behaviour (Belsky et al., 2007; Loeb, Bridges, Bassok, Fuller & Rumberger, 2007; McCartney et al., in press; Mathers & Sylva, 2007; NICHD Early Child Care Research Network, 2003). Similarly, it is possible that the educational benefits might operate through 'peer-effect' processes (Dmitrieva, et al., 2007; Henry & Rickman, 2005).

The next point is that by no means all non-parental care takes place in group settings. Children may be cared for in their homes by grandparents, neighbours, au pairs, nannies, or other parents of young children who take turns looking after each other's children. Curiously, such non-maternal care has been much less studied than group day care. It may be expected that the effects will vary with the child's familiarity with the non-maternal caregiver, whether care is provided within the child's home or the caregiver's home, and with the overall quality of care provided (which may also be associated with caregiver characteristics including educational level and degree of warmth). Nevertheless, although such variations are expected, it cannot be claimed that they have been shown by systematic research.

A further key consideration concerns the quality of the maternal care during the times when non-maternal care is not being used. A systematic study in Canada (Côté et al., 2007 & 2008; Geoffrey et al., 2007) showed that for children living in disadvantaged homes, behaviour and development were better in non-maternal care than in maternal care. The finding brings us back to the key issue of the quality of care and of the relative qualities of maternal and non-maternal care. The issue is far from adequately sorted out and it remains a research priority.

Systematic scientific research has done much to show how the extreme early claims of serious damage from day care were mistaken. They have also shown the multiple facets of care that need to be considered in order to sort out both the benefits and the risks. Perhaps more crucially, they have just begun to **identify the important moderating** effect of the quality of the family environment. Given

limits to our understanding about mechanisms of environmental action vis-à-vis child care effects, there is a clear need for additional research. Whereas knowledge about **what** is affected is important from the perspective of both science and policy, insight into **how** such effects obtain, be they positive or negative in character, is often critical to creating contexts that reliably yield such effects or fail to do so.

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4 RESILIENCE: GENES AND ENVIRONMENT

It is well established through both human experimental and observational studies and animal models that, with all environmental hazards (both physical and psychosocial) there is substantial heterogeneity in response. That is, some individuals suffer greatly from the stresses and adversities to which they are exposed; some seem relatively little affected; and some seem to benefit from their negative experiences. The first of these are usually described as 'sensitisation' effects and the last as 'steeling' effects (Rutter, 2006). It has been argued, persuasively, if we could understand better why there is this huge heterogeneity in responsiveness to adverse environments, we might have a better leverage on the policies that are needed to improve either prevention or intervention. The initial claims in this instance arose, not from either policy-makers or the media, but rather from clinician-researchers who postulated that some children were intrinsically invulnerable, whereas others were not (Anthony & Cohler, 1987). It soon became clear that that was a misleading way of conceptualising the issues. It was scarcely credible that individuals would be invulnerable in the same way to the hazards of infections, or of cancer or of psychosocial stress and adversity. Moreover, empirical research soon showed that reduction of resilience to a trait quality was not a sensible way of proceeding (Rutter, 2006). Much research has shown that resilience varies according to the adversity being considered and to the outcome being examined. It also varies over the course of time and social contexts. A further point is that it proved misleading to conceptualise resilience in terms of the 'chemistry' of the moment. That is because resilience sometimes resided in turning point effects that occurred in later life, long after the original environmental hazards (Laub & Sampson, 2003a; Rutter, 1996).

In this instance, it may be useful to focus first on the qualitative studies that suggest hypotheses on causative mechanisms for turning point effects in later life. The first example comes from the Laub &

Sampson follow-up up to age 70 years of institutionalised delinquent boys who formed part of the original study by the Gluecks (1950). Quantitative analyses showed the crucial importance of both Army experiences and a good marriage in helping delinquent boys turn their lives around. These effects were convincingly demonstrated through quantitative analyses but qualitative studies on the same sample provided a greater understanding of how the resilience effects might operate. John Laub interviewed a carefully selected sample of 52 individuals who had done better than expected or worse than expected on the basis of their prior behaviour and background. The benefits of army experiences (in a severely disadvantaged group at the time of the major economic recession in the 1930s) was, firstly, that the GI Bill provided college education for people who had served in the armed forces and therefore opened up opportunities for a group who had effectively dropped out of education in adolescence. Second, it postponed marriage so that instead of inevitably marrying individuals from a similarly disadvantaged, and often deviant, background, their choice of marriage partners was greatly widened (Sampson & Laub, 1996).

It might have been thought that the protective effects of marriage were an artefact of those who became married and those who did not. Here, quantitative analyses were decisive in showing that a person's level of crime varied systematically according to whether or not they were married at that period in their life (Sampson et al., 2006). The starting point was the identification of all the relevant measured influences that seemed to be associated with men getting married or not getting married. This provided the basis of a propensity score in relation to marriage choice. Then, within-individual changes over time were estimated using a particular statistical technique based on the propensity scores to look at variations in crime according to whether the individuals were, or were not, married at any particular moment. The possibility of undertaking this analysis, of course, arose through the relatively high rate of marriage breakdown and remarriage. What it showed was that marriage was associated with an overall average reduction in crime rate of approximately 30 per cent.

The qualitative analyses went on to investigate what might underlie this protective effect. It might be supposed that the key feature was simply the love and support of a wife (the study was entirely concerned with males). Obviously, that was one element but it was only one of several. Marriage also brought about supervision and monitoring by the wife. Thus, individuals who had been unemployed and drifting around with a semi-delinquent peer group, were told firmly that now that they were married and had a child they had better go on and get a regular job in order to support the family. Similarly, marriage brought introduction to a new peer group. Because the individuals were no longer hanging about street corners, both their work and their family brought them in contact with a different set of peers, some of whom provided quite positive influences. Third, marriage brought introduction to a new kin group. They both provided different role models from those experienced in the individual's own biological family and also guidance of various kinds. Other effects were also found. What the qualitative data brought out very clearly is that what, at first sight, seemed a very simple straightforward variable (namely a good marriage) actually involved a quite disparate range of potentially protective experiences not all of which could be reduced to 'feeling loved'. Note that these positive 'turning point' effects applied in adult life and not just in childhood. A further implication is that good strong family relationships and marriage can provide enormous benefits to individuals and to society (by the reduction in criminal recidivism) but only where the quality of relationships is good.

The second example is of a somewhat similar kind. Hauser and his colleagues (2006) had undertaken a quantitative longitudinal study of individuals who, in adolescence, had been in an in-patient psychiatric unit. Again, the focus was on a very high risk group. In this case, the qualitative study contrasted those who had done unusually well despite their early adversities and those who had been about average in their outcome. It was argued that there was little to be learned from the really poor outcomes because quite a lot was known about them and the interest lay in the positive outcomes against expectation.

Qualitative data highlighted three key elements. First, there was a sense of personal agency and a determination to change their lifestyle. Second, there was a quality of self-reflectiveness. In other words, these individuals who had done well against expectations had a style of thinking about what was happening to them in order to learn better about what might make a difference of a positive kind. Third, there was a commitment to social relationships. The language used in these two studies is somewhat different but the message is broadly similar; namely, it matters what people do with the opportunities presented to them.

The third example is of a rather different kind because it brought together the findings of several studies in order to focus on social and economic success of a markedly unusual kind in relation to a background of disadvantage (Gladwell, 2008). The chief points to come out of these analyses were that chance was often crucial in presenting key opportunities (Musch & Grondin, 2001) but that success came from what the individuals did to capitalise on those opportunities. A unifying element was the incredible number of hours of hard work needed to achieve success (Ericsson et al., 1993).

The human literature on 'steeling' effects (meaning, a strengthening following adverse experiences) is decidedly limited but it is, nevertheless, informative. Thus, Glen Elder's Californian studies of individuals growing up through the great economic recession of the 1920s and 1930s indicated that, whereas young children tended to suffer from these experiences, adolescents often came out strengthened (Elder, 1974; Elder & Shanahan, 2006). It seemed that many were able to cope with the additional responsibilities and that this successful coping provided them with a sense of self-efficacy and positive coping skills that stood them in good stead later on. Perhaps the parallel lies in the similar message associated with the way in which people cope with infections. Success does not come from an avoidance of infection. Rather it comes from successful coping with infection – either through natural exposure, and therefore the acquisition of natural immunity, or through the protective effects of carefully controlled immunisation.

GENE-ENVIRONMENT INTERACTIONS

At this point, we need to shift emphasis to the role of gene-environment interactions. They are directly relevant to the topic of resilience because they focus on the circumstances in which serious adversities, such as maltreatment, do **not** lead to disorder. In this connection, we focus first on the pioneering, innovative studies by Caspi and Moffitt and their colleagues using the longitudinal data from the Dunedin study (Caspi et al., 2002, 2003). We focus here just on those concerned with the depressive disorders and antisocial behaviour. Although both Caspi and Moffitt are social/behavioural scientists, they made good use, on the one hand, of the biological evidence concerning which genes might be relevant and, on the other hand, of the social/behavioural science findings on which environmental features had a substantial environmentally mediated risk effect (and yet heterogeneity in outcomes).

Their rationale was that much genetic evidence (Plomin et al., 2008) had shown that genes had a significant effect on virtually all human behaviours. Accordingly, it was highly likely that such effects would include sensitivity to the environment. The Dunedin research group were unusually thorough and scrupulous in dealing with the range of possible methodological artefacts that had to be overcome. Numerous studies have replicated the main findings (see Uher & McGuffin, 2010) but a meta-analysis on a biased minority of studies expressed scepticism about the validity of the findings (Risch et al., 2009). A careful scrutiny of the findings indicated that methodological issues were responsible for this misleading set of conclusions (Uher & McGuffin, 2010; Rutter, Thapar & Pickles, 2009; Rutter, 2010). Several points derive from this very important body of research. First, the gene-environment interactions are relatively specific to particular outcomes. Thus, the gene that plays a role in response to maltreatment in relation to antisocial behaviour is quite different from the gene similarly responsible for the outcome of depressive disorder. The finding underlines the futility of expecting resilience to apply in an all pervasive fashion across all outcomes. Second, the environmental

hazards investigated included serious adversities such as physical and sexual maltreatment. Even with these hazards, there was substantial heterogeneity of response and this heterogeneity was strongly associated with the particular allelic polymorphism of the gene concerned (i.e., with the details of the gene). Third, identification of gene-environment interactions implied, although did not prove, that the basic causal pathway for the genes and the basic causal pathways for the environments was the same or, if not exactly the same, was very closely associated. Further research is needed to identify precisely what those causal pathways are but the gene-environment findings open up possibilities that require to be investigated in the future. Up to now, resilience has mainly been considered in relation to psychological and social features, but these findings indicate that attention must also be focused on the biology. Brown and Harris (2008) have also argued for the value of a lifecourse approach. They note that the evidence for a gene-environment interaction in relation to a depression outcome is stronger for maltreatment in childhood than for life stressors in adolescence and stronger for chronic depression than for acute depressive disorders. This discussion underlines the value of bringing social science and biological research closer together.

The last point to mention is that other human experimental research concerned with the same issues has shown that the risk effects apply to genes that operate in individuals without psychopathology, as well as in those with it (Meyer-Lindenberg & Weinberg, 2006). That is an important finding because it means that attention needs to shift from a concern to identify causes of mental disorder that are supposedly entirely separate from functioning in the general population, to causal effects that span those with and without a mental disorder. This human experimental research used brain-imaging findings and molecular genetics to identify the neural (i.e., brain) effects of the gene-environment interaction. However, that could only be achieved after developing an experimental method that could mimic the environmental side of the interaction by a non-damaging stimulus that operated quickly. In their case, the stimulus was provided

by fear-evoking pictures. In a further set of studies, Meyer-Lindenberg (in press; Zink et al., 2008) focused on social status. A game was devised in which subjects were informed that two other participants were playing the game at the same time. These were labelled indirectly as either a social superior or social inferior. Brain-imaging findings differed according to whether or not the subject thought they were competing with a superior or inferior. Social/behavioural science strategies were crucial in devising the experimental stimulus but the experiments also relied on biological technology and expertise.

It is too early to claim that the research has direct policy implications but it is evident that findings have altered concepts of resilience. To begin with it is apparent that psychopathological outcomes cannot be reduced simply to the balance in the mix of risk and protective factors. However these are defined, there is marked heterogeneity in people's responses. These do not translate into fixed traits of the individual but they do include genetic moderation of environmental causes and they do include aspects of personal agency – meaning what people do about challenges and opportunities they face. The implication is that family policies need to focus on these dynamic features and not just on either promoting good functioning or avoiding adversities. Furthermore, the findings also indicate that it is unlikely that the total avoidance of challenge and stress constitutes a good way ahead. Both are an intrinsic part of biology and success comes in overcoming adversities at least as much as in avoiding them.

