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The Case for Longitudinal Survey Research in Social Science Analysis in South Africa

Introduction

The central role of surveys in social science research has long been recognised. Surveys have provided rich data about the extent of inequality in places such as South Africa and Brazil. Surveys have also expanded our knowledge about demographic, social and economic and other variables, and have provided critical data on the linkages between variables. However, although the survey literature distinguishes between cross-sectional and longitudinal designs most surveys in South Africa are based on cross-sectional designs. The number of cross-sectional surveys that report on voter preferences, quality of life concerns and on individual perceptions of crime has indeed increased substantially over the past few years as the scope of policy studies has widened. This growth in survey research output has occasionally been accompanied by methodological reflection on the methods and techniques used during such surveys, and also, on the veracity of some conclusions. This ferment has not extended to longitudinal studies. Although cross-sectional data have enhanced our understanding of social behaviour in South Africa, this paper argues that much can be gained from longitudinal surveys and that their absence from the policy arena reveals a distinct shortcoming in our knowledge and analysis of emerging trends and social dynamics.

The role of cross-sectional surveys in providing vital population data is well established in the area of policy studies. For example, South Africa's current population document draws liberally from the results of some recent national household studies such as the South African Living Standards Survey (Saldru, 1994), the Kaiser Health Foundation Research Project (CASE, 1994) and from the 1995 October Household Survey (CSS, 1997). The importance of the Living Standards Survey (LSS) and the October Household Survey (OHS) is evident from their prominent use in government documents that engage with poverty and the level and nature of inequality in South Africa. (May, et al, 1998; Department of Welfare, 1998) These valuable studies provide key contemporary data on South African households. However, their limitations are similarly immense as the survey results are confined to a specific point in time. Furthermore, since population characteristics constantly change, the results of these studies are not cast in stone. This raises the relevant issue of measuring social phenomena over time in a single study – the objective of a longitudinal study.

One example of a longitudinal study in South Africa is the Birth to Ten project in which a birth cohort is being followed over a ten-year period in order to monitor changes in their lives. (Yach, 1993) In this survey the same respondents (barring right censored cases) will be interviewed at different times during the study. In this, the Birth to Ten study fits the typical description of a longitudinal research design: research in which (a) data are collected at two or more different points in time; (b) the same sample (either a panel or cohort sample) is interviewed at distinct points in time; and (c) data from the respondents (survey participants) are compared across these time points in order to monitor patterns of change and promote social understanding. (Duncan and Kalton, 1987) This enables one to assess the changes that occur between time points and to relate these changes to background characteristics and events that either occur before the study commenced or occurred between measurement points. Thus, longitudinal surveys are well suited to (a) the analysis of the direction between relationships; (b) to research that is concerned with life cycle transitions; and (c) to research that determine net and gross changes in social phenomena. This is either done in a prospective or retrospective longitudinal study. A prospective design refers to the study of current trends. By contrast, a retrospective longitudinal design collects data on prior events and looks back over the lives of respondents.

Longitudinal designs are accordingly geared towards describing patterns of interactive change in the sample that is followed. This is inter alia done by relating changes in age to changing income and to the respective time points at which income levels are measured. In this sense longitudinal studies involve the study of a process of change over a period of time and are concerned with dynamic, rather than static phenomena. Such trends can also be observed by comparing the results of surveys or censuses that were conducted in separate years, or through data that were obtained via retrospective questions. However, although such data are longitudinal or sequential in nature, a longitudinal study collects chronological data on the same individuals, and provides information on the life cycles of the same people. Thus, the annual October Household Survey conducted in 1993, 1994, 1995 and 1997 by the Central Statistical Service fits the profile of a 'repeated cross-sectional design' (Menard, 1991) as the same or fairly similar questions were put to different respondents from 1993 to 1995 and the information was collected at different points in time. The six monthly MarkData surveys on voter intentions in South Africa similarly fits the profile of a repeat survey that analyses voter trends.

Why do we need longitudinal data?

1. The advantages of longitudinal designs over cross-sectional and repeat surveys

This question is best answered by comparing longitudinal and other designs. Here the difference in time points is crucial in understanding the relative advantages of a longitudinal design. This is evident from the measurement of gross and net changes from longitudinal data which is not possible from cross-sectional surveys, as these provide a one point in time description of population features. Repeat surveys, by contrast, offer a distinct advantage as they enable us to capture the net effect of changes. In the case of a voting population such net effects might be expressed as an overall increase or decrease in the number of people who report an intention to vote for a specific party. By revisiting the population and posing fairly similar questions repeat surveys enable us to collect information that can easily be compared. However, because repeat surveys collect data from different respondents we are unable to determine the gross changes in the intention to vote.

This limitation is clear from the inability of cross-sectional and repeat surveys on voting intentions to provide detailed information about respondents who are undecided about whether they will vote in an election. Although recent survey results for example suggest a significant decrease in electoral support for the National Party, we do not really know whether this decrease is related to people deciding to change their political affiliation, or whether this loss in support is linked to greater uncertainty and indecision among former National Party supporters. Repeat surveys, such as those conducted by MarkData, also fail to indicate whether the same respondents have remained undecided over time, or whether, and why respondents who were undecided during one survey round had decided to express support for a specific political party during a subsequent survey round.

By contrast, longitudinal studies, by following the same individuals over two or more points in time, enable us to a) assess net changes in party political support, and b) to determine which individuals have changed party affiliation. In this sense longitudinal data permit us to monitor gross changes in political voting patterns and to determine the specific characteristics of voters who have switched their votes between parties. Such characteristics and vote switching are normally hidden in the aggregate ratio in cross-sectional and repeat surveys. Similarly, in cases of near zero change within a rate, such as in the case of the number of unemployed persons remaining more or less the same over different time periods, longitudinal surveys enable us to determine how and why the rate remained unchanged. Thus, zero or near zero change may hide gross changes in employment patterns. (Duncan and Kalton, 1987