

METHODS BRIEFING 31

Modelling Attitude Stability and Change using Repeated Measures Data

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Background and aims of research

Controversies concerning “family effects” are based largely in methodological limitations and the conceptual misunderstandings that derive from these limitations. The growing conceptual sophistication necessary for studying the family and family effects has not been matched with synthetic methodological rigour. As a result, there is a poor “goodness of fit” between theory and method. Our research has brought together researchers with diverse backgrounds and a rich array of datasets. This pooling of resources has provided the context in which we have developed robust methods for studying family process and family effects.

The primary aims of the research programme were to:

1. Identify key areas of controversy in family research and their underlying methodological dilemmas;
2. Develop, refine, and expand methodologies to address these areas of controversy;
3. Transfer knowledge of methodological advancements to family researchers.

The programme was organised around four key areas.

1: Within-family and/versus between-family variation

This concerns the distinction between within-family processes (e.g. why do siblings in the *same* home differ from one another?) and between-family processes (e.g. why do children in *different* families differ from one another?). Over a decade of research has demonstrated that siblings who grow up in the same family nevertheless show widely disparate patterns of adjustment. Equally importantly, for many measures of child adjustment, the amount of variation within families is as great as the amount of variation between families. This raises new questions and avenues of investigation. For example, do putatively “shared” or family-level risks (such as parental divorce or socioeconomic deprivation) have *differential* effects on siblings? If so, what are the implications for theory and policies supporting families? Models of risk and resilience, which are based exclusively on studies that assess only one child per family, can only address *between-family* variation. There is no guarantee that the processes explaining between-family variation are the same as those that account for within-family variation.

To test these hypotheses we developed and extended multilevel modelling for family research, using data from a wide range of studies in the UK, USA, and Canada that include two or more children per family. Extensions to the multilevel model have also been made to accommodate the important genetic hypothesis that similarity in adjustment among siblings from the same family is partly explained by their genetic resemblance. Using these methods we have derived robust and accessible estimates of within- and between-family variability in child outcomes, parent-child relationship quality and other key family processes. Findings from several datasets (representing UK, US, and Canadian samples) give ample support for taking further the multilevel approach; this is now a model that is gaining acceptance in family research. Moreover, we have developed some novel extensions of the multilevel approach that include behavioral genetics methods and “round robin” analyses based on the social relations model. More specifically, findings show that whereas some “shared” family stresses such as divorce or low socio-economic status may have differential effects on child adjustment and parent-child relationship quality, there are other “shared” family level effects that do indeed have family-wide effects on child outcomes, such as marital conflict.

2: How consistent are measures of family process when defined by questionnaires, direct observations, and interview?

Family researchers are well-equipped with a library of reliable and valid questionnaires, interviews, and observational measures. Nevertheless, there is often uncertainty about which particular question or interview measure may be best but, more importantly, there is the question of which level of analysis may best capture features of the family environment. For example, are parent cognitions, behaviours in an observational task, and reports on a self-rated questionnaire equally likely to index relationship

quality? Moreover, in studies that assess quality of family relationships using multiple methods, how do we distinguish between method variance that is meaningful from method variance that merely reflects idiosyncrasies (i.e. error) of the particular methods? In the context of naturalistic and experimental intervention study designs, we have considered convergences and divergences among alternative measurement. The inclusion of intervention studies is particularly valuable because of the interest in what changes (and why) in interventions to improve the quality of family relationships and individual outcomes.

Research findings using the intervention study designs of Stephen Scott have shown that parenting intervention effects may generalise to several paradigms of assessing parent-child relationship quality. So, for example, a behaviorally-focused parenting intervention was found to benefit not only behaviorally-oriented parenting measures, but also observed attachment measures of parenting. That is a novel finding, and it is important in providing strong evidence that there are fundamental links among certain models of assessing parent-child relationship quality. On the other hand, that study also showed that interview, questionnaire, observational data each have a particular role to play in predicting children’s behavioral and social adjustment. That is, each method provides valuable insight into the nature of parent-child relationships, and there are both conceptual and methodological explanations for this.

3: How resistant are family processes to alterations in social context?

A third consideration concerns the links between “proximal” processes within families and the wider social context. The notion that the effect of larger social system influences, such as economic conditions, trickle down and influence family process has been suggested for some time, and there is some supporting evidence. However, basic questions remain in

understanding how the family system intersects with the social, economic and political systems, and the extent to which family processes are insulated from social change.