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5 LIFE STRESSORS

Although family policies may not deal directly with life stressors as they impinge on individuals, research on such stressors is relevant for several different reasons. First, parents are people and any considerations regarding policies on parenting need to take account of features that strengthen or undermine the upbringing of children. Social science has shown that maternal depression constitutes an important risk factor for children and this may be one reason why children reared by lone parents may be more at risk (see Chapter 2). Second, family policies need to have evidence on the extent to which there can be an exclusive focus on the current situation or whether attention must also be paid to vulnerability factors at an earlier point. Social science has been important in showing the importance of these life course considerations. Finally, family policies need to be based on an appreciation of the interface between personal functioning and social circumstances. Research into life stressors has been instructive on that point.

It has long been recognised that stressful life experiences may have adverse effects on health and may predispose to mental disorder (see Griesinger, 1965; Riese, 1969). Moreover, it was noted that in order to bring about ill-effects it was not necessary that life events be catastrophic or particularly unusual (Meyer, 1957). Meyer also recognised the importance of determining the temporal links between the occurrence of the life events and the onset of mental disorder. However, for a long time, the evidence that acute life stresses mattered relied largely on anecdote. The situation was transformed by the scientific advances brought about by Brown and Harris (1978) and their colleagues.

Five features were crucial. First, Brown and Harris recognised that some life stresses could be brought about by the person's own behaviour. Thus, rejection by a close friend was likely to be felt as stressful but the rejection might be based on how the person treated their friend. A differentiation needed to be made between **independent** and **dependent** life events. The point being made was

not that the latter were without effects but, rather, that in order to test causal inferences, it was necessary to make the distinction. In support of this point Rutter, Silberg & Simonoff (1993) noted that people **chose** whether to smoke cigarettes but that did not mean that smoking had no deleterious effect on health.

Second, Brown and Harris introduced the notion of long-term **contextual threat** – meaning, the psychological threat to the person as viewed in the light of that person's individual social context. They appreciated that the **meaning** of the acute life event might be the crucial element in whether a depressive episode occurred. Thus, they showed that an event such as the ending of a partnership or loss of a job, was far more likely to be followed by the onset of depression if it involved humiliation (Brown, Harris & Hepworth, 1995).

Third, they appreciated that acute events often derived out of long-term difficulties or adversities and that both might be influential – albeit possibly through different mechanisms. So far as children are concerned, chronic adversities seem to carry greater risks for mental disorder than do acute events (Sandberg, et al., 1998), although acute events on their own can have a risk effect (Sandberg et al., 2001).

Fourth, it was essential to take a life course perspective. Brown and Harris established the importance of current vulnerability factors such as being in a non-supportive core sexual relationship and having low self-esteem. But they also showed that these factors were often linked to adverse experiences in childhood and adolescence. For example, childhood maltreatment increases the risk of an early pregnancy; this, in turn, is associated with an increased risk of marital problems and other adversities. Although most depressive disorders in adult life seem to be provoked by an acute event carrying long term psychological threat, the great majority of such events do not lead to a depressive disorder. The evidence indicated that it was the **combination** of current vulnerabilities and an acute event that greatly increased the risk - bearing in mind that these often seem to have roots in the past. So far as family policies are concerned, it is relevant that, as Brown and Harris (1978) emphasised, women who lived in the context of social adversity were most likely to experience this toxic combination of

circumstances. As the title of the Brown festschrift volume (Harris, 2000) indicated, a central feature of the work was to bring together the inner psychological world and the external social world. In addition, it should be noted that longitudinal studies have shown that marriage relationships tend to show a dip in satisfaction in the period following the birth of the first child (see Coleman & Glenn, 2009). That is, the quality and pattern of couple relationships are influenced by the characteristics of the two individuals, by the impact of the birth of the first child, and by the prevailing social circumstances.

Fifth, Brown and Harris' studies noted the centrality of parental depression in the psychosocial risks for children. The prospective studies of young children undertaken by Murray, Cooper and their colleagues have taken further our understanding of the mechanisms involved (Murray & Cooper, 2003; Murray et al., 1996). Brown's more recent research has brought out the complex pathways involved (Brown et al., 2009). The clear implication is that family policies need to pay particular attention to the role of parental depression in the genesis of early parenting difficulties. Mother's depression is often linked with marital problems or being a lone mother. In addition, however, it is clear that the risks for children mainly stem from the chronic lack of adequate parental care brought about by maternal depression in some cases (Harris et al., 1986).

Brown and Harris' differentiation between independent and dependent life events carried the implication that the latter might be more influenced by genetic vulnerabilities operating through their effects on environmental risk exposure (Kendler & Baker, 2007). Twin designs, as used in adults, showed that this was indeed the case, but also confirmed that negative life events did truly have an environmentally mediated risk effect (Kendler, Karkowski & Prescott, 1999). Nevertheless, it should be noted that the risk is only **indexed** by the life events; it could be that multiple life events are not always influential in their own right but rather they serve as an indication of the operation of chronic adversities. Indeed, it was shown that events conveying entrapment in an ongoing highly punishing situation (such as a woman with crippling arthritis and a poor marriage being told by

a doctor that nothing could be done to help) were particularly likely to lead to a depressive episode. Brown and Harris' research also suggested that early maltreatment might act partially through gene-environment interactions (Brown et al., 2009). They suggested that the interaction might reflect the ways in which longstanding adversities (such as child maltreatment) predispose to acute life stresses. They hypothesised that early maltreatment might lead to early changes in brain development that can, in adult life, increase the likelihood that a depressive episode will take a chronic course.

It might be thought that the scientific study of life stresses is rather a long way distant from family policy considerations, but that view would be mistaken. The key message is that it is essential to take a dynamic life course perspective. Of course, it is important to know which parental practices have which risk effects for children, but the life events research indicates that, if family policies are to be effective, attention must be paid to the origins of parental practices, and this requires an understanding of the pathways by which risk effects operate over time.

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6 HIGH RISK SITUATIONS

In this chapter, we discuss two situations carrying high risk for the children: abuse and neglect (which mainly occurs within the family) and bullying (which mainly occurs outside the home). The former has obvious major relevance for family policies. It might be thought that bullying is a less relevant issue for family policies but any parent whose children have experienced bullying realises that any successful prevention or intervention with respect to bullying inevitably involves the parents. Accordingly, family policies need to address the role of parents (of both the bullies and the bullied); this is not a matter that can be left entirely up to schools.

ABUSE AND NEGLECT

It might be thought that abuse is so obviously an unacceptable, damaging experience that there is no need for social/behavioural sciences to investigate either its origins or its effects. However, that would be an unwarranted assumption for three rather different reasons. First, until Kempe et al.'s (1962) paper on the 'battered child' syndrome, there was little public awareness of either the seriousness or the frequency of major physical abuse. The lack of awareness was even greater in the field of sexual abuse until much more recently. Even today, the public lack of awareness of child neglect remains problematical (Smith & Fong, 2004). Second, especially in the case of sexual abuse, there is now much public attention devoted to it – with the development of sex offender registers; but it remains a concern that only a small minority of cases of alleged sexual abuse results in a conviction, and that social work interventions do not always recognise either the scale or severity of the issues. Third, there has been an appreciation of the widespread occurrence of sexual abuse in residential settings caring for children (Utting et al., 1997) and abuse by Catholic clergy (Murphy Report, 2009). Social/behavioural sciences are much needed to provide a basis for family policies in relation to abuse and neglect.

Rates of Abuse in the General Population

Epidemiological studies of the general population have shown that some 4 to 10 per cent of children suffer from physical abuse (see Gilbert et al., 2009; Jones, 2008). Neglect and emotional abuse have proved more difficult to measure because of a lack of well validated criteria. The limited evidence suggests that both are more common than physical abuse. It is also clear that official rates of reported physical abuse are much lower, and represent but a tip of the iceberg. The epidemiological findings have shown that child maltreatment of all kinds is common across cultures, and social and economic groups (World Health Organization, 2002). Nevertheless, the evidence from intergenerational, longitudinal and case-control studies have all shown the extent to which child abuse is associated with domestic violence and conflict between the parents (Brown et al., 1998; Brown et al., 2008; Dixon et al., 2005a & b; Rutter, 1989; Belsky & Vondra, 1989). Parents who were themselves abused when young have a much increased likelihood of abusing their own children. Kaufman and Zigler (1989) put the increase as roughly six-fold as compared with that in parents who did not themselves experience abuse as children. Their review of the evidence also indicated, however, that 70 per cent of abused parents did not abuse their children. Although there are significant intergenerational continuities, there are many opportunities to break the intergenerational cycle. As a consequence, prospective studies from pregnancy have shown that there are numerous errors when early predictions of later abuse are made (Altemeier et al., 1982 & 1984).

The research findings for sexual abuse are similar in showing a much higher rate than had been appreciated a generation ago (Glaser, 2008). About 1 in 10 adults reported having suffered sexual abuse involving actual contact and, in many cases, this involved penetrative sex. Contrary to many people's expectations, most sexual abuse occurs within the family, rather than by strangers. Even when there is abuse outside the family there is often an association with neglect within the family (Brown, 2002). Also, sexual abuse by adolescents is more

common than usually appreciated (Vizard, Monck & Misch, 1995), as is abuse of boys. There have been various attempts to use age-inappropriate, sexualized behaviour as an indication of having experienced sexual abuse (Friedrich, 1993), but it has been found to be a fallible indicator. Systematic studies of case notes of reported cases of sexual abuse have shown that false accusations by children are rare – some 2.5 per cent of cases (Oates et al., 2000). Nevertheless, as Court cases make clear, the validity of child reports has often been called in question on the grounds of suggestibility of children. In parallel, much controversy was generated over claims that adults who had not previously mentioned abuse to anyone, recovered previously-repressed memories following psychotherapy (see Loftus, Garry & Feldman, 1994). Loftus and her colleagues did much to show the falsity of such recovered memories in most instances.

The positive outcomes of this controversy were, firstly, a rich body of soundly conducted experimental studies of children's susceptibility (see Bruck, Ceci & Hembrooke, 2002; Ceci & Bruck, 1995) and, secondly, well-informed guidelines on best practice in the interviewing of children (see Poole & Lamb, 1998; Lamb, Sternberg & Esplin, 1998). The experiments consisted of various kinds of staged events that could be construed as either a misdeed or an innocent act. Comparisons were then made according to what the children reported after different types of interviewing. The findings were clear in showing that emotionally-laden suggestive interviewing was highly prone to elicit misleading, false reports.

With respect to physical abuse, what started as a simple charting of prevalence rates led to a recognition that abuse could not be considered as an isolated event; rather it commonly occurred in the context of extreme family conflict and domestic violence. With respect to sexual abuse, the compelling social science findings led to both an awareness of the validity of child reports when children were questioned using high quality interviewing, and the development of guidelines on the approaches necessary in the interviewing of children.

Psychological Development After Abuse

A range of follow-up studies have shown that the experience of physical abuse is associated with a marked increase in adverse psychosocial outcomes, but these outcomes are very varied and follow no consistent recognisable pattern (Cicchetti & Toth, 1995; Stevenson, 1999). On the whole, the outcomes were found to be worse when abuse occurred in the context of a broader range of adversities. Much the same applies to the outcomes following sexual abuse (Kendall-Tackett et al., 1993; Fergusson, Horwood & Lynskey, 1996).

However, in order to understand the causal processes better, it is crucial to understand the trajectories over time, as well shown by the detailed investigations undertaken by Brown and his colleagues (see, e.g., Brown et al., 2007a & b, and 2008). The design involved a study of pairs of sisters, one of whom was selected on the basis of a high risk of experiencing parental maltreatment, whereas the other was not. Data gathering was by means of detailed interviewing using a validated instrument for retrospective recall. Maltreatment was associated with a seven-fold increase in the risk for a chronic depression in adult life. However, it was striking that the risks were particularly great when the maltreatment was followed by a chaotic lifestyle involving highly troubled interpersonal relationships with the breaking of partnerships and making of new partnerships (often equally discordant).

Genetic or Environmental Mediation of Risk

The follow-up studies tend to assume that the risks associated with the experience of abuse are environmentally mediated. Kendler and Prescott (2006) tested this assumption by a comparison of twin pairs who differed (i.e., were discordant) with respect to the experience of sexual abuse. The findings showed a strong tendency (mostly in the range of four to six times the rate expected by chance) for the twin who experienced sexual abuse to have an increased risk for a wide

range of psychiatric and substance use disorders. The design was limited because the sample size meant that it was impractical to look at identical and fraternal twins separately. However, the findings strongly point to a robust, environmentally mediated causal effect of sexual abuse on adult mental disorders.

