

Kevin Marjoribanks: A life in education in context¹

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The passing of Emeritus Professor Kevin Majoribanks on the 29 April 2006 occurred at a time of continuing high level scholarly productivity. The present paper celebrates some of the accomplishments from his long career. It takes a developmental orientation, beginning with the early stages of his career in education and his choice of inequalities in educational outcomes as the core long-term focus for his scholarly endeavours. His emphasis was on family and school environments as the origin of inequalities in educational outcomes. His empirical work drew on both the conduct of large-scale longitudinal studies and on the analysis of secondary data. His scholarly achievements are reflected in the formulation of a series of increasingly comprehensive causal models linking environments to educational achievement and occupational attainment. His approach to research and theory construction offers a model for future scholars in educational research. Foremost, his achievements provide a foundation on which those future scholars can build.

Kevin Marjoribanks, educational outcomes, inequalities, causal models, environments

Emeritus Professor Kevin Marjoribanks (1938-2006) was a pre-eminent scholar in the international education community over several decades. His passing on 29th April 2006 occurred at a time of high level productivity and continuing contributions to the empirical and theoretical literature. The present article describes and comments on some of Marjoribanks' main empirical and theoretical contributions, including their origins and development over the nearly four decades of his academic endeavours that included more than 200 scholarly publications. It is intended as a celebration of his accomplishments and as an account of the strategies and processes associated with the development of a career at the highest level in educational scholarship and higher education. It begins with an outline of the central issue or passion that directed his scholarly pursuits over the course of his academic life.

INEQUALITIES IN EDUCATIONAL OUTCOMES

Marjoribanks' 1970 PhD thesis is the best place to begin in order to identify his central issue or passion. In fact, the focal point of that thesis provided the core direction for the rest of his scholarly endeavours. The topic of the thesis was "Ethnic and environmental influences on levels and profiles of mental abilities". Its first sentence was: "A variety of educational programs have been developed with the intention of ameliorating ethnic group inequalities in educational achievement." (1970, p.2). This is the first pointer to his career focus on inequalities in educational outcomes. The consistency of this overarching focus on inequalities in educational outcomes can be seen from any cursory glance at his subsequent list of publications. However, the consistency is well illustrated by the first sentence of what can be described as a late effort to integrate his empirical and theoretical contributions, namely his most recent book, *Family and school capital: Towards a context theory of students' school outcomes* (2002). The first sentence

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of that book was “One of the persistent challenges confronting societies is how to reduce inequalities in the educational and occupational attainment of students from different socioeconomic, ethnic and race group backgrounds.” (p. 1).

The selection of these two first sentences from publications at each end of his career exemplifies the consistency of his driving theme, namely inequalities in educational outcomes. His PhD and some of his early publications used ability or intelligence as a measure of so-called educational outcomes (Marjoribanks, 1970, 1972a,b,c, 1974a,b). In this early research he operationalised intelligence or mental abilities by scores on the SRA Primary Mental Abilities test. The selection of mental abilities or intelligence was consistent with a theoretical model that included mental abilities as a mediator of educational achievement. It was this model that guided Marjoribanks’ early research (see for example, Figure 1, 1972c; summarised here as Figure 1). His research throughout the 1980s, 1990s and recently utilised other indicators of educational outcomes. These included: school academic results, levels of education achieved (including post-compulsory and post-school education), whether or not students completed school, and career outcomes.

The inequalities that motivated Marjoribanks’ pursuits were associated with differences in educational outcomes according to race, ethnic, and social status groups. His PhD research was conducted with five Canadian ethnic groups. Subsequently he analysed data associated with ethnic, race or social groups from the United Kingdom, Australia, South Africa and Hong Kong. In all of this research an international orientation is apparent. The international elements of his work arose partly from the countries in which he undertook research or data analysis, but also in terms of the race or ethnic groups for which he examined educational outcomes. His Australian research, for instance, included groups from Europe, Asia and the Middle East.

With inequalities in educational outcomes as the core of Marjoribanks’ life work, it is helpful to examine that core in the context of the educational, sociological, psychological, and political environment of the 1960s and early 1970s. This context may point to some influences on his choice to pursue inequalities in educational outcomes, as well as his chosen research methods and data analysis strategies. Marjoribanks’ undergraduate degrees and early teaching experience can also afford clues to the area that became his life’s work.

EARLY CONTEXT: FROM TEACHING TO PHD STUDY

Marjoribanks obtained a BSc in mathematics from the University of New South Wales in 1958 and completed his teaching qualification with a Diploma of Education, also from the same University, in 1958. The BSc clearly furnished the foundation for his later capacities and achievements in complex and innovative data analysis techniques. His exposure to teacher education and then his initial teaching experience in NSW came at a time of considerable debate about the future and purpose of secondary education generated by the Wyndham Report in 1957. Following his first teaching appointment at Maclean High School, a small NSW country school, in the early 1960s Marjoribanks took a teaching position at a leading independent school for boys in Adelaide (St Peter’s College). In the 1960s the contrast in the backgrounds and life chances of students from St Peter’s College versus the small country town in New South Wales where Marjoribanks began his teaching would have been apparent. The St Peter’s appointment probably exposed him to new dimensions of issues about the purpose and role of education in the lives of young people, socially and economically. It probably also placed him in a context where the school saw itself as taking a leadership role with respect to issues associated with educational outcomes and future trends in curriculum and teaching.