The role of social context in shaping family process has been addressed using three exemplars. First, we have examined the role of social context in how to understand children's adjustment to divorce and remarriage. This has been accomplished by pooling datasets on studies of families transitions in the UK, USA, and Canada in order to examine the extent to which the processes explaining variation in children's adjustment to family break-up and re-organisation are invariant across these cultural contexts. Second, we have examined the role of social change by assessing how historical context modifies the effect of family transitions on children's well-being. This has been examined by analyses of cohort surveys in the UK. Barbara Maughan has worked with cohort-based studies (BCS70 and NCDS) that provide the kinds of data essential to addressing this issue. Third, we have tested hypotheses about levels of influence by examining the degree to which family structure (single-parent, intact, stepfamily) modifies family process and its effect on children. For example, are family processes associated with optimal child adjustment invariant across different family structures, or is it the case that well-functioning non-step or "intact" families look different from well-functioning stepfamilies? The investigators have been involved in studies assessing family structure change in the UK and Canada, as well as in several studies in the USA.

Findings to date offer a surprisingly comparable picture of family processes and child adjustment across social/cultural contexts, at least in some respects. Thus, the effects of divorce and remarriage and the lessons about within- and between-family variation are rather similar in the community and cohort studies assessed in the UK, US and Canada. Whether these processes extend to less economically and socially comparable cultures is not something we can

determine with the datasets we have available to us.

4: Do findings from naturalistic studies, "natural experiments", and experimental interventions converge?

A further area concerns the generalisability of findings from naturalistic studies, the primary research design used for studying family process. Decades of research of this kind have identified a remarkably long and robust set of correlates of children's well-being. To a large extent, these studies helped to construct interventions for distressed families and to reduce the costs associated with children's antisocial behaviour. What has emerged in recent years, however, is that not all of the lessons from naturalistic studies transfer to experimental intervention designs. For example, naturalistic studies implicate genetic factors, the impact of larger social systems, and family structure, among other factors, as predictors of individual variability on children's adjustment. In contrast, experimental intervention studies do not, by and large, suggest these factors mediate or moderate response to change in the course of an intervention. Accordingly, further progress in understanding the effects of family processes on children's well-being requires that findings from different study designs be integrated and synthesized.

Our programme includes researchers actively engaged in experimental intervention studies and naturalistic studies of family process, and thus we have been able to assess the points of convergence and divergence between these study types. This has helped in setting the limitations of naturalistic studies, and has indicated ways in which a range of study designs may (possibly) differentially contribute to our understanding of how families shape individual development, and how best to join research studies with developments in social policy.

The extent to which findings from twin studies converge with those from intervention and other designs is an issue that has received too little

research attention. We continue to identify examples of this in our work. So, for example, whereas many naturalistic study findings (i.e., results from non-intervention studies) show that family structure is an important predictor of child outcomes, that has not been shown in our analyses from intervention studies (in other words, family structure has little impact on response to intervention). Of course, there is no necessary connection between the two; that is a lesson that requires more attention from scientists and policy-makers.

Key publications

Jenkins, J.M., Simpson, A., Dunn, J., Rasbash, J., & O'Connor, T.G. (2005). Mutual influence of marital conflict and children's behavior problems: shared and non-shared family risks. *Child Development, 76*, 24-39.

Jenkins, J., Dunn, J., O'Connor, T.G., Rasbash, J., Behnke, P. (2005). Change in maternal perception of sibling negativity: within and between family influences. *Journal of Family Psychology, 19*, 533-541.

O'Connor, T.G., Dunn, J., Jenkins, J.M., & Rasbash, J. (2006). Predictors of Between-Family and Within-Family Variation in Parent-Child Relationships. *Journal of Child Psychology and Psychiatry, 47*, 498-510.

Further publications

O'Connor, T.G. (2006). Toward integrating behavioral genetics and family process. *Families, Systems, and Health, 24*, 416-424.

O'Connor, T.G., & Wynne, L.C. (forthcoming). Genetics and Family Process. *Current Directions in Psychological Science*.

O'Connor, T.G., & Byrne, J.G. (in press). Attachment measures for research and practice. *Child and Adolescent Mental Health*.

O'Connor, T.G., & Scott, S.B.C. (2006). Promoting Children's Adjustment: Parenting Research from the perspective of Risk and Protection. In M.E. Garralda and M. Flament (Ed.), *Working with children and adolescence: An evidence-based approach to risk and resilience* (pp. 67-93). Lanham, MD: Jason Aronson.

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