Jaffee et al. (2004) tackled the same question with respect to physical abuse and corporal punishment, but using multivariate twin analyses, rather than a discordant twin design (i.e., the whole sample was analysed and not just discordant pairs). Their findings showed very little genetic influence on physical maltreatment but quite a strong influence on corporal punishment. The implication was that, to a substantial extent, corporal punishment was a response to children's disruptive behaviour rather than a cause of it. By contrast, child abuse did have an environmentally mediated causal effect on antisocial behaviour. A Children of Twins (CoT) design produced similar findings on the environmental mediation of the risk effects on children of being abused (Lynch et al., 2006). The plot thickened, however, in the Jaffee et al. (2004) study, because the longitudinal data showed that a regular use of corporal punishment tended to escalate to physical abuse and that this escalation was environmentally mediated. In other words, although physical punishment first arose as a result of the children's behaviour, there was a danger that its regular use could turn into overt physical abuse, which has serious consequences for the children.

The last topic to note concerns the factors influencing the marked heterogeneity of children's responses to maltreatment. Studies of gene-environment interaction, considered in more detail in Chapter 4, showed that genetic influences on environmental susceptibility are hugely important with respect to individual differences in response to maltreatment/child abuse. In the absence of a particular gene variant, maltreatment had very little effect on the likelihood of antisocial behaviour. The same was found for a variant of a different gene with respect to the likelihood of developing a depressive disorder. The implications are discussed in Chapter 4.

The policy implications of the studies of psychological development following abuse are that abuse needs to be conceptualised as part of a wider pattern of interpersonal violence and discord, that the pathways involved in the risk for mental disorders in adult life involve multiple facets, that the risks are indeed environmentally mediated, but that children's responses to maltreatment are much influenced by particular genetic features that affect environmental responsiveness. It needs to be added that child abuse tends to constitute a recurrent or chronic high risk situation and that sound evidence on the efficacy of interventions remains rather fragmentary (see Gilbert et al., 2009a & b; MacMillan, et al., 2009; Reading et al., 2009). The last point is the most worrying. Whereas we now have good evidence on the rate of abuse and are beginning to understand the causal patterns better, there is a paucity of scientific study of the interventions that most provide the means to make interventions better. There are too few studies that use randomisation or which take selection effects seriously. They are much needed (Stevens et al., 2009).

BULLYING

Although there is a clear consensus that children who are bullied show increased symptoms of anxiety and depression (Hawker & Boulton, 2000), questions remain as to whether victimization by bullying actually causes mental health problems. The question arises because being the victim of bullying may not be an entirely random process, in view of the evidence that some children may be more likely to either evoke or reinforce bullying because of the way they behave. Thus, studies have shown that children manifesting symptoms of depression (Sourander, Helstelä, Helenius, & Piha, 2000) emotional problems (Olweus, 1993), low self-regard and poor social skills (Bond, Carlin, Thomas, Rubin, & Patton, 2001) show an increased risk of becoming victims of bullying. This suggests that emotional and behavioural problems in young victims of bullying could just be the continuation of problems that existed prior to victimization. In order to determine

whether bullying truly causes mental health problems, it is necessary to take into account pre-existing emotional and behavioural difficulties. This was examined in Arseneault's research as part of the Environmental Risk Study, a nationally representative 1994-95 birth cohort of 1,116 families with twins, initially set up by Terrie Moffitt and Avshalom Caspi. The first focus was on children who had been bullied between the ages of 5 and 7 years. There was a total of 17.3 per cent who had been bullied by the age of 7 years, of whom 4.2 per cent of the total sample was frequently bullied (i.e., a quarter of those experiencing bullying). Examples of bullying victimization included instances in which the mother reported that her child was being excluded from groups and games, or cases in which a child was called names because she did not have a father. Other cases involved children being smacked across the face every day for a month, children being stabbed with a pencil and children being beaten up (Arseneault et al., 2006). The first finding, reflected also in other research, was that bullying others and being bullied oneself often co-occurred in the same children. This overlap group may be termed bully/victims. The second finding was that both victims and bully/victims manifested a range of emotional and behavioural problems between the ages of 5 and 7 years. The evidence with respect to such problems at age 7 showed that these were apparent over and above pre-existing problems at the age 5 years. In other words, children's previous problems could not be blamed for all of the emotional and behavioural difficulties experienced later. Being bullied oneself was a significant contributor to emotional and behavioural problems.

A second study on the same sample tackled the question of whether genetic vulnerabilities constituted the underlying liability. This was tackled by examining 573 pairs of monozygotic (identical) twins pairs in which one twin had been the victim of bullying and the other had not (Arseneault et al., 2008). The findings showed that the twin who had been bullied showed more symptoms of emotional disturbance as compared with their co-twin who had not been bullied. This difference remained significant even after controlling for symptoms assessed at an earlier age. These findings offer strong support

for a causal effect of being bullied on children's emotional disturbance.

Nevertheless, not all children who are bullied experience emotional disturbance. In the third study, the same sample was used to examine the possible protective role of family influences in reducing the negative outcomes associated with the experience of bullying (Bowes et al., 2009). The findings showed that having a warm, caring mother, having a warm sibling relationship and growing up in a positive atmosphere at home, were all associated with a decreased likelihood of developing emotional disturbance, even after controlling for earlier difficulties. That is, resilience in victims of bullying tended to be influenced by a supportive family environment.

Because much bullying is associated with school, interventions to prevent bullying should include programmes in schools. A pioneer in this regard was Dan Olweus who established a nationwide programme in Norway, using changes over time as a way of gaining leverage on the effectiveness of the programme. The intervention involved both attitude change (to emphasise that the bullying was always unacceptable) and behavioural change (actions on responding to evidence of bullying) in order to reduce bullying (Olweus, 2005). The findings showed significant benefits from this large-scale intervention. Studies in the UK have broadly confirmed what Olweus found (see Smith et al., 2003).

In this case, social/behavioural science was instrumental in showing that the generally held view that bullying should be regarded as a stressful life event that could adversely effect children's normal development, was correct. What is important is that it used rigorous research designs and methods of data analysis to test this proposition thoroughly. The social science evidence also helped the development of effective interventions, not all of which were common sense before the evidence was available. The findings highlight the importance of enquiring about bullying in all young children during the course of medical check-ups at school. It is important to identify the children suffering in this way in order to take appropriate action. Health and education professionals would benefit from enhanced training on the assessment of bullying and on interventions both to prevent it and to

deal with its ill-effects. Intervention programmes aimed at controlling bullying in schools or in the community need to offer support and social training for the victims, and to target bully/victims for intensive multi-component interventions. Their early identification may be particularly important because they showed the most maladaptive patterns of behaviour early in schooling. The resilience study showed that a supportive family environment can do much to promote children's resilience in the face of bullying and the Olweus school intervention showed what needed to be done at a school-wide level to deter bullying.

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7 INSTITUTIONAL DEPRIVATION

In parallel with the marked drop in the number of healthy infants available for adoption in industrial countries, there has been a large rise world-wide in the number of intercountry adoptions (Selman, 2009). These are important for family policies for several different reasons but in this chapter we focus only on children adopted following gross institutional deprivation. In the UK, this topic first gave rise to major public concern following the extensive media coverage of the appalling conditions in Romanian institutions as revealed following the fall of the Ceauşescu regime in 1989. Although adoptions from Romania have virtually stopped, adoption of children from institutions in Russia and China (and other countries) has risen and, although institutional conditions tend to be not as bad as in Romania, they involve similar concerns regarding the effects of institutional rearing. The challenges for parents and for their adopted children have inevitable policy implications. There is also the unresolved issue of the extent to which findings can be generalised to situations within families involving abuse and neglect. Finally, the 'natural experiment' of a move from a depriving institution to well functioning adoptive families allows a study of the recovery and persisting deficits associated with the change of rearing circumstances.

When the Department of Health realised in 1991 that a substantial number of children reared in institutions were exposed to extreme deprivation, they funded a longitudinal study to find out how the children fared following adoption and what challenges the families faced. At that time, no-one knew what would happen, although opinions were being widely expressed by practitioners and policy-makers. Some expected rapid recovery whereas others anticipated that the parents would soon give up and return the children to the institutions from which they came or place the children in UK public care of some sort. Neither expectation was borne out. Others opposed inter-country adoption on the grounds that it provided cultural

discontinuity and, in any case, could not possibly serve to alleviate the widespread problem of children being reared in institutions. Clearly, as the Department of Health recognised, good social science was needed to find out what really happened.

At that time, the 'given wisdom' among researchers and practitioners was that both acute stresses and chronic adversities had ill-effects on children, but they were diagnostically non-specific. That is to say, they led in many instances to both emotional difficulties and behavioural disturbances of a type that was common in the general population, as well as in clinic samples. It had generally been assumed that the effects of institutional rearing would show the same non-specific pattern without unusual features specific to institutional deprivation. The problem with most previous research into institutional rearing, however, is that because the children were admitted to institutions at varying ages, and because the influences on whether or not they remained in the institution were uncertain, the possibility remained that many of the associations might reflect problems and handicaps in the children that led to institutional admission, rather than the effects of institutional rearing following admission.

The circumstances following the fall of the Ceauşescu regime in Romania provided a quite unusual opportunity to undertake the key tests because so many of the features made it a true 'natural experiment'. That is, almost all of the children were either born in an institution or were admitted to an institution in infancy, thereby avoiding the problem of admission as a result of identifiable child handicaps. Second, up to the time of the fall of the Ceauşescu regime, scarcely any of the children were either returned to their biological families or adopted. Third, the adoption of children from institutions constituted an easily timed, abrupt transition with an extreme discontinuity between the profound deprivation in the institution and the generally good quality of rearing provided by the adoptive families. Longitudinal studies of such adopted children also provided the opportunity of studying within-individual change over time, and not just between-group comparisons. The findings have been striking in several key respects (Rutter et al., 2009; Rutter, Sonuga-Barke & the ERA Study Team, in press).

First, there was remarkable catch-up in development shown during the first two years or so following adoption into the UK. This contrasted sharply with the evidence from other multiple studies that children who remained in institutions continued to show severe problems (Rutter & Azis-Clauson, in press). Various methodological checks were required, but the findings clearly showed that the initial deficits were indeed a function of the institutional care that involved severe psychosocial deprivation. Second, however, nearly one half of the children showed persisting deficits of some kind following adoption. These were not evident for those who left institutional care before they reached the age of 6 months, but were evident in the group whose institutional care persisted beyond this age. Some of the children had been adopted for mainly altruistic reasons (following TV programmes showing the plight of the children in the institutions etc), and others as a result of wanting to adopt a child for reasons associated with infertility. It was important to check that this difference in the reasons for adoption did not account for the outcome variations; but it did not. Third, because many, but not all, of the children were severely subnourished, as well as psychosocially deprived, it was necessary to check whether the persisting deficits were a function of the subnutrition rather than other aspects of the deprivation. Rather against expectation, it was found that the role of subnutrition was far less than the role of persisting institutional deprivation. Moreover, even in the absence of subnutrition (as indexed by body weight at entry to the UK) institutional deprivation was associated with a massive reduction in head growth. Other data indicated that this was a reliable function of brain size. In other words, psychosocial deprivation had major effects on brain development if it lasted beyond the age of 6 months. We return to this finding below.

Fourth, contrary to everyone's expectations, there were few effects of institutional deprivation on common emotional and behavioural disturbances. Rather, the deficits involved some apparently deprivation-specific patterns such as quasi-autistic features and disinhibited attachment problems (including an apparent lack of a strong attachment relationship and an impaired differentiation in response to

familiar adults and to strangers). Fifth, these unusual features were associated with institutional deprivation as strongly at age 15 as it had been at 11, 6 and 4 years of age. Moreover, the patterns themselves showed a remarkably high degree of persistence over this long time span accompanied by many changes (such as starting school and reaching puberty). The variation in these specific problems was found not to be associated with differences among the adoptive families. Obviously, the move to a generally well functioning, adoptive family had been responsible for the initial gains, but the variations in outcome thereafter were not associated with the variations in the adoptive families. Another study claimed that outcomes were associated with variations in the adoptive family environment (Maclean, 2003; Morison, Ames & Chisholm, 1995; Morison & Elwood, 2000). However, these were based on a cross-sectional measure obtained when the children were followed up. As a consequence, it was impossible to determine whether the adoptive family features were a cause or consequence of the children's behaviour. Of course, it is important to note that although the adoptive families did indeed vary, they included a very small proportion who might be regarded as constituting an appreciable, environmental risk. In general, as in other studies, parents who adopted provided good care. Finally, although the patterns associated with institutional deprivation were so surprisingly specific, there was nevertheless considerable heterogeneity in outcome. Among the young people who remained longest in the institutions, there were still some who functioned very well up to the time of the most recent follow-up at 15 years of age. Overall, institutional deprivation extending beyond the age of 6 months was associated with a high rate of difficulties. However, there were important exceptions (the causes of which have yet to be identified) and, moreover, those with deficits improved, sometimes markedly, in their functioning as they grew older.

