

**Longitudinal Research on Individual Development: Present Status and Future Perspectives.** Edited by D. Magnusson & P. Casaer. Cambridge: Cambridge University Press. 1993. Pp xix + 247. £45.00. ISBN 0 521 43478 5.

'Big science' is rare in psychology; at first sight there seems nothing so obviously enormous as the Hubble space telescope, superconducting super-colliders or the human genome project, with their huge budgets answering big fundamental questions. However, if there is an exception in psychology it is in longitudinal studies with their need for large numbers of subjects, followed over many years, with dedicated teams of researchers and huge spin-offs in secondary analysis. Indeed, the returns are often greatest for those not even involved in the original studies (and perhaps not even alive when the study started); as a recent example, the 1946 and 1958 British birth cohort studies have both been used to show very early behavioural changes in the half per cent or so of their subjects who as adults developed schizophrenia.

This book believes in the importance of longitudinal studies. It originated in a five year series of seminars and study groups organized by the European Network on Longitudinal Studies on Individual Development (ENLS), funded by the European Science Foundation, and reports the summing up conference. Of the 10 chapters, seven are European (from the UK, Germany, Belgium and Sweden) and are generally very good, full of ideas and with a definite sense of having benefited from the interaction; in contrast the three American chapters are mainly pedestrian, and have the flavour of being mere reimbursement for a transatlantic flight and a pleasant week in Budapest.

None of the authors doubts that a central theoretical problem for psychology is understanding development, and particularly development throughout the life-span. To achieve what Piaget called 'a science of ontogenetic development from birth to maturity encompassing three points of view—the biological, the behavioural and the internalizations of the behavioural into mental life', then longitudinal studies are essential; as Kruse *et al.* put it, 'the study of ontogenesis requires a methodology that is inherently focused on the study of intra-individual change and inter-individual differences in intra-individual change'. And yet there is the paradox; Weinert & Schneider start their chapter by saying, 'Every developmental psychologist knows it . . . Most of our theories of developmental change are not

based on empirical study of these changes, but rather on inferences derived from . . . cross-sectional studies; . . . longitudinal studies play only a secondary role'.

This book captures many of the problems of longitudinal research, and the short-term pragmatic advantages of cross-sectional studies in a scientific culture dominated by three-year grants and the need to publish rapidly and frequently. Magnusson points out the need for 'long-term commitment, skills in planning and implementation, administrative ability, and endurance of cooperativeness of the researcher'—plus, of course, facility at extracting large and continuing sums of money from sponsors and the longevity of the researcher as well. Running longitudinal studies is no joke, as I can attest from three large-scale studies of medical careers. When starting my first study, a colleague commented that it is like having children—before one knows it they end up taking over one's whole life. She was right.

Longitudinal studies can have a high risk of failure. It may be a decade before one realizes additional measures were needed, or that samples were not large enough. For that reason it is necessary in part, as Weinert & Schneider emphasize, that studies should be grounded in theory; then negative or positive results, as long as there is adequate statistical power, will always be useful. But that also ignores how the large, almost atheoretical, studies such as the National Child Development Study (and it was disappointing not to see a contribution from one of these very successful birth cohort projects), have continued to be mined for substantial nuggets, none of which could have been anticipated by the instigators of the study, now long retired, who merely tried efficiently to measure as much as possible concerning the children. It was the secondary analysts who saw the wider potential in the data; and here there is a crucial lesson—data from longitudinal studies need to be archived and freely available for further analysis, thereby maximizing the return on the original investment. Good longitudinal studies are like good wine; the longer they are kept the better they become.

If psychology is to have big science then it will probably be in longitudinal studies combining psychological with biological, genetic and neuroscience perspectives. Such approaches could be particularly successful not only in early life, but also in the Cinderella areas of normal ageing in early, middle and late adult life, where environment, society and disease interact in the 'entangled and intertwined' process that is psychological development. Individual researchers or even small research teams are unlikely to have all the skills or abilities for such studies. Here research councils and other large-scale funding bodies should be looking to instigate large-scale integrated longitudinal research. Those arguing for a future 'Human development project' to produce a proper map of biopsychological development throughout the life-span will find the present volume an invaluable resource.

CHRIS McMANUS (University College London)