During these beginning years of teaching, Marjoribanks undertook a second undergraduate degree by distance study from the University of New England. It was in Economics. One can only speculate about the contribution of this study of economics to his coming focus on the role of education in students’ achievement and life outcomes. At that time, as now, there was

considerable debate about the importance and function of education in supporting economic growth. This attention to education and economic development could have provided a further impetus in the 1960s for Marjoribanks' attention to the links between education and individual, social, and economic outcomes.

We can conjecture, therefore, about a possible confluence between Marjoribanks' teaching experiences, educational issues and debates at the time, and his studies in education and economics that prompted ambitions towards higher study in the field of education, and research as a career. His strategy in making the first steps towards that career was critical for his subsequent achievements and contributions. Marjoribanks chose to leave Australia at a time when choice of North American universities was not a common path for Australian higher degree studies. The choice of Harvard for his MA. and then the Ontario Institute for Studies in Education at the University of Toronto revealed an early orientation towards major international scholars, the "big picture", and the mastery of theory and research at the forefront of educational issues.

EARLY CONTEXT: INFLUENTIAL PUBLICATIONS AND TRENDS

Marjoribanks' graduate study occurred in a decade that saw a number of seminal publications about inequalities in education. It was also a time of intense public and political debate. The formative influence of these publications and the *zeitgeist* of the time can only be speculated about. But, we can identify some of the research and analyses that Marjoribanks cited in his PhD, many of which he subsequently (1979a,b) acknowledged as being critical in shaping his ideas. They included Bernstein's (1961) analysis of social class and linguistic development, and Hess and Shipman's (1965) research on mothers' teaching styles and their child's learning styles, aimed at better understanding family sources of deprivation. There was also Coleman et al.'s (1966) book on equality of educational opportunity in the United States. In the United Kingdom there was the Plowden report on children and their primary schools in 1967, and Fraser's (1959) book on the home environment and the school.

One of the most important and influential analyses at the time was Bloom's (1964) book on *Stability and Change in Human Characteristics*. There was a direct path between Bloom and what Marjoribanks later (1979a) described as the "Chicago school" and his own research and developing theoretical ideas. Marjoribank's PhD supervisor (Weiss) had been a student of Bloom's. Along with Weiss' (1969) PhD, Marjoribanks also cited two other theses from Chicago as highly influential on his own work. These were by Dave (1963) and by Wolf (1964). All three theses were about the measure of process variables in the family environment. Marjoribanks (1979a) also acknowledged Murray (1938), through Bloom and his students, as the origin of his analysis of the environment in terms of alpha press and beta press.

The 1960s was a time of considerable debate about education and inequality. We should remember, for example, that Head Start in the United States began in 1964. Head Start was based on the extant knowledge about compensatory education and analyses of educational outcomes and cultural deprivation (e.g., Bloom, Davis, & Hess, 1965). The Plowden report in the United Kingdom was a response to public and political concerns about the role of education and inequalities. It was a time in the UK when there was an increasing emphasis on comprehensive schools and movement away from the tripartite system of separate schools and tracks for different students.

The increasing public, political and scholarly attention to inequalities in educational and career outcomes in the 1960s clearly prompted awareness among scholars and policy makers of the need for research; to provide analyses of inequalities as well as to underpin intervention strategies to reduce those inequalities. The intervention emphasis is apparent in Marjoribanks' thinking. As cited above, the first sentence of his PhD is about inequalities in educational outcomes, but is also about programs designed to ameliorate these inequalities. It appears that a significant impetus

behind his research on inequalities was the potential to use this knowledge as the basis for change. The intervention orientation and his background in sociology were also possible factors in his overriding emphasis on environmental analyses of educational inequalities rather than suggested genetic differences in intelligence (e.g., Jensen, 1969).

Marjoribanks (1970), along with Bloom (1964) and his students, recognised that an important impediment to the understanding of inequalities was that analyses were mainly restricted to general marker variables such as race, ethnic group or social group. The new emphasis (that included the work of Marjoribanks) identified the need to get beneath general categories such as these to understand better possible process or other factors that are the proximal causes of differences in educational outcomes. Thinking of this kind led to developments in three ways, to which Marjoribanks made seminal contributions from his PhD onwards. The first was the need to develop methods and measures of environmental process variables. The second was to incorporate the large number of factors associated with educational outcomes into causal models that yielded hypotheses about how the factors interacted together in influencing educational outcomes. The third was that data analysis strategies needed to be developed in order to examine the environments and test the causal models, together with techniques to present and explain the findings.

The next three sections of the present article take up these three areas of development and focus on Marjoribanks' contributions through (a) the definition and measurement of environmental process variables, (b) the development of causal models to explain the impacts of race, ethnic and social groups backgrounds on educational outcomes, and (c) the innovative data analysis and data presentation strategies that he advanced and employed. In doing this, advances in his work are traced over the course of his scholarly career.

DEFINITION AND MEASUREMENT OF ENVIRONMENTAL PROCESS VARIABLES

Marjoribanks undertook his PhD research and early writing and publication at a time of growing emphasis on the role of the family environment in child development and educational outcomes. Greater attention was being given to "environmental explanations". However, as he and others noted at the time, there were only preliminary understandings of how to conceive and measure the family environment as an influence on child development, school achievement, and occupational outcomes. Marjoribanks (1970) drew on Jensen (1968) to argue a need to define the environmental factors, measure them, and examine them using regression equations. The assumption was that the variance attributed to ethnic group or social status group differences would then be accounted for by the environmental variables. His immediate challenge at the time was to identify a set of environmental forces that influence child mental ability (since this was the variable assumed to mediate the effects of the family environment on educational achievement and in turn occupational attainment).