One other finding from this study was that institutional deprivation was associated with a significant effect on the timing of puberty (institutional deprivation leading to an earlier puberty). The importance of this was that early puberty tends to lead to a restriction in ultimate physical growth. Although it was not possible to test this adequately

within the study (because of limited statistical power) it seemed likely that this was operating. This meant that although there had been an earlier catch-up in physical growth (as indexed by height and weight), the deceleration of physical growth in adolescence indicated that the ultimate height was likely to be impaired to some extent.

Cross-sectional studies had led to claims that the cognitive catch-up associated with adoption following institutional care, was accompanied by a relative lag in the improvement in scholastic attainments. The availability of longitudinal data in the ERA study meant that this possibility could be investigated more satisfactorily by means of an examination of within-individual change. The findings showed that there was an effect of institutional deprivation on all cognitive functions, including scholastic attainment, but these applied more or less equally across the range. There was no evidence that scholastic attainment was specifically affected adversely.

There are several important policy implications that derive from these findings. First, it was evident that the move from a profoundly depriving institutional environment to adoptive families was associated with major developmental gains. Second, the gains following adoption went on for at least two years and often longer than that. That is an important finding because, at the time the study was started, the general expectation was that if there were to be gains, they would occur pretty swiftly or not at all. It turned out that that was not true. Significant changes in the most impaired young people were still occurring between 11 and 15 years. Third, there were important biological effects of psychosocial deprivation. Thus, after some 6 months of deprivation, there were huge impairments in head circumference and, by implication, therefore, brain growth. Moreover, these were not a function of subnutrition, as might have been expected. Fourth, the rate of adverse consequences associated with institutional deprivation increased markedly after the age of 6 months, affecting up to nearly half of the population by the end of the first year of life. This meant that services need to take on board the relatively high frequency of these persisting deficits and should provide post-adoption services accordingly.

Fifth, these adverse effects almost entirely concerned very unusual behavioural patterns and not the usual run of emotional and behavioural disturbances. Both prospective adoptive parents and professionals, therefore, need to be aware of the problems that these will bring. Sixth, a major challenge remains in finding out how best to foster normal development in young people with these unusual but important repercussions. Finally, one very important finding was that the very high degree of persistence of these adverse consequences was, nevertheless, coupled with substantial successes in many individuals. It might have been thought that high persistence and a high continuing association with institutional deprivation would mean that all is lost. The findings were encouraging in that this was definitely not the case. What remains uncertain is what the qualities are, either in the young person or in the families, that make these successes more likely. The findings overturned many of the usual expectations but, as is often the case, they raise new research challenges.

The findings showed that many of the assumptions in the world at large, at the time the study started, proved to be ill-founded. Nevertheless, numerous questions remain on the extent to which the findings can be generalised to other populations. Thus, it is not known to what extent the findings can be extended to abused and neglected children in family settings (see Chapter 6), or to children reared in institutions that were not providing global, pervasive deprivation in the manner of that found in Romania. Comparative studies are obviously now much needed. As is often the case, research solves some questions but in so doing opens up new ones. A focus on extreme groups, as in the case of institutional deprivation, is often helpful in identifying key issues, but it is always necessary to go on to determine the extent to which findings apply more generally. That is particularly the case, perhaps, when considering implications for family policies.

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8 DRUG EFFECTS ON PSYCHOSOCIAL OUTCOMES

The use and abuse of substances (both illicit and medically prescribed) raises many issues well beyond the scope of this report. So far as alcohol is concerned, the issues are well presented in a report from the Academy of Medical Sciences (2004) and those concerned with illicit substances in a more recent Academy of Medical Sciences working party report (2007b). Here we focus only on cannabis because the ways in which this is dealt with in families impinges on family policies; and because the risks for adult psychosis raise the important policy issue of the contrast between fairly low risks in the total population but a substantially higher risk in particularly vulnerable individuals using cannabis on a regular basis from childhood or adolescence. The topic also illustrates the various ways in which science can help to resolve key issues. The second major topic in this chapter concerns the effects on the baby in the womb of substances used by the mother during the pregnancy. As the policy implications of prenatal and postnatal effects are rather different, the contrasting of their effects constituted a key scientific focus.

EARLY PRECURSORS OF PSYCHOSIS

For many years, schizophrenia was viewed as an adult psychosis. The implication was that any interventions – preventive or therapeutic - would need to focus on the adult life period. Findings from large scale general population epidemiological/longitudinal studies were instrumental in changing that concept through their demonstration that early delays or impairments, in both language and motor function, significantly differentiated individuals who would later develop schizophrenia from those who later developed other forms of mental disorder (see, e.g., Isohanni et al., 2000, 2001 & 2004). The origins

were not only before adult life but they were apparent in early childhood (Cannon et al., 2002). The role of neurodevelopmental impairments was also shown by exactly the same pattern of findings with respect to lower levels of intelligence throughout the childhood years. Because the findings, although robust and reasonably strong at a group level, were non-specific and not strong enough to be of value at the individual level, it was difficult to know how to make use of the evidence. In other words, the evidence clearly indicated that although developmental impairments constituted an important precursor of adult psychosis, the pattern of impairments was not sufficiently distinctive to enable anyone to know which individuals would actually go on to develop a psychosis. That situation was transformed by findings, initially from the Dunedin longitudinal study (Poulton et al., 2000) and later from other longitudinal studies (see van Os et al., 2009) that psychotic-like features at age 11 were relatively common in the general population and that they proved to be precursors of the later development of schizophrenic spectrum disorders. The initial role of social/behavioural science had been to develop appropriate measures for precursors and to determine whether there was a meaningful developmental course.

This led on to a focus on so-called prodromata of schizophrenia (meaning early manifestations before the onset of overt psychosis) in late adolescence and early adult life. The notion, once again, was that there were early manifestations of schizophrenia that preceded overt psychosis and, moreover, that these might benefit from early interventions (Rutter, Maughan, & Kim-Cohen, 2006). The term prodromal schizophrenia would seem to imply that there is an inevitable progression later on to overt schizophrenia. However, the empirical evidence showed that some individuals with these features do not go on to develop schizophrenia. That raises the query as to what makes the difference between those who do and those who do not.

One possibility was that the use of cannabis might constitute a key factor that could push vulnerable individuals over into overt psychosis. The Dunedin longitudinal study findings were important in showing that adolescents who regularly used cannabis before the age of 15 had

a substantially increased risk of schizophrenia compared with non-users (Arseneault et al., 2002). Among individuals who used cannabis before age 15, 10 per cent had a schizophreniform disorder by age 26 compared with 3 per cent of the remaining cohort. Several methodological steps were needed to check whether this statistically significant association might mean a causal effect. It was crucial to determine whether the young people had any psychotic symptoms that pre-dated their cannabis use. As already discussed, the Dunedin study included the relevant measures to enable this to be checked. The findings showed that the schizophrenia outcomes among young adolescent cannabis users were not limited to those who had psychotic symptoms before smoking cannabis. Prior childhood psychotic symptoms explained some of this risk but not all of it. The evidence showed that the risk did not apply at all to those who started using cannabis in adult life and it mainly applied to heavy users of cannabis in adolescence and not to those who indulged in occasional, experimental recreational use. The evidence also showed that the schizophreniform risk was limited to cannabis and did not apply to the use of amphetamines, hallucinogens or other drugs including alcohol and tobacco. As always in science, it was crucial to determine whether similar findings applied in other large population studies and the evidence showed that it did (Zammit et al., 2002; van Os et al., 2002; Fergusson et al., 2003; Henquet et al., 2005; for a review see Arseneault et al., 2004).

Although these epidemiological/longitudinal findings appeared robust, it was evident that cannabis use, even in early adolescence, did not usually lead to psychosis. Thus, 90 per cent of early cannabis users did not develop a schizophreniform disorder. The evidence on gene-environment interaction (see Chapter 4 on Resilience) suggested that there might be a genetic vulnerability to the adverse effects of early cannabis use. Attention turned to the possible role of the gene COMT, which helps to control the brain's neurotransmitter dopamine. This gene comes in two versions - 'valine' or 'methionine'. The findings showed that it was the valine version that conferred vulnerability to cannabis (Caspi et al., 2005). Of those individuals with the valine

genotype who used cannabis in adolescence, the rate of schizophreniform disorder was 15 per cent (as compared with a base rate of 3 per cent). Clearly, this constitutes a substantial increase in relative risk but, even so, schizophreniform disorders developed only in a minority. In addition, attention needs to be paid to the 'dose' of cannabis. A recent case-control study indicated the likely importance of this consideration. During recent years, cannabis has been increasingly taken in the form of sinsemilla ('skunk') – a high potency product. Di Forti et al. (2009) found that the risk of psychosis was substantially greater with 'skunk' than with the traditional cannabis resin ('hash'). From a policy perspective, findings highlight the need to take on board the very low risk associated with cannabis use in the general population (and especially the negligible risk associated with its occasional recreational use in adult life) and the substantially higher risk associated with very early use of cannabis in those who are genetically at risk. This does not easily translate into a single risk figure for cannabis, and policy-makers will need to decide whether to act on the basis of the relatively important risk for schizophrenia spectrum disorders in very young users at genetic risk, or the negligible risk in the general population. It might be added that most of the focus has been on the risk for schizophrenia and policy-makers will also need to consider the apparent risks for milder, but still important, psychosocial impairments associated with heavy use of cannabis when young. There is no simple, straightforward way of translating the findings into a meaningful single figure that applies equally to all. The controversies over the classification of cannabis (see Chapter 1) have failed to pay proper attention to this difference.

The policy implications must also take into account two other features. First, for a long time there has been concern that cannabis use might serve as a 'gateway' to the use of more dangerous 'hard' drugs (Rutter, 2007). Natural experiments have indicated that there is such a gateway effect. Lynskey et al. (2003) and Lynskey, Vink & Boomsma (2006) using the Australian Twin Register and then the Netherlands Twin Register found that the twin with early cannabis use had a two to four-fold increase in the use of other drugs, as compared with the

co-twin without such early use. The mechanisms involved remain quite unclear. Lee Robins' studies of Americans in the armed forces who used heroin whilst serving in Vietnam, made clear that there is no necessary progression from cannabis to heroin. Rather, the ordering in which drugs were used reflected their availability rather than their 'hardness' (Robins, 1993). Perhaps, the gateway effect reflected young people's introduction into a drug-taking culture, or exposure to drug pushers. There are several possibilities and none has been adequately investigated. Nevertheless, whatever the underlying mechanisms, the implication is that the gateway effect means that cannabis should be viewed as a more risky drug than it might seem on the basis of its own individual pharmacological effects. The second consideration is that the illegality of cannabis has meant that it has been part of the focus of drug pushers and, as result of that, with the violent clashes between drug-pushing gangs. This consideration would seem to suggest that there might be advantages with the decriminalisation of cannabis.

The point of these discussions is to underline the several uncertainties involved in moving from the scientific evidence to the policy implications. Scientists, as well as policy-makers, need to recognise this. One might ask why should there be a focus on cannabis in a report on family policy. The answer, of course, is that families do have a role in supervising (or failing to supervise) young people's cannabis use. The scientific evidence suggests three main points: first, there is value in delaying the use of cannabis until adult life; second, young people need to be encouraged to restrict the taking of cannabis to occasional recreational use instead of regular heavy use; and third, young people need to be aware of the probably greater risks associated with high potency 'skunk'.

RISKS FROM PRENATAL DRUG USE

Substance use by women during pregnancy is an emotionally charged topic, with important policy implications. Social/behavioural science has begun to identify the circumstances associated with such use, and

the magnitude of their effects on the foetus, as well as the underlying causal mechanisms that account for developmental difficulties seen in the children as they grow up. A key challenge for the science is that drug use during pregnancy frequently, but probably usually, occurs within a context of other significant risks to children (Haack, 1997).

Substance use during pregnancy (including tobacco and alcohol) tends to be strongly associated with the use of similar substances after the child has been born. What that means is that, very frequently, the use of drugs before birth is accompanied by a wide range of other psychosocial risks involved with parenting and with family functioning more generally (Heath, Lynskey & Waldron, 2008). Finally, numerous epidemiological studies have shown that the usual pattern is for people to take a complicated mix of substances and not just one drug.

In many ways, the major concerns surrounding the possible risks associated with prenatal use of substances began with the observation that high levels of maternal alcohol consumption, in the early stages of pregnancy, were associated with particular types of minor congenital anomalies (Jones et al., 1973). Work since then has clearly shown that large quantities of alcohol consumption by pregnant women can lead, not just to congenital anomalies, but also to serious physical, mental, and psychological problems in offspring – what has come to be called 'the foetal alcohol syndrome' or spectrum (Abel, 1998). Researchers have made progress in identifying the biological mechanisms that account for these problems (Riley & McGee, 2005). There is less understanding, however, of the implications of low-to-moderate alcohol use because of the difficulties in accurately measuring alcohol consumption and in differentiating the effects of prenatal alcohol exposure from the effects of co-occurring risks (Gray, Mukherjee, & Rutter, 2009). In addition, uncertainty remains on whether the main risk effect comes from average levels of alcohol consumption during the pregnancy, or from peak levels during episodes of binge drinking. Similar uncertainties come with respect to the extent of the limitation of risks to the first trimester. Nevertheless, a recent study that compared siblings who were differentially exposed to maternal alcohol use during pregnancy, suggested that maternal alcohol consumption

was, indeed, associated with increased antisocial behaviour during childhood (D'Onofrio et al., 2007), but additional research using multiple methods is needed.

Attention then switched to whether maternal cigarette smoking during pregnancy might also be associated with pregnancy-related risks in terms of preterm birth, low birthweight, and infantile mortality; as well as with later cognitive impairment and antisocial problems. Research using multiple designs (such as epidemiological samples with extensive measurement, intervention studies, animal studies, and quasi-experimental approaches) all indicated that there were increased risks of pregnancy-related problems that were specifically attributable to maternal smoking during pregnancy (Johansson, Dickman, Kramer, & Cnattingius, 2009; Knopik, 2009). It seemed reasonable, at first sight, to assume that if there were indisputable risks to the pregnancy outcome (and the evidence was solid that there were) there might also be risks extending to behavioural and cognitive problems postnatally. Several epidemiological studies have claimed that there are such risks, arguing that their methods of statistical analysis controlled for relevant possible confounding variables (see discussion in Thapar & Rutter, 2009; Rice et al., 2009). The problem, however, is that, as the Academy of Medical Sciences Report (2007a) demonstrated, it is, in practice, quite difficult to be sure that the relevant confounders have been identified and satisfactorily measured. That is where natural experiments come into their own. A variety of different natural experiments have employed various strategies – such as comparing siblings who have been exposed to maternal smoking during pregnancy with those who have not (Gilman, Gardner & Buka, 2008; Lambe et al., 2006; Obel et al., submitted); comparing offspring born through assisted reproductive technologies using the mother's ovum with those that did not involve a genetic link with the mother (Rice et al., 2009; Thapar & Rutter, 2009) and children of twin designs (D'Onofrio et al., 2008). It should be noted, incidentally, that all these natural experiments, whilst casting doubt on the prenatal smoking effects on later behavioural development, have confirmed the importance of maternal smoking effects on low birthweight and premature birth. The evidence now

strongly suggests, however, that the earlier claims about causal effects on antisocial behaviour generally and on ADHD specifically were misleading.

There is a general awareness that babies born to mothers who were addicted to heroin are likely to be born suffering themselves from heroin dependency and, therefore, suffering from the withdrawal symptoms after birth. However, these problems are ordinarily short-lived and the controversies have focused on the possible long-term sequelae resulting from adverse effects during the pregnancy. The main concerns have actually been expressed in relation to women taking crack cocaine. Several studies have indicated that children exposed to cocaine during foetal development are at greater risk for a range of attentional, intellectual, and behavioural problems as they grow up. The problem has been in sorting out the extent to which the risks arise specifically from cocaine, or rather from a mixture of other drugs that may have been taken and also from the postnatal effects often associated with family dysfunction in drug-dependent mothers. Some research has suggested that cocaine exposure has a small direct influence and it has been suggested that, although these are small, they do have important societal implications (Lester, LaGasse, & Seifer, 1998). On the other hand, a meta-analysis of multiple studies has suggested that the problems associated with maternal cocaine use during pregnancy, are mainly due to concurrent exposure to other substances such as alcohol and cigarettes, and to other family risks (Frank, et al., 2001). In this case, science has not yet come up with a definitive answer, but what it has done is to alert people to the difficulties of identifying and quantifying prenatal risk related to a particular substance, when multiple substance usage is usual and when postnatal adversities are also common. The research has also reminded people that risks need to be assessed in the same way with respect to medically prescribed drugs, as well as illicit substances. Thus, maternal depression has been postulated as possibly causing a risk to the foetus through stress effects and the question, therefore, is whether the use of antidepressant medication to treat the mother during the pregnancy increases or decreases the risk. Scientific findings indicate that, either

way, the risks are likely to be quite small but, unfortunately, the findings are not yet at the stage at which firm recommendations can be made. In the meanwhile, what is clear is that heavy alcohol use in the early months of pregnancy and regular smoking during pregnancy, both cause significant risks to the foetus and that these are well documented through multiple research strategies. The effects of prenatal exposure to alcohol seem to be quite long-lasting in some instances, whereas there are rather more doubts about the postnatal consequences associated with maternal smoking during the pregnancy. The findings underline that public health issues are important, but of also how difficult it is to nail down the key causal mechanisms when the risks arise from multiple substances and through multiple, biological routes.

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9 COMMUNITIES AND SOCIAL GROUPS

The British Court Committee (1976) highlighted the fact that the policies of almost all government departments had implications for the development of children. Thus, this obviously applied to legislation on schooling and housing, criminal and civil law, health services, welfare benefits, social services and employment. Government was urged, therefore, to ensure better working across departments and to appoint a minister for children whose responsibilities would include taking children's needs seriously in relation to all government initiatives. These recommendations were not implemented at the time but the concepts put forward then have subsequently been increasingly accepted. At about the same time, the eminent social scientist Urie Bronfenbrenner (1979) was pointing out that individuals functioned in families, which in turn were part of broader societal groupings, with each of these levels influencing the others. This ecological perspective has become mainstream social science. It has also had an influence on statistical developments as exemplified in multilevel modelling (which simply means that analyses need to take account of 'nesting' in the populations being studied (Goldstein, 2003). For example, in studying school effectiveness, it is statistically necessary to take account of the fact that each child is nested (i.e., is part of) a classroom, and that each classroom is nested within a school department, and each department is nested in the whole school).

This report, in its focus on family policies, needs therefore to recognise that families are part of society and that there will be a two-way influence between the two. There is not space here to review a very broad literature but we include this chapter as a reminder of some of the key scientific considerations.

COMMUNITY INFLUENCES

Since the early part of the twentieth century, numerous studies have shown marked area differences in rates of crime and mental disorder (Reiss, 1995). A causal effect has usually been presumed, but it has only rarely been tested. Many questions remain unanswered, but findings from social/behavioural sciences have taken the understanding forward in an important way.

One of the key questions concerns the possible effects of in- and out-migration. Thus, for example, the comparative study between inner London and the Isle of Wight (using the same measures and the same team of investigators) showed much higher rates of psychopathology and of reading difficulties in inner London. Rutter, Quinton and their colleagues (Rutter et al., 1975a & b; Berger et al., 1975) examined possible effects of migration by concentrating on individuals born and bred in each of the two areas. As expected, there were selective factors associated with both in- and out-migration, but very substantial area differences remained even after these had been taken into account (Rutter & Quinton, 1977). It seemed likely, therefore, that the causal effect involved some aspect of living conditions.

Perhaps, rather surprisingly, the findings also showed that the main difference between the two areas lay in the rates of problems in younger children rather than in adolescents. Putting the findings together, the results suggested that the main influence came via the family (that was because family problems were much more frequent in the inner London area) rather than directly on the young people themselves. Of course that does not mean that there may not also be influences that impinge more directly on adolescents, but the evidence did suggest that influences on younger children tended to come via the family.

Osborn (1980) examined the apparently risky effects of living in inner London in a different way, by focusing on a sample of boys in inner London who had moved their home. The comparison was made between those who moved within inner London and those who

moved from inner London to some other geographical location. This comparison, thereby, controlled for the effects of moving per se. Because the analyses were based on longitudinal data, it was also possible to determine whether the effects were expectable in terms of the young people's prior antisocial behaviour. The results showed that, taking all of that fully into account, the move out of London was associated with a significant drop in antisocial activities. What the data could not show, however, was whether this was a function of opportunities for committing crimes or of a liability to engage in antisocial behaviour.

The early writings on area effects tended to assume that causal influences concerned aspects of the area that **fostered** either mental disorder or crime. A very careful study in Chicago (Sampson et al., 1997) showed that probably the influences tended to work via a lack of protection rather than a positively toxic environment. That is, the differences were largely explicable in terms of a lack of social organisation or collective efficacy – meaning that people living in high crime areas failed to take responsibility for other people and failed to provide social support. A similar finding was evident in the environmental risk study that has already been discussed. Odgers and her colleagues (2009), drawing on a birth register of twins, used interviews with children at home at ages 5, 7, and 10, together with comparable information from mothers and teachers. The study controlled statistically for parental conflict and other family factors that directly contributed to children's misbehaviour in poor neighbourhoods. One or more adults living in the same block, or in the same apartment building as the children in the study, completed questionnaires when the young people reached the age of 8 or 9 years. The responses allowed the investigators to calculate the level of collective efficacy in different neighbourhoods. The findings showed that collective efficacy was evident in some disadvantaged communities, but not in others. Collective efficacy was more common in affluent neighbourhoods than in disadvantaged ones, but such collective efficacy had its main effect in deprived neighbourhoods. Presumably, this was because the community risks were so much

higher there. Broadly speaking, although the design was a somewhat different one, the findings were closely in line with Sampson et al.'s (1997) Chicago study. The implication is that family influences operate at a community level (through effects on collective efficacy) as well as in the home, and that a sense of community responsibility and a willingness to exercise it matters for child development.

Progress has been made on several fronts over the last few decades. First, there have been advances in the measurement of neighbourhood structures (see Land, McCall & Cohen, 1990; Morenoff & Sampson, 2007) as reflected in population structure, resource deprivation or affluence, residential stability, and immigration/ethnicity. Second, there has been progress in the assessment of family influences on neighbourhood characteristics as reflected in systematic social observations of areas, as well as in measures of what people do to foster social cohesion and collective efficacy (Morenoff & Sampson, 2007). Third, there have been studies of the processes that operate over time to create socially disorganised neighbourhoods (Schuerman & Kobrin, 1986; Skogan, 1990) with a rapid 'tipping' effect after a trajectory of increasing social disorganisation (Bottoms & Wiles, 1997; Power, 1997) with implications for the children living in these areas (Power, 2007). Unfortunately, there has been much less progress in translating these advances in understanding community influences into planned interventions. We can see that having a strong sense of community matters but it is not obvious how to bring it about or change it.

However, there has been a randomised controlled trial of the effects of moving from a high to a low poverty neighbourhood – the Move to Opportunity (MTO) programme (Leventhal & Brooks-Gunn, 2004). The experimental group were given vouchers to move, whereas control families were not given the option of moving. Positive effects on adolescent boys' scholastic achievements were found two years later. Caution is needed because a later follow-up failed to show programme benefits – possibly because of a loss of participants from the control group (Leventhal, Fauth & Brooks-Gunn, 2005).

ETHNICITY

Attention to ethnic variations constitutes a politically sensitive topic but social scientists have shown both the necessity of considering ethnicity in relation to family issues and also the possibility of undertaking such research sensitively and incisively. Thus, Wilson (1987) produced evidence suggesting that many of the supposed adverse consequences of being African-American in a predominantly white society, stemmed from low socioeconomic status rather than ethnicity as such. He noted both the continuing disadvantage for the underprivileged of living in the ghettoes (which applied to a far higher proportion of African-Americans than white people), as well as the substantial expansion over time of an African-American middle class. The book edited by Rutter & Tienda (2005) also provided many examples of how within- and between-ethnic differences can be used to study causal mechanisms. Gladwell (2008) also gave examples of how the study of different ethnic groups can be informative in the processes leading to economic success. The topic of ethnicity warrants a full review because it impinges on all aspects of family policies but we have space only to note the main issues and findings. First, in both the UK and the US (the two countries that have been most studied), there is huge heterogeneity among ethnic groups. Thus, in both countries, those of Asian origin tend to have educational attainments well above average, and those of African origin attainments below average (Maughan, 2005; Hirschman & Lee, 2005; Modood et al., 1997). Second, for the most part, major risk factors (such as abuse, neglect and severe social disadvantages) operate similarly in all groups. On the other hand, when there are major ethnic variations in supposed risk factors, such as lone parenthood, the risk effects on child outcomes do not always follow the expected pattern (see Maughan, 2005; Morenoff, 2005; Smith, 2005a; Hirschman & Lee, 2005). For example, in the US, there is a low rate of suicide in African-Americans and Hispanics compared with Whites, despite their relatively high rate of risk factors. Third, racial discrimination remains a major concern in many countries (see succinct review in Smith, 2005b). Nevertheless,

ethnic variations in the experience of discrimination do not closely mirror outcome variations (e.g., in crime rates). Thus, in the UK racial discrimination impinges to a roughly equal extent in Asians and African-Caribbeans (see Smith, 2005b) but their crime rates are different. Fourth, as Wilson (1987) pointed out, there is huge heterogeneity in most ethnic groups. The main policy message is that it would be a mistake to conclude that ethnicity as such explains variations in disadvantageous child outcomes. Ethnicity is a multi-faceted concept (see Rutter & Tienda, 2005) and its associations involve a complex mixture of mechanisms.