In defining the environmental forces and devising measures for them, Marjoribanks (1970) turned to the work of Murray (1938), Bloom (1964) and his students, Wolf (1964), Dave (1963) and Weiss (1969). With the aim of elucidating influences on student mental abilities and then educational achievement, Marjoribanks (1970) conceptualised the main feature of the home environment in terms of the "achievement orientation" of the home. This comprised the extent to which the home environment exhibited (a) a press for activeness, (b) a press for intellectuality, (c) a press for English, and (d) a press for achievement.

Marjoribanks drew on Murray's (1938) idea that the environment should be understood in terms of the kind of effect that it had on the individual, conceived in terms of the "press of the environment". Marjoribanks was also influenced by Murray's separation of the alpha press and beta press of the environment. Alpha press was the actual press of the environment, whereas beta press was the press as perceived by the individual. In his research and model building,

Marjoribanks' work centred on alpha press. He defined the press variables as "sets of social-psychological process characteristics" that were assessed in interviews by "obtaining measures of specific behaviours or attitudes within the family" (1979a, p. 31).

In his PhD research and published partly in Marjoribanks (1972a), he used semistructured home interviews to assess eight press variables. These were press for: achievement, intellectuality, activeness, independence, English, a second language, father dominance and mother dominance. The eight press variables represent a broad coverage of environmental factors that might influence educational achievement. He subsequently advanced his conceptualization of the family environment and in his 1972c article, which also drew on his PhD research, the core construct was the family's "achievement orientation". In his first major study following his PhD, described by Marjoribanks as the Adelaide Study, he conceived of the family as having five main environmental dimensions. These were again assessed by interviews. The five dimensions were: achievement orientation, press for independence, press for English, aspirations, and individualistic-collectivistic achievement values. This early evolution in his thinking can be seen to arise from a sharpening of hypotheses about the specific aspects of the environment (structure and process) that may influence educational outcomes.

As already noted, by 2002 Marjoribanks had shifted to conceiving the main role and measures of the family (and school) environments in terms of "capital", as outlined in the following section on his explanatory models.

THE DEVELOPMENT OF EXPLANATORY MODELS

A strong element of Marjoribanks' research throughout his career was that it was model or hypothesis driven. Many of his achievements can be attributed to the development of explanatory models of environmental influences on educational outcomes. His PhD research and early writing was directed by a model linking ethnicity, social class and occupational achievement (for example, see Figure 1 (1972a), summarized here as Model 1 in Figure 1). This theoretical model was unidirectional (except for a bidirectional association between ethnicity and social class) and mediational, with direct and indirect effects. Ethnicity and social class were conceived to influence the achievement orientation of the family and child intelligence. The families' achievement orientation directly affected child intelligence. His main outcome variable was educational achievement. This was seen as being influenced by both family achievement orientation and child intelligence. Although not measured in his research at the time, Marjoribanks' model incorporated occupational attainment as the ultimate outcome. This was influenced by educational achievement, family achievement orientation and child intelligence.

Marjoribanks' 1972 theoretical model showed that occupational attainment (as the terminal outcome) was central in his consideration of inequalities in educational outcomes. This model also emphasised mediational processes together with direct and indirect effects. Throughout the 1970s, Marjoribanks continued to evolve and develop his conceptualisation of processes influencing educational attainment. This can be seen in two of his models or frameworks published in 1979. One of these (1979a) was more general and the other (1979b) was developed to guide his research on ethnic families in Australia.

The general model incorporated several layers of the environment as the first step (summarised here as Model 2 in Figure 2). This included what he called ethclass, a combination of ethnicity and social class, the neighbourhood, family, school and classroom environment, and peer groups. Again the main processes were unidirectional, with direct as well as indirect (mediational) influences. The environmental characteristics were assumed to influence individual attributes of children, children's interpretation of social situations, and academic achievement. Academic achievement was also influenced by individual attributes of children. One of the links to achieved

status was from academic achievement. The model also incorporated other indirect processes assumed to influence achieved status through child attributes.

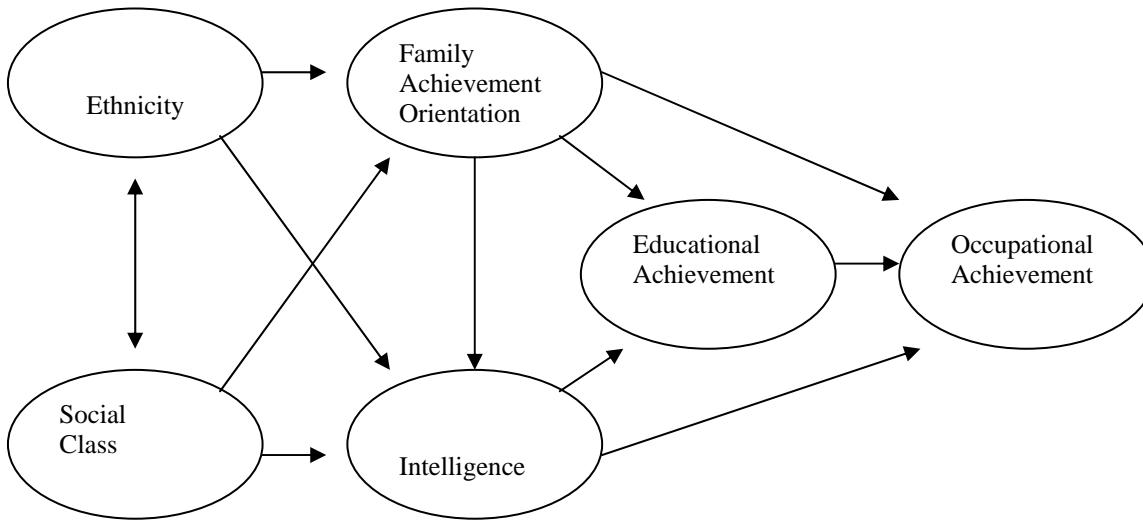


Figure 1. Model 1 (1972), based on Marjoribanks (1972c) Figure 1

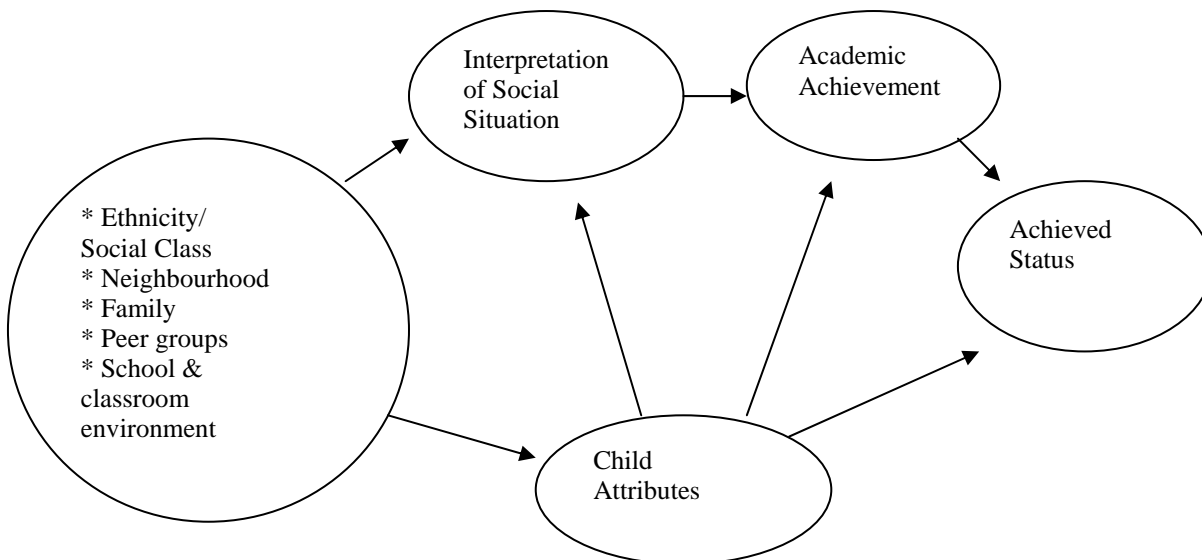


Figure 2. Model 2 (1979), based on Marjoribanks (1979a) Figure 1.1

The model developed for his research on ethnic families (1979b, summarised here as Model 3 in Figure 3) included academic achievement as the educational outcome. The “family achievement orientation” of the 1972 model had been expanded to now cover “family social-psychological dimensions” and the student “intelligence” of 1972 had been expanded to include “children’s intelligence and school attitudes”. Social status and ethnic group were conceived to have direct effects on academic achievement, but also indirect effects. The latter involved mediation through family social-psychological dimensions, and children’s intelligence and school attitudes.

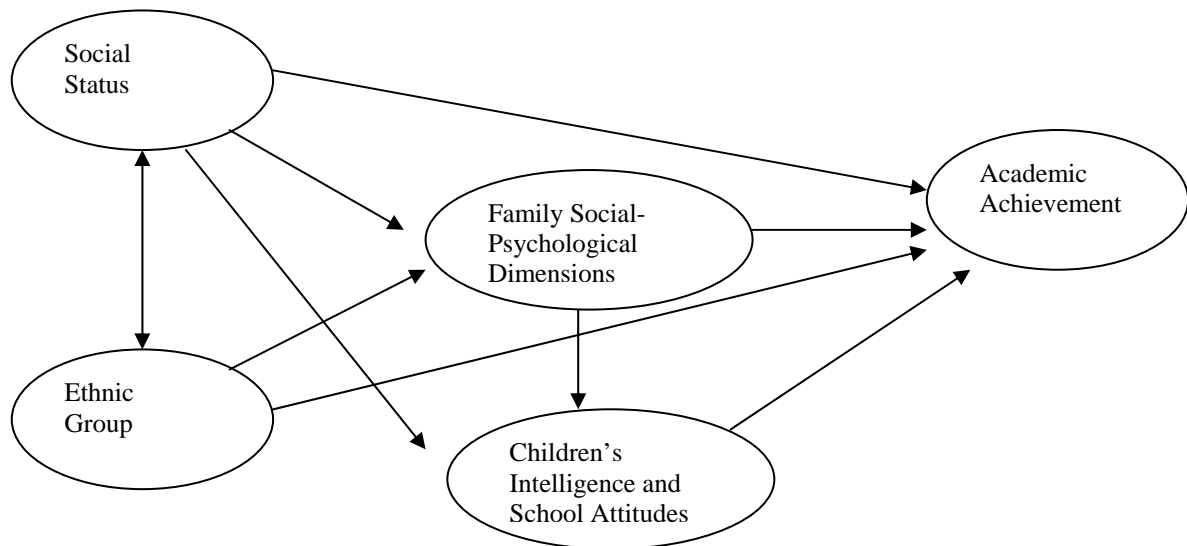


Figure 3. Model 3 (1979), based on Marjoribanks (1979b) Figure 1.2

It can be seen that throughout the 1970s Marjoribanks increased the complexity of his theoretical models to explain social status and ethnic group differences in educational outcomes. This increased complexity occurred mainly in terms of (a) the dimensions or elements of the family environment, and (b) characteristics of individual students that were influenced by these environments. It is apparent that his attention to the environment and its influences on students was gradually incorporating aspects of the school environment and student's school-related attitudes and behaviour.

Marjoribanks' research and the development of his conceptual understanding of environmental influences on inequalities in educational outcomes occurred partly through his engagement with a number of research projects and data sets during the 1980s and 1990s. In 2002 Marjoribanks published as a book what he probably intended as an integration of his theoretical and empirical work. The book's title was *Family and school capital: Towards a context theory of students' school outcomes*. Figure 1.2 of that book represents an overview of his conceptual thinking in what is now called a "mediation-moderation model" of family and school influences on educational outcomes (summarised here as Model 4 in Figure 4). Again the model was unidirectional with direct and indirect effects.

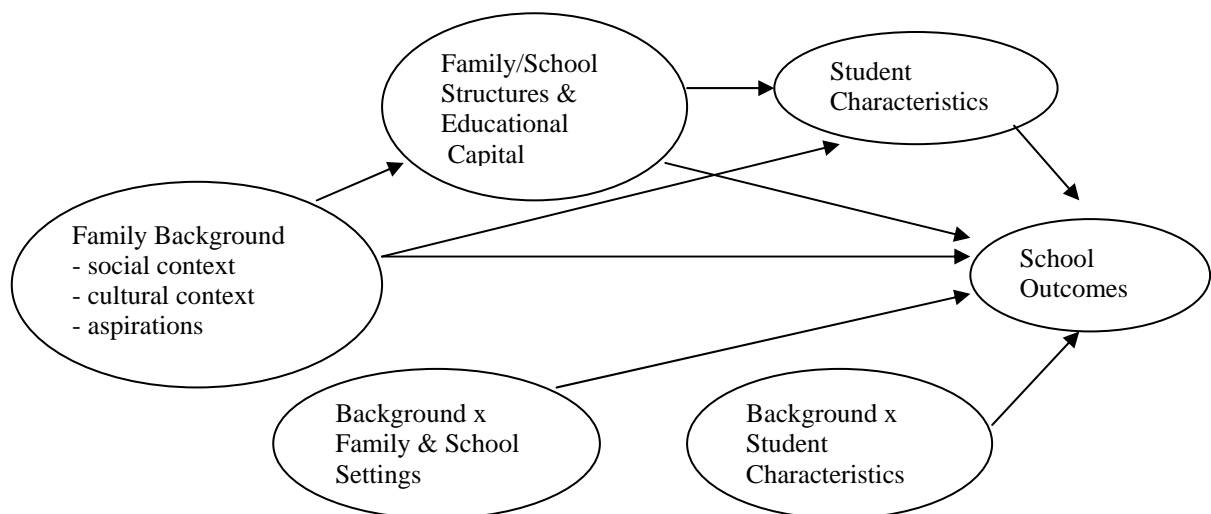


Figure 4. Model 4 (2002), based on Marjoribanks (2002) Figure 1.2

The core constructs in the 2002 model were family background, family structures and educational capital, school structures and educational capital, student characteristics, and school outcomes. The effects of family background were assumed to be mediated by family structures and educational capital, which in turn was mediated by school structures and educational capital. The final step in the model was student characteristics. These were assumed to be influenced directly by family background and indirectly through family capital and school capital. School outcomes were assumed to be directly influenced by family background, family capital and school capital. Most of the effects of the environment (family and school), however, were proposed to be mediated by student characteristics. This means that a strong element of the 2002 model was that family and school environments had their main impact on school outcomes through what was called student characteristics.

In addition to an emphasis on mediated effects in the conceptual model, Marjoribanks (2002) also highlighted the role of moderation in the overall understanding of the effects of family background, family capital and school capital on school outcomes. Marjoribanks' attention to moderation was consistent with his data analysis strategies and data presentation approaches from the 1970s onwards. His data analyses frequently involved the examination of interaction effects in multiple regression. In turn, he often presented the results in the form of fitted regression surfaces. An example of this approach is the reporting of the interaction between parents' aspirations and child intelligence in the prediction of mathematics achievement for three ethnic groups (Figure 5.7, 1979b). This result showed that the effects of intelligence and parent's aspirations on achievement were moderated by ethnic group. In the 2002 model, Marjoribanks was also interested in family background as a moderator. In this case, the interest was on how family background moderated the effects of school settings and student characteristics on school outcomes. For instance, the moderation could be in terms of variations in the effects the school setting or student characteristics according to features of family background (for instance, different effects from one ethnic group to another).

In the integrative 2002 model, Marjoribanks included in family background an expansion of his earlier ethclass. In 2002, family background was also called distal family background. It included the social (e.g., social status, parents own aspirations) and cultural (e.g., ethnic or cultural group membership) contexts. The more proximal elements of the family, with an emphasis on within family processes, were included in the family structures and educational capital construct. Family structure pertained to features such as whether it was an intact or single parent family, the size and role of the extended family, family mobility, and family size. Family capital centred on processes that would be expected to contribute to educational outcomes. It included parenting practices and styles, the provision of cultural and human resources associated with school success, and support for the child, especially support in relation to education and future plans.

The "school structures and educational capital" construct reflected an increasing emphasis on the school environment in Marjoribanks' research and model development during the course of his career. School structure covered elements such as whether the school was government or private, school size, whether it was single or mixed-sex, and whether the school used ability grouping. The school capital component dealt with the school's learning, interpersonal, and regulatory environments. School capital also incorporated student engagement as a component.

The student characteristics construct in Marjoribanks' (2002) model also reflects an evolution and development of ideas over his career. His PhD and first publications used ability or intelligence as the most proximal variable influencing academic achievement. In 2002, student characteristics incorporated: the student's aspirations for work and education, self-efficacy beliefs, effort and commitment to achievement and learning, as well as ability. Probably most emphasis in 2002 was placed on the student's aspirations. These were seen as arising in the context of the family background, family capital, and school capital. In essence, the stress was on the influence of

environmental contexts in the family and school on student aspirations as the core process mediating the effects of the family on educational achievement.

In Model 1 (Figure 1), educational achievement was the main outcome. In 2002 it had evolved into the broader construct called school outcomes. This was deliberately intended to enable attention to be given to one or more of a number of school outcome indicators. Around that time and during the previous decade or so, Marjoribanks had published research with a variety of these outcome indicators. The variety partly reflected the longitudinal emphasis in the research. When at school, for example, the outcome measure might be school achievement, whereas data collected at age 21 years could focus on the level of education that has been achieved. His outcome measures, therefore, included school academic results, standardised achievement test results, whether or not the student completed school, the highest level of education that had been achieved, and career outcome. His 2002 model was intended to reflect this diversity.

DATA ANALYSIS AND DATA PRESENTATION STRATEGIES

With his first degree in mathematics, it is not surprising that one of the strengths of Marjoribanks' research and contributions to scholarship occurred in the areas of data analysis and data presentation strategies. Beginning with the PhD, his main analysis strategies were based on correlational and regression techniques. These were developed and evolved in concert with his theoretical models and research hypotheses. In the 1970s (e.g., 1979a, 1972b) he focused on regression analyses with interaction terms and linear plus non-linear effects. He perfected the technique of presenting his results in regression surface models in order to display the interaction effects plus linear and non-linear relationships. In order to assist visual presentation and understanding, his strategy was to plot the data in terms of standardised scores with means of 50 and standard deviations of 10. He then combined two or more regression surfaces in the one figure to illustrate the effects of different contexts. For example, to show the differences between ethnic groups in the effects of the interaction between press for English in the home and student intelligence on educational achievement, Marjoribanks plotted regression surfaces for two or three separate ethnic groups (see Figure 5.8, 1979b).

Because his models were largely mediational in character, Marjoribanks needed to develop strategies to test and illustrate mediational effects. His approach was to undertake a series of multiple regressions, first entering variables covering family background followed in turn by models that included variables measuring family capital, then school capital, and finally student characteristics. He paid attention to the increment in variance explained at each step and the significance of the individual variables in the final model. He also gave importance to the change in unstandardised regression weights from one step to the next. This change enabled him to comment on whether and to what extent variables entered in the first or early steps were mediated by variables entered in subsequent steps.

His mastery of interaction effects in multiple regression was illustrated by publications that described and elucidated this technique (e.g., Marjoribanks, 1998a). For instance, Marjoribanks (1998a) made the case for the complexity of educational phenomena and therefore the role of analyses using different kinds of interaction, with associated presentation strategies for the obtained results. A particular achievement of that publication was to present and discuss the different types of interaction effects. He set out clearly differences between ordinal, disordinal and hybrid interactions, noting that probably too much emphasis in research had been placed on disordinal interactions at the expense of ordinal interactions.

Interaction effects in educational research are consistent with different effects according to situation or context. For instance, high aspirations might have different effects on educational achievement for different ethnic groups, or in schools with different learning environments. As part of the discussion of the role of situation and interaction effects Marjoribanks (1998a) went on

to highlight the hierarchical (students nested within classes) aspect of much educational research. This raises the possibility that characteristics of students in classes or other features of individual classes could affect the relationship between educational inputs and achievement outcomes. He then outlined the developments in statistical theory in the form of multilevel analyses such as Hierarchical Linear Models (HLM) as a basis for the investigation of within- and between-classroom or school phenomena. For example, different teaching methods might vary in the effect on student achievement in different classes or in different schools.

Although in this 1998 publication Marjoribanks discussed the importance of multilevel analyses in understanding the effects of environmental contexts and other interaction effects, it was not until a publication in 2006 that he took account of the nested nature of the data in his own research. He was in the process of mastering multilevel analyses, however, and his next series of publications would, no doubt, have moved to multilevel analyses. Moreover, he was encouraging his doctoral students to undertake multilevel analyses that involved cross-level interaction effects.

PRIMARY RESEARCH AND ANALYSES OF SECONDARY DATA

An appreciation of Marjoribanks' milestones and achievements can be partly captured through the research he conducted and the analyses that he undertook on secondary data. The first step on this path was his PhD research. This was a study of a sample of families from five ethnic groups in Ontario, Canada, with at least one 11-year-old boy attending school. In turn, the sample for each ethnic group was divided into sub-samples of middle class and low class families, based on a socioeconomic status index. Data about the family environment were gathered through semistructured home interviews. The SRA Primary Mental Abilities Test (1962 Revision) was used to obtain verbal, number, spatial, and reasoning ability test scores for each boy. The selection of boys only was based on an assumption of possibly different processes influencing educational outcomes in boys and girls. Some of his subsequent research examined boy-girl differences (Marjoribanks, 1979a). A series of publications emerged from this PhD research (e.g., Marjoribanks, 1972a,b,c, 1976b; Marjoribanks & Walberg, 1975a,b; Marjoribanks, Walberg, & Bergen, 1975). These publications addressed a number of questions about particular elements of family context associated with environmental influences on educational outcomes. These included social class, birth order, family size and sibling constellation.

Immediately following the awarding of his PhD, Marjoribanks took a position of Lecturer and Tutor in the Sociology of Education at the University of Oxford Department of Educational Studies. Here he initiated his second substantive research project in the form of the Banbury School Research Project (Marjoribanks, 1976c, 1978). The research involved assessments of intelligence and creativity at the beginning of the first year in secondary school. During their first school year, and at the end of their second year, the students' school-related attitudes were measured. The students completed academic achievement tests at the end of their first and second school year. Marjoribanks examined the relationships between the school-related attitudes and academic achievement while controlling for intelligence and creativity (Marjoribanks, 1976c). The project also enabled him to use the cognitive and attitudinal measures to compare students from stratified and mixed-ability school structures (Marjoribanks, 1978).

Marjoribanks' third substantive research study was what he called "The Adelaide Study". This was a longitudinal study. It began with a cohort of 800 students 11 years of age and their families from Government and Catholic schools in Adelaide. It involved several follow-ups with the sample until the students were 21 years of age. The ethnic background of the sample included families that were Australian, English, Greek and Southern Italian. Semistructured home interviews with the parents were used to assess family environment variables, such as parent's aspirations, cultural capital, social capital, and parent support. The first data collection included standardised tests of student achievement and the Raven Progressive Matrices test at age 11 years.

Subsequent data collection (e.g., at 16 and 21 years of age) involved student assessment of the learning environment, and student aspirations as well as other measures of educational outcomes (such as school completion and the level of education reached at age 21 years).

In the late 1990s and more recently, Marjoribanks undertook a series of studies in South Africa with Mboya, in Hong Kong with Kwok, and in Taiwan with Hung. The South African research, for example, involved senior secondary students and included the investigation of the influence of family structures and family processes on self-concepts (Marjoribanks & Mboya, 1998) and the effects on self-concept of distal family capital, family social capital and goal orientations (Marjoribanks & Mboya, 2001). The research in Hong Kong investigated the effects of social status, birth order and sibsize on 14-year-old students' perceptions of the family learning environment (Marjoribanks & Kwok, 1998a) as well as links between family capital and academic achievement (Marjoribanks & Kwok, 1998b). Finally, in a sample of 11 year-old Taiwanese children, Hung and Marjoribanks (2005) investigated the contributions of family background, family learning environment and school learning environment to academic achievement, educational aspirations and self-concept. These studies were part of Marjoribanks' attempts to examine the extent to which his models of educational outcomes were supported by research in international contexts.

A key ingredient of Marjoribanks' contributions was that he used his conceptual and analytical capacities to undertake secondary analyses of a number of important data sets. For example, his 1976a article provided analyses of data collected for the three age-cohorts in the Plowden follow-up study undertaken for the report on children and their Primary Schools in the United Kingdom. Marjoribanks' paper examined whether family environment measures mediated links between sibsize and children's cognitive and affective characteristics. A number of other analyses using the Plowden data set are outlined in Marjoribanks (1979a), for instance, an analysis was undertaken of interactions between family environment measures and child intelligence in the prediction of achievement (see also Marjoribanks, 1979b). His analyses of secondary data also included a large sample from the Netherlands (e.g., Marjoribanks & Walberg, 1976c). The latter article investigated sibsize, birth order and social-status effects on intelligence test scores.

In recent years, Marjoribanks published a series of papers (e.g., Marjoribanks, 2004, 2005) based on data collected by the Australian Council for Educational Research (ACER) for the Longitudinal Survey of Australian Youth (LSAY). The LSAY project involves a series of follow-up data collections on youth moving from upper secondary school to post-secondary education and work in Australia. The samples included youth from Anglo Australian, European (Greek, Italian, Netherlands), Asian, and Middle East backgrounds. The LSAY studies provided a fertile field for Marjoribanks to undertake investigations about influences on a number of educational outcomes in a succession of publications. An example from these publications (Marjoribanks, 2005) is discussed below.

As already highlighted, a significant strength of Marjoribanks' approach to research was that it was hypothesis and model driven. In turn the results were used to clarify and develop further the guiding conceptual framework. This was a reason for the evolution of theoretical models throughout his career. His research publications often took up separate parts of his guiding theoretical model rather than providing an overall assessment. It is not possible to comment here on the extent to which his own analyses confirmed his model and to trace the effects of these results on his theoretical thinking. Instead, two examples are highlighted.

The first example is his analysis of young adults' educational attainment from the Adelaide study, as reported in Table 8.1 in his 2002 book. The Table presents a series of regression analyses beginning with measures of the family cultural context in the first model. Then family social context measures were added in the second model. School and parent support were included in the third model and the final model added students' educational and occupational aspirations.

When all variables were included, only three maintained a significant effect: the two variables about student aspirations and a third variable that measured student reports of the importance of school success and their efforts to achieve success. The results showed substantial mediation of family and school effects by student aspirations and effort. This example yielded strong support for his 2002 theoretical model that the effects of family and school structures and capital on outcomes were mediated by student characteristics.

The second example asked parallel questions but was derived from the LSAY project. Marjoribanks (2005) investigated contributions of family background and adolescents' educational aspirations to educational attainment as young adults. The results in Table 1 of that publication showed that when all variables were entered, student aspirations made a significant independent contribution to educational attainment. In addition, however, ethnicity retained strong effects, as well as gender, family social status, and interactions between social status and ethnicity. This set of results confirmed partial mediation of family background by student aspirations. However, consistent with his 2002 theoretical model, there were also direct effects from family background to educational outcomes. The results were also consistent with his decades of effort to emphasise the effects of **differential** environmental contexts through the study of interactions among environmental variables. In this case, for example, ethnic group differences in attainment for youth with high aspiration levels occurred for young adults from higher social status families and not for those from lower social status families. Marjoribanks concluded that "family social status and ethnicity combine to provide varying educational experiences for young people" (2005, p.111). His analyses of the LSAY data also supported a conclusion that the same environment might not have the same effect on individuals. One reason for this is that individuals might interpret their environment differently and thereby engender different outcomes.

OVERVIEW OF RECOGNITION AND OTHER CAREER CONTRIBUTIONS

Throughout his career, Kevin Marjoribanks' appointments and recognition from professional societies supplies further evidence of his achievements and standing among peers. Marjoribanks was elected as a fellow of a number of international and Australian professional societies in fields extending from education to statistics and the social sciences. This is testament to the breadth of his knowledge and the scope of his scholarship. His fellowships were as follows: Royal Statistical Society (1997), Academy of Social Sciences in Australia (1982), Australian College of Education (1983), and the International Academy of Education (1997).

His academic and editorial appointments are also evidence of his achievements and standing. He was appointed as Professor of Education at one of Australia's leading universities (The University of Adelaide) in 1974. This was only four years after completing his PhD and is consistent with the impact and volume of his scholarly contributions in the short period from his graduation. Equally significant was his tenure as Vice-Chancellor of the University of Adelaide from 1987 to 1994. Following this period as Vice-Chancellor, he returned to his position as Head, Graduate School of Education at the University of Adelaide for the remainder of his career.

His editorial appointments are also important as part of his contribution to scholarship and as recognition of his standing. He was a Foundation Editor of the *Oxford Review of Education* in 1974 (again, only four years after completing his PhD). He took over the editorship of the *Australian Journal of Education* in 1981 at a difficult time for the journal and contributed significantly to its re-establishment as the pre-eminent educational research journal in Australia. Finally, his appointments as visiting scholar to universities such as the University of Oxford, Stanford University and Harvard University during his career further demonstrate his standing in the international education community.

SUMMARY REFLECTIONS

A consideration of Marjoribanks' academic career reveals a core focus that was sustained over more than four decades. During that time he made a number of seminal contributions and established himself at the leading edge of knowledge in the field of inequality in educational outcomes. Inherent in this were the contributions he made in areas such as the analysis of family environments, environmental processes, data analysis strategies, the conceptualisation of causal processes in the effects of environments on educational outcomes, and linked to the latter, the mechanisms of contextual influences.

His research and theoretical advances through model building were always data-based. He provides a model for educational research in his attention to the use of hypothesis based research, usually stemming from overall theoretical models. The way in which his research career was devoted to the development and testing of ever more comprehensive models of links between environments and educational outcomes represents a paradigm for the long-term conduct of educational research.

A feature of Marjoribanks writing, and also his public presentations, was the clarity of his language and communication. His PhD supplied the first evidence of a great ability to capture and express ideas with simplicity and precision. Part of the value of Marjoribanks' scholarship arose from his ability to master a number of areas of intellectual endeavour as well as large and complex bodies of knowledge spanning different disciplines. His work, for example, depended on the command of at least the following: educational research, multi-method research strategies, data analysis, educational psychology, educational theory, and sociology.

Marjoribanks' work profoundly shaped and will continue to shape research on learning environments, inequality and factors contributing to educational outcomes. He provides an exemplar for anyone wishing to set out on a significant career in educational research. He was a modest man, of humour, and wisdom with an ability to deal with great complexity. He combined this with a deep-felt concern for and commitment to education as an agent in the human condition and in children's life chances.

Something of the man and the themes and issues underpinning his life-long devotion to the analysis of inequalities in educational outcomes might be revealed by the last two paragraphs of his 2002 integrative book. Here he draws on Carson McCullers novel *The Heart is a Lonely Hunter*, a story about young Mick Kelly in a small Southern US town, experiencing discrimination, hardship, and lack of opportunity. It is about inner isolation, poverty, and environmental entrapment. Mick Kelly lives in two worlds or rooms. One is the inner room of plans, foreign countries and the music she loves; her imagined songs and the symphony of her life. The other is the outer room of school, family and everyday life. The tragedy of Mick's life was that because of deteriorating economic circumstances, her inner room was all but closed when still young. In the last paragraph of his book, Marjoribanks makes a plea for parents, teachers and members of the community to keep alive the "inner room" of children's lives. He saw his context theory of students' school outcomes as helping to make that possible.

Marjoribanks' research and theoretical developments placed students own hopes, plans and ambitions at the forefront of influences on educational outcomes. In turn, he saw these hopes, plans and ambitions as arising substantially from the environmental processes and influences of families and schools. In drawing attention to the "inner room" at the end of his book, Marjoribanks was possibly highlighting an element of his own world that was so much and for so long immersed in the inner room associated with the challenges of research, scholarship and the development of theoretical models. The value of his contributions is reflected in the fact that his own plans and aspirations for educational research were able to reach fruition. Implicit in attention to the inner room at the end of his book is a plea for others interested in advancing

scholarship about inequalities in educational outcomes also to actualise the ambitions of their inner room. As with Marjoribanks, this will require dedication, persistence, and the mastery of a broad spectrum of scholarship in a number of disciplines.

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