SCHOOLING

Schools must also be considered because of their demonstrated effect on pupils' progress, because of their possible role in neighbourhood differences and because parents play some role in school selection. First, in so far as children are concerned, it is possible that differences that seem to be associated with where children live may actually, at least in part, be a function of the schools that they attend (because the two are obviously associated). A range of different studies have examined school effects through a combination of longitudinal data and detailed measures of aspects of school functioning (Rutter et al., 1979; Rutter & Maughan, 2002). In all cases, it has been necessary to take into account variations in the intake of pupils to schools (in terms of their own behaviour and their family background). The results have been consistent in showing that variations in school outcome are systematically associated with variations in school quality of an identifiable kind that can be quantified. Also, the findings showed that these differences applied more to variations at the end of schooling than they did at the beginning. If the variations were primarily a function of variations of intake to schools, the reverse pattern would have been expected. The overall findings indicate that there are significant school effects, albeit of a modest degree over and above the effects of family, and over the area in which young people live. School

variations are associated in part with the overall mix of pupils within the school, and with the social qualities of the school (in terms of the extent to which children are given responsibility and treated positively) and aspects of academic focus. The implications for family policy are, primarily, that when considering the effects of any social group it is crucial to examine the characteristics of the individuals in the group (i.e., the important issue of social selection). But, also, the findings are a reminder that when considering children, it is necessary to consider the complex interplay among housing policies, educational policies, and family policies. In addition, however, the school findings on the nature of the positive influences associated with effective schooling are ones likely to apply equally within families.

GANG INFLUENCES

Another possible social group influence concerns the effect on antisocial behaviour, especially violent crime, of being a member of a criminal gang. Obviously, it is highly likely that there will be selection effects (i.e., those with antisocial propensities are more likely to join criminal gangs), and influences from being part of a delinquent peer group. Longitudinal data are essential in sorting out which is which (see e.g., Thornberry, 1993; Thornberry et al., 2003). What the findings showed is that both selection and peer group effects were substantial. That is, taking into account behaviour prior to joining a gang, there was an increase in criminal activities during gang membership that declines after individuals leave the gang. On the other hand, the effects of individuals' own behaviour before joining the gang were also strong. What this means is that highly delinquent youths were more likely to join antisocial gangs, but there was an escalation in new delinquent activities while they remained in the gang. Other research using different research strategies (e.g., Nagin et al., 2008) produced similar findings – see also Dodge, Dishion & Langford (2006) for a fuller discussion of deviant peer influences.

CONCLUSION

Social/behavioural sciences have shown that there are many different aspects of community influences that may well be playing a part in predisposing either to mental disorder (such as depression) or to criminal and other forms of antisocial behaviour. Some of these are concerned with a lack of protection and surveillance, and some with more directly negative influences (e.g., the delinquency-potentiating effect of membership in an antisocial gang). Others focus on protective influences and the way in which community efficacy can reduce risk. The basic message, however, is that family influences are important not just in terms of how they operate within the home, but also in terms of how they operate within the community. The evidence also indicates that a variety of inter-connected causal pathways among family, neighbourhood and school factors are likely to be operating. Families do not function in isolation from the wider society of which they are a part.

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10 PREVENTIVE INTERVENTIONS: FAMILY DYSFUNCTION AND POOR PARENTING

In this chapter we discuss what science has contributed to an understanding of preventive interventions. We have chosen as our exemplar parenting interventions focused on family dysfunction and antisocial behaviour, because that topic illustrates well the range of science issues involved. Preventive interventions focused on either attachment problems or depression mostly use a rather different range of intervention approaches (see Berlin, Zeanah & Lieberman, 2008; Brent & Weersing, 2008 for reviews), but the scientific issues are broadly comparable. The chapter needs to be read, therefore, with an appreciation that our focus is on the role of science; the focus should not be misinterpreted as meaning that antisocial behaviour is the most important outcome.

There is an abundance of evidence that serious family dysfunction and seriously poor parenting provide a major risk for children's later antisocial behaviour (Loeber & Stouthamer-Loeber, 1986; Stewart-Brown et al., 2005; Farrington et al., 2004; Rutter, in press). Moreover, children's antisocial behaviour tends to be associated with quite pervasive areas of social malfunctioning, low educational achievement, and poor physical health. Follow-up studies indicate that the cost to public services is hugely greater in these antisocial young people than in other youths in the general population (Scott et al., 2001). In addition, there is evidence that children who score very highly on different manifestations of family risk have a much increased rate of continuing antisocial behaviour (Fergusson & Horwood, 2003). There is no doubt, then, that serious antisocial behaviour constitutes a major public health problem and that it is substantially predictable from early childhood.

A key paper by Moffitt (1993) was important in showing that early onset antisocial behaviour was quite strongly associated with continuation on a lifecourse persistence path right into adult life. Persistence can even go into the next generation as shown by a study in Oregon (Capaldi & Clark, 1998). Boys who experienced harsh parenting were likely to become delinquent, more likely to become teenage fathers and more likely to engage in partner violence. Further research (Odgers et al., 2007a & b) showed that the two major predictors of this adverse course were a family history of antisocial behaviour or substance abuse problems and manifestations of hyperactivity in the child. It has also been found that the presence of callous/unemotional traits is associated with a worse response to parenting programmes (Hawes & Dadds, 2005). All of that would seem to provide a strong basis for planning preventive policies. That is, the evidence that family dysfunction and poor parenting are important as part of the causal influence on antisocial behaviour, indicates that intervention strategies to improve parenting might well constitute effective means of prevention. The same evidence, however, shows that several aspects of parenting and family dysfunction are important – implying that interventions with a very narrow focus are not likely to be optimal.

The findings of social/behavioural sciences have been crucially important in identifying the patterns of antisocial behaviour, the causal influences on its development, and the association with family dysfunction and parenting problems. The same would apply to emotional and social disturbances. In this chapter, however, we focus only on the role of science in developing preventive research strategies and in the evaluation of their effects. What is most distinctive in the science is the programmatic approach used in contrasting various alternative hypotheses, and then utilising the findings to improve the interventions. The same applies to the attempts to identify the key elements leading to success in the intervention (i.e., the mediators), and the steps to identify the pre-existing features associated with certain groups benefiting more (or less) than other groups (i.e., the moderators). Finally, there are the programmatic efforts to ensure

community take-up of, and engagement with, the intervention, plus what is needed to make it more likely that benefits will persist over time.

PREVENTION STRATEGIES

The background is provided by the US Head Start and Early Head Start programmes (see Barnett & Hustedt, 2005; McCauley et al., 2004) and the High/Scope Perry preschool study (Schweinhart et al., 1993; Weikart & Schweinhart, 1992). Both showed benefits but the strongest claims were made for the latter. It focused on a very high risk group of poor families: it provided a high quality programme, there was a low rate of drop-out, the follow-up extended to age 27 and a partially randomised design was used. The High/Scope children had a significantly better outcome, as measured in several different ways, but caution is needed because the sample size was small (58 vs 65 controls - leading to uncertainties about generalisation), because there was only partial randomisation, and because nearly a third of the High/Scope group had been arrested at least once (as compared with half of the control group). The study provided important leads but not the definitive answers sometimes claimed for it.

Here we focus only on the main types of parenting programmes being used in the community (i.e., excluding the treatment of referred patients in a clinic setting). The first approach is the Nurse-Family Partnership developed by David Olds in the USA (Olds et al., 1986, 1998, 2004a & 2004b). It combines a universal programme (in disadvantaged communities) with targeted intervention elements. The target group was mothers having their first baby and the programme continued up to age 2 years. The rationale for this focus was on the basis that parents are most likely to be receptive when they lack any prior experience of parenting. The intervention involved attention to health issues as well as parenting, the care of the child, and family functioning. All the interventions were first used in pilot studies and during the intervention there was skilled supervision. There were

carefully specified goals and methods but the details of its individual implementation were flexible. Fergusson et al.'s (2005 & 2006) Early Start programme of home visitations in New Zealand had similar principles. Both this and the Olds programme used a randomised controlled (RCT) design. The findings showed significant benefits (in the Olds' case in three separate RCTs) although the benefits largely applied to interventions provided by trained nurses rather than trained volunteers. The benefits, although important and pervasive, were not particularly effective in preventing antisocial behaviour. The New Zealand Early Start programme led to gains in some areas of functioning but not others. The approach is currently being evaluated in the UK. The Family Check-up approach seeking to prevent children's problems by increasing parents' positive behaviour also has shown promise (Dishion et al., 2008), as has the use of health visitors to improve parenting and health in families at risk for abuse and neglect (Barlow et al., 2007).

Social learning prevention strategies

There are many parenting programmes based on social learning theory; the Webster-Stratton (1998; Webster-Stratton & Reid, 2003) programme with Head Start mothers, and the Sanders Triple P programme for high risk preschoolers (Sander et al., 2000; Prinz et al., 2009) well illustrate the approach. Usually, the beginning is concerned with promoting a child-centred approach including play skills. This is followed by sessions focusing on praise and rewards (with a particular emphasis on ample praise for appropriate behaviour); on setting clear expectations; on reducing unacceptable child behaviour; and strategies for avoiding trouble. Regular training and supervision is provided to ensure good therapist skills (see Scott et al., 2001; Prinz et al., 2009). Furthermore, detailed steps are taken to ensure good community take-up and community nurses/health visitors are involved (see Hutchings et al., 2007). Practical steps included providing transport, food, a crèche and flexible timing to ensure that families could attend. Groark and McCall (2008) provided a helpful detailed account of the range of

steps needed to ensure that community-based interventions work in the way intended.

Sure Start

Whilst undoubtedly the British Sure Start programme included some good elements (Rutter, 2007) it constitutes a sobering example of how policy-makers sometimes fail to understand the role of social science. Government prohibited a randomised controlled design – the one method with much the best possibility of showing efficacy or the reverse - and they prohibited specific accounts of the interventions to be used, on the grounds that it was better to leave the choice up to local groups (for reasons of 'community empowerment'). The net result is that researchers were forced to use a weak design, making the conclusions much weaker than they need be. Even worse, because there was a lack of good evidence on what the different Sure Start programmes actually did, there is no satisfactory way of knowing which of the elements were effective, which of the elements actually made things worse and which of the elements made little difference one way or the other.

Three key lessons, therefore, may be drawn from the Sure Start experience. The first is a failure to understand that when attractive programmes are on offer, there is bound to be selectivity in the take up of those programmes. Unless a randomised controlled design is employed, it will be almost impossible to sort out whether the apparent successes are a function of the individuals who opted into the programme, or the results of programme efficacy itself. The detailed findings of Sure Start indicated that such selectivity did indeed take place. Second, the experience points to the failure of government to realise that knowing that some intervention is better than doing nothing, is actually of extraordinarily little use in planning better services. Rather, it is crucial to know which aspects of the intervention made a difference so that those can be built on in making services better in the future. The sad thing is that the anecdotal evidence and qualitative observations suggest that there are many good

aspects of Sure Start but, unfortunately, we have no very good ways of determining which those are and for whom they are most valuable. Third, if any evaluation is to be used to influence policy, there are dangers in over-committing to a programme before the results of the evaluation are known.

EVALUATION ISSUES

It is clear that randomised controlled trials (RCTs) are the only satisfactory way of providing a valid evaluation of intervention efficacy where there is a clear and coherent 'intervention' (rather than a broad policy without identifiable elements), and numerous studies have shown that these are practicable and acceptable in the community (see references above; also, Scott, 2008). Nevertheless, there is still a problem stemming from the wariness of some professionals to take part. We strongly recommend that greater use be made of RCTs in studies of preventive intervention. It should be noted, however, that the randomisation can be undertaken after stratification (see Gardner et al., submitted) or it can be done by randomising geographical areas or local authorities rather than individuals (see Prinz et al., 2009). Groark & McCall (2008) caution, however, that RCTs should only be initiated after adequate piloting and ensuring that the programme can actually be delivered as planned. The Sure Start programme failed on both counts. The standard practice, in order to avoid bias resulting from selective drop-out, is to analyse findings on an 'intent to treat' basis (meaning, according to the original intention of the randomisation). Clearly, that is necessary but, particularly when there is a large drop-out for reasons unconnected with individual choice, it may be desirable **in addition** (not instead) to analyse the treatments actually received (see Nelson et al., 2007).

Not surprisingly, most early studies are undertaken by the pioneers working in universities or specialised care settings. A meta-analysis of child psychological treatments showed that those by the pioneers typically had substantial beneficial effects, whereas those in other

clinic-based studies were largely ineffective (Weisz et al., 1995). Implementation on a real world community-wide basis has proved quite a challenge; what has become termed the difference between efficacy (i.e., it works in optimal conditions) and effectiveness (i.e., it works in usual conditions). To some extent, it is probably almost inevitable that implementation in the community with practitioners of more varied skills and experience will produce more modest benefits. However, the 'real world' application of preventive strategies has to be a goal and it is important that social science meets the challenge of establishing what is needed to make this work well. A related issue is the need for replications of the pioneers' findings by skilled practitioners who did not play a role in the original devising of the treatment. A further need is to ensure adequate measurement of outcomes that are independent of parental reports. High quality studies now do this as a matter of routine.

MEDIATION AND MODERATION

One of the key issues in preventive parenting interventions concerns the question of the extent to which the children were truly at high risk for adverse outcomes. This has been tackled in several different ways. First, there has often been a focus on children from low income families living in a Head Start area (e.g., Webster-Stratton, 1998); some have used similar areas but have screened preschool children for early conduct problems (e.g., Hutchings et al., 2007; Sanders et al., 2000); and some have simply compared whole areas (Prinz et al., 2009). The findings (from RCTs) document the efficacy of parenting programmes for these groups, and also document that the families showed substantial adversity (as indexed by marital conflict, parental depression, etc.), and clinically meaningful problems in many of the children. Of course, it could be argued that these features make it a treatment trial rather than a prevention trial, but the target group being preschoolers indicates that, at the very least, the intervention was early.

That raises the question of possible moderating factors – that is, features that mean some groups responded well whereas others did not. This was looked at by Reid et al. (2001) in relation to ethnicity and by Gardner et al. (2009 & submitted) in relation to educational level, level of distress and disadvantage, and single parent status. Low education parents responded better than the remainder and single parents less well in the first study; and the second study showed that children of depressed parents responded better than average. Overall, however, putting the results of studies together, it has been found that the differences in outcome according to family characteristics have been quite small. In particular, the most distressed and disadvantaged parents seem to respond as well as others. It may be concluded that parenting interventions have been shown to constitute a moderately successful preventive strategy for these groups. Nevertheless, a remaining concern is the evidence of a somewhat higher drop-out rate in the families with the most problems (Sanders et al., 2000; Prinz et al., 2009). The implication is that the parents associated with high risk are also the ones most likely to drop out of treatment (Kazdin & Weisz, 2003).

One of the unanswered questions concerns the efficacy of parenting programmes for children with callous/unemotional traits (Dadds & Rhodes, 2008). In the small number of studies undertaken so far, they have been found to be less responsive to the parenting interventions, and it may be that, as Dadds has suggested, they may need a rather different form of treatment. An effective intervention is needed, nevertheless, because the limited available evidence suggests that their prognosis is not good. Also, so far as preventing the problems shown by the most crucially important group – namely those destined for lifecourse persistent behaviour – the most important predictors are a family history of antisocial or substance abuse problems and the presence of hyperactivity. To date, possible moderating effects have yet to be studied with respect to these groups and that remains a need. The same applies to the very serious parenting problems associated with recurrent abuse (Jones, 2008). We may conclude that parenting interventions have shown their worth, and the science already

undertaken so far shows the feasibility of moderator research. Such further research should have a priority because policy decisions on how best to intervene should rest on their findings.

The other key need is to determine what constitutes the key element in effective interventions. One way of tackling this question has been to compare different varieties of the same intervention using a randomised controlled design. For example, Sanders et al. (2000) did this with the Triple P-Positive Parenting Program. The standard form of the programme was contrasted with, on the one hand, an enhanced form (EBFI) including strategies to increase support through communication skills training and coping skills through brief cognitive therapy techniques. On the other hand, the contrast was with a self-directed form (SDBFI) using the same principles as the standard form, but in a written self-administered format. The other contrast was with a waiting list (WL) control condition. The analyses showed that all three active forms led to greater gains than in the WL control group. The follow-up findings suggested that the EBFI was the most effective and the SDBFI least effective, especially in high risk families.

An alternative research strategy has been to study mediation effects directly. In effect, what this means is that the scientists need to identify what is the key change in the family feature that is hypothesised to bring the benefits. This feature (such as parenting skills) needs to be measured well in a quantified manner. The research question, then, is whether the benefits for the children are accounted for by changes in parenting skills. Weersing and Weisz (2002) have pointed out how very few studies have examined mediation; indeed only some have had the relevant measures that could allow mediation to be studied. Forgatch and DeGarmo (1999) led the way showing that a change in parenting quality was a key element in bringing about a change in children's problems, in a programme for single mothers. In preventive studies focusing on preschoolers at risk, Gardner et al. (submitted) found that there was a significant (but small) mediating effect of a change in positive parenting skills with respect to a reduction in children's conduct problems. The finding needs to be tested in other studies but it is challenging in shifting focus from the

reduction in harsh negative parenting to the gains in positive parenting.

There are several implications for family policy that derive from the social/behavioural science findings. First, parenting interventions have been shown to be effective in improving outcomes in high risk groups of preschool children. Second, uncertainty remains on the efficacy of parenting intervention with very seriously high risk groups in which abuse or neglect is prominent. There is some evidence of efficacy in relation to abuse (see Jones, 2008) but better evidence is still needed and very little is known on the efficacy of parenting programmes in the case of neglect or emotional abuse. Third, although it has proved possible to engage many high risk parents, several studies (but not all) have shown that they are more likely to drop out of treatment. Fourth, especially with very high risk groups, there must be great caution before assuming the efficacy of either interventions relying on written advice and self-administered implementation or the use of volunteers. It does not seem to be a matter of training (because volunteers can be trained to have the relevant skills) but rather that they lack the broader expertise or mind set or clinical 'know-how' that comes with professional training to know how to respond to varying individuals needs. Also, it may be that parents tend to trust health professionals more than they do volunteers. Fifth, much has still to be learned about the key elements that make for success in parenting interventions, when this is judged in relation to benefits for the children. Social sciences has, we suggest, done a good job in showing what can be done but more is going to be much needed if there is to be further progress in developing effective parenting strategies. The topic on which least is known concerns prevention that involves a legal requirement that high risk parents accept treatment for parenting problems. It cannot be assumed that efficacy will be equally good in these circumstances, but equally it should not be assumed that compulsion has to be ruled out in all circumstances. Political values will have to influence decision-making on this topic but social science will be able to provide the evidence basis for the interventions being considered.

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11 CONCLUDING COMMENTS

Throughout this report we have tried to emphasise the distinct but complementary roles of scientists and policy-makers. Science can provide vital information on how things are and it can use time trends to forecast how things are likely to develop in the future. The setting of policy goals involves the inevitable balancing of multiple considerations and that is the prerogative of policy- makers. Both scientists and policy-makers need to have a better appreciation than many do at the moment of what each has to offer.

So what can social science contribute? To begin with, it can check the validity of observations with attention to the representativeness and the size of samples and hence the calculation of confidence intervals within which the true value is likely to be found. Both size and representativeness are independently important; a large sample generated by biased procedures is not a safe basis for conclusions. Social science can also focus on the reliability and validity of measures with a focus on whether the measures really do capture the features of relevance. In addition, it can identify important factors that make the same causes bring about different effects in different segments of the population. Throughout the report we have given several examples where that is the case. It is a common situation and trying to come up with some overall value as if it applied equally to all is a mistake.

Science also has at its disposal a range of designs and styles of statistical analysis that enable us to determine the key elements that lead to an increased risk or protection for individuals arising from a broad range of variables. Thus, it is a commonplace that both poverty and social disadvantage put young people at risk but what aspects of each of these are the features that constitute the main risk? Do they impinge equally on all people or do they have differential effects in different segments of the population? The chapter on resilience highlights some of these points and it is worthwhile noting the range of research strategies that proved effective. At one extreme there were well planned, well focused, qualitative studies based on appropriate sampling design. The scientists concerned were quite clear that these

could not prove hypotheses but nevertheless, they could be hugely informative providing ideas on how risk and protective mechanisms might operate. At the other end, there were the gene-environment interaction studies making good use of molecular biology to identify the genes that were to be investigated in relation to objectified and validated environmentally mediated risks. In between there are several research designs and statistical methods examining social interactions. Each has a place in contributing to the overall pattern of findings so long as we are clear about their relative strengths and weaknesses and what each can add. Good social science requires the application of multiple rigorous strategies in order to address issues of family policies.

A fundamental question throughout the whole of this report has been the need to determine when observational associations or correlations could justifiably give rise to probable causal inferences. For instance, in looking at whether risk effects were mainly genetically or environmentally mediated, we noted that you cannot tell that from the description of the risk factor. For example, we gave the example of maternal hostility or negativity. Obviously that is an environmental factor but the findings showed that about a third of the effects were actually genetically mediated. It is quite common to find that causality is not a matter of 'either/or' but of how things combine or work together.

Second, there is the issue as to whether the causal arrow runs in this direction or that direction. We gave examples of how the possibility of reverse causation could be tested and we also gave examples that pointed to the strong likelihood of the common operation of bi-directional effects. Third, we pointed to the importance of social selection. This is a fundamental issue that bedevils many attempts to understand how changes in family policies or practice might alter outcomes for children. It is a fact that most risk factors involve human agency in one form or another and humans both shape and select environments. Of course, it is not that they do so consciously, but rather they act in ways that bring about these selection effects. In addition, it has proved important to be able to differentiate between the origins of a risk factor and its mode of risk

mediation. We noted the need to study what is the key mediator of risk effects. What this means is that, if one takes a broad proven risk variable, it will be quite common to find that the main risks are brought about by some sub-element of that broad risk factor. Designs and statistical analyses are available to take further the examination of both complete and partial mediation.

Many risk factors span the prenatal and postnatal periods and it has proved really important to try and differentiate the two. The point is that the prenatal factors may operate through biological mechanisms set in motion in utero and which persist into postnatal life. By contrast, postnatal influences have to operate in a somewhat different way. We have discussed the importance of testing which preventive or therapeutic interventions are actually effective. Policy-makers need to realise that well thought-through, apparently very sensible interventions that might seem to have no adverse effects, can sometimes be completely ineffective or, indeed, actually make things worse. Policy-makers need to appreciate that there is no disgrace in having an intervention that does not work; that happens very frequently with even the best planned interventions. What is a disgrace is to persist with interventions that have been shown to be ineffective or even harmful. If good social science can ensure that more interventions are truly effective, they are also likely to be cost-effective (and that, too, can be determined).

Our review of social/behavioural sciences brings out four other features that require emphasis. First, for the most part, we are dealing with multifactorial features (meaning that a complex mix of genetic and environmental factors is working together). In consequence, it is totally pointless to seek to identify the one 'basic cause' because there never will be one. Second, one of the golden rules in science is to use multiple research strategies. It is only when multiple contrasting designs give the same result that there can be real confidence that the findings are valid. Inevitably, in the field of family functioning and child development, this also means that social/behavioural scientists must be prepared to collaborate with biological scientists in order to examine key questions. That was most obviously evident in the work

that we discussed with respect to gene-environment interactions but equally this applied in the study of institutional deprivation, where the key question was how environments 'got under the skin' in order to bring about lasting consequences. Thirdly, the key feature of good science is the testing of plausible alternatives. Science is not concerned with proving one's own hypothesis correct. Rather it consists of taking alternative plausible suggestions on how things might work and testing the one against the other in a rigorous fashion.

Naturally, all of this ends up with a final 'rule'; namely, the need for replications. All of us in science have to make heavy use of statistics in order to determine the statistical significance of the findings and the confidence intervals within which the true values are likely to lie. But, in truth, statistical significance is the poor person's guide to validity. In that connection, all scientists are 'poor people'. Nevertheless, the real test is whether independent investigators using different samples and often different measures to tap the same construct come up with the same conclusions. Policy-makers need to realise the dangers of relying on just one study finding, however good that study may be. That is also one of the reasons that good social science relies on peer reviewed research. This ensures that a group of scientists other than the researcher have gone through the evidence in order to see if alternative explanations have been adequately assessed, and to look at possible missing pieces of the puzzle or other limitations that make it unsafe to draw firm conclusions from one particular study.

Policy-makers may find it useful to bear in mind some general conclusions about the relationship between evidence and policy that are illustrated in the material we have presented.

Firstly, and encouragingly, there is evidence to show that policy interventions can be beneficial in fostering the well-being of families. In particular, well designed parenting interventions can work, and there is no need to be pessimistic in general about the capacity of public policy to improve the well-being of families. Good social science has led us to see that serious family dysfunction can have lasting ill-effects for the children, that community efficacy or good schooling can, to a greater or lesser extent, improve outcomes for

children from disadvantaged homes. These are not value statements but, rather, scientific findings.

Secondly, however, some well-intentioned interventions can be counter-productive, despite the fact that to common sense they would appear to be the right thing to do. One example to which we referred to was the Cambridge-Somerville youth study aimed at reducing delinquency. Precisely because common sense would suggest that such interventions are useful, there is a strong reason to be careful to ensure evaluation. The same principle applies to policy changes, for example in relation to access by fathers to children, where research shows that effects vary depending upon the behaviour of the father.

Thirdly, it follows that it is important to evaluate interventions in a rigorous way. As we noted in the case of Sure Start, the desire of government to allow local choice meant that a randomised controlled design – the one method with much the best possibility of showing efficacy or the reverse – could not be used, thus frustrating attempts properly to evaluate the initiative.

Fourthly, the commissioning of research by departments is important. We have cited examples of good commissioning, for example the Department of Health's commissioning on the effects of inter-country adoption. Good commissioning requires an understanding of multiple methods of analysis as we have stressed in this report, particularly on a topic as complex as the way in which parenting works. It may require patience in order to build for long-term improvements rather than short-term pay-off. Progress often means addressing enduring social problems by means of interventions that take time to establish and to evaluate.

Fifthly, the capacity to undertake evidence-informed evaluation depends upon good data sources, in particular longitudinal data sets. The examples of good science that we have discussed indicate that epidemiological longitudinal studies of both general population and high risk samples have proved highly informative, so long as they are used to tackle well-articulated, focused questions. The same applies to the British National Cohort studies. Without these long-term resources, researchers are limited in what they can reliably conclude.

In saying this, we do not mean to privilege just one sort of research resource. The examples have also shown the value of combining social science with twin, adoptee and molecular genetic strategies in order to study gene-environment interdependence. With respect to the testing of the causal inference from observational data, several examples have been given of how 'natural experiments' have been able both to confirm some hypotheses and to disconfirm others. The study of resilience has shown considerable advantages in the combining of high quality, well planned qualitative studies with equally well planned, searching quantitative analyses. Policy-makers, like scientists, have got to be interested in what interventions – either preventive or therapeutic – work and for whom they work most effectively. That is where randomised controlled trials must constitute an essential part of the overall range of designs to be employed.

In concluding this report, we need to turn to whether or not there are specific recommendations we can make about the funding of social/behavioural sciences. The most basic point, which we hope is clearly evident in the examples we have given, is that social/behavioural sciences are now riding high with a range of most ingenious techniques available to tackle complex and difficult questions. It is no accident that some of the examples we have given (for instance, those in the field of gene-environment interaction), are amongst the most highly cited of all scientific papers. That is because they broke new ground that opened up new ways of thinking about the ways in which both genes and environments operate. Other examples could also be given. The main recommendation, therefore, is that policy-makers need social sciences and it is imperative that these should be funded because of their practical value and not just their theoretical insights. But we hope that we have made the case that the best practical value is obtained by the best quality research.

It would be inappropriate to put science funding priorities in a hierarchical order. The examples have shown the value of combining social science with twin, adoptee and molecular genetic strategies in order to study gene-environment interdependence. With respect to the testing of the causal inference from observational data, several

examples have been given of how 'natural experiments' have been able to both confirm some hypotheses and disconfirm others. The study of resilience has shown considerable advantages combining high quality, well planned qualitative studies with equally well planned, searching quantitative analyses. Policy-makers, like scientists, have got to be interested in what interventions – either preventive or therapeutic – work and for whom they work most effectively. That is where randomised controlled trials must constitute an essential part of the overall portfolio of design to be employed. In summary, what is needed is a balanced portfolio of low, medium and high risk research. With respect to the last, we wish to emphasise the need to reward creative, innovative thinking if it carries the potential for moving things forward in a dramatic way. When funds are tight, there is always a tendency to support the conservative, well tested approaches. Of course, they need to be supported, but so do the high risk strategies by investigators with a strong track record because they may make the real leap forward. Finally, we need to emphasise the crucial importance of identifying causal mechanisms. These will involve cognitive, behavioural and neural processes. Their integrated identification is likely to have important implications for family policies.

APPENDIX 1: WORKING GROUP AND SUMMARY OF THEIR INTERESTS

Jay Belsky is Director of the Institute for the Study of Children, Families and Social Issues and Professor of Psychology at Birkbeck University of London. As a developmental psychologist, his work has focused principally, but not exclusively, on the early years, with interest in both basic and applied psychology. Thus, he has studied topics like the effects of child care and the aetiology of child maltreatment, as well as seeking to understand why parents parent the way they do, the effects of parenting on children's development and how marriages change across the transition to parenthood. He has been involved in several major and on-going longitudinal studies, including the NICHD Study of Early Child Care (USA), the National Evaluation of Sure Start (UK), both of which have informed government policies, and the Dunedin Longitudinal Health and Development Project (NZ).

George Brown is Emeritus Professor at the Institute of Psychiatry, Kings College, London. He has been involved in the study of the family since his research in the 1970s on the link of emotional nature of family relationships and the course of a schizophrenic illness. This research was followed by a series of studies dealing with the onset and course of common mental disorders such as depression and anxiety largely based on general population samples in the UK and abroad. The family has again emerged as a key risk factor both in terms of current relationships and the early experience of abuse and neglect. Throughout he has been concerned with the development of valid measures of stress and the quality of core social relationships.

Brian M. D'Onofrio, PhD, is Assistant Professor of Clinical Psychology, Indiana University-Bloomington. He studies the mechanisms through which early risk factors influence child and adolescent development. His work has been supported by the National Institute of Mental Health, National Institute of Child Health and Human Development, Indiana University, and private foundations. He uses quasi-experimental approaches, longitudinal designs, and intervention studies to explore the mediators and moderators of the associations between putative risk factors and various forms of psychopathology.

Judy Dunn is Professor of Developmental Psychology at the Institute of Psychiatry, King's College, London. Her research has been focused on children's social relationships within the family, including siblings and grandparents, and with friends. Her investigations have all been longitudinal, multimethod and have included naturalistic observations both within the family and at school, and high risk as well as general population groups. She has investigated children's communicative and emotional development, their social understanding and the impact of family transitions on their adjustment and wellbeing.

John Eekelaar was a member of the Oxford Law Faculty from 1965 to 2005, and is now an Emeritus Fellow of Pembroke College, Oxford. He is recognised for his pioneering work in socio-legal studies, especially in the field of family law, and has for many years worked closely with social scientists in topics as diverse as child protection and the economic consequences of divorce. He has been President of the International Society of Family Law, is a founding co-editor of the International Journal of Law, Policy and the Family, and co-director of the Oxford Centre for Family Law and Policy.

John Ermisch is a professor of economics at the Institute for Social and Economic Research at the University of Essex (1994-2010) and a Fellow of the British Academy. His research is concerned with the changing dynamics of family formation and dissolution, the allocation of resources within the family and intergenerational social mobility.

Frances Gardner is Professor of Child and Family Psychology in the Department of Social Policy and Social Work, at the University of Oxford, Fellow of Wolfson College, and a clinical psychologist. She has been Director and Deputy Director of the graduate programme in Evidence-Based Social Intervention at Oxford University since it began in 2003, and co-Director of the Centre for Evidence-Based Intervention.

Her research focuses on the development of anti-social behaviour in children and young people, particularly how early parenting style, and other risk and protective factors, influence young people's mental health and adjustment. She conducts randomised controlled trials of community-based parenting programmes in the UK and US, including the NIH-funded 'Early Steps' trial, as well as systematic reviews, and longitudinal studies of the development of antisocial behaviour and other mental health problem in young people. These include two large scale longitudinal studies of risk and resilience factors for mental health in orphans and vulnerable children in South Africa. She also uses UK national cohort data to assess how parenting and antisocial behavior have changed over recent decades. She specialises in direct observational methods for assessing parent-child interaction.

She serves on the Scientific Advisory Board for the National Academy of Parenting Practitioners - a UK organisation dedicated to research and training for dissemination of evidence-based parenting programmes, and for SFI, the Danish National Centre for Social Research; and on a UNODC Expert Panel on transportability across countries and cultures of family and parenting interventions.

Michael Rutter is Professor of Developmental Psychopathology at the Institute of Psychiatry, King's College, London. He has been engaged in the interface between social science and family policy since his 1972 book on 'Maternal Deprivation Reassessed'. He has served on several governmental groups including the Court Report and the Advisory group to Sure Start. In his research, he has made extensive use of longitudinal studies of both general population and

high risk groups. He has particular expertise in methodological issues in social science, in understanding resilience, in lifecourse development and in how families interact with communities and social groups more generally.

Albert Weale is currently ESRC Professorial Fellow and Professor of Political Theory and Public Policy in the Department of *Political Science*, University College London. Between 1992 and 2009 he was a co-editor of the British Journal of Political Science. His research has concentrated on issues of political theory and public policy, especially the theory of justice and the theory of democracy, health policy and comparative environmental policy. He currently chairs the Nuffield Council on Bioethics and is a Vice-President of the British Academy with special responsibility for policy matters.

Sharon Witherspoon has been in charge of the Nuffield Foundation's research in social science and social policy since 1996, and became Deputy Director of the Foundation in 2000. She has contributed to the development of significant programmes of research on children and families, and on empirical research in law, as well as a wide range of projects on social welfare, including work on the finances of old age, and poverty and inequality.

Before she joined the Foundation, she was a senior researcher at the Policy Studies Institute and at the (then) Social and Community Planning Research, (now the National Centre for Social Research). There she was responsible for the design and statistical analysis of various large scale representative studies of public behaviour, family life and the regulation of professions, as well as being one of the original researchers for the British Social Attitudes Survey series. She is a member of the Strategic Forum for the Social Sciences, housed at the British Academy, and various other strategic bodies supporting rigorous social science research. She was awarded an honorary MBE for services to social science in 2008.

APPENDIX 2: REVIEWERS APPOINTED BY THE BRITISH ACADEMY

Reviewers were asked to consider whether the report met the terms of reference and whether the evidence and arguments presented in the report were sound and supported the conclusions. Reviewers were not asked to endorse the report or its findings.

Professor E. Jane Costello
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Duke University School of Medicine

Dr Tim Croudace
Research Director, The Psychometrics Centre at the University of Cambridge
Senior Lecturer in Psychometric Epidemiology in the Department of Psychiatry
University of Cambridge

Professor Kenneth A. Dodge
William McDougall Professor of Public Policy
Professor of Psychology and Neuroscience
Director, Center for Child and Family Policy

Professor Nancy Eisenberg
Regents' Professor of Psychology
Department of Psychology
Arizona State University

Dr Richard Horton BSc, MB, FRCP, FMedSci
Editor, The Lancet
London, UK

APPENDIX 3: BRITISH ACADEMY PUBLICATIONS

Language Matters, a Position Paper by the British Academy, June 2009

Punching Our Weight: the humanities and social sciences in public policy making, a British Academy Report, September 2008

Joint Guidelines on Copyright and Academic Research- Guidelines for researchers and publishers in the Humanities and Social Sciences, published jointly by the British Academy and Publishers Association, April 2008

Peer Review: the challenges for the humanities and social sciences, a British Academy Report, September 2007

Copyright and Research in the Humanities and Social Sciences, A British Academy Report, September 2006

BRITISH ACADEMY

POLICY CENTRE

This report looks at what high quality research can provide for policymakers in relation to family policy. Its aim is to demonstrate how good science can contribute to evidence-based policy making. It is directed at senior policy-makers and their advisers, think-tanks and relevant NGOs, and academics and students seeking an overview of materials in this area. It examines the interface between science and policy; research on family structure, break-up and reconstitution; non-parental care; individuals' variable response to environmental hazards; life stressors, such as illness or divorce; abuse, neglect and bullying; institutional deprivation; drug use; the risks and protective effects that derive from communities and social groups; and preventive interventions around family dysfunction and poor parenting. The report does not claim to give the whole picture, but provides examples of how high-quality social science research can benefit policymakers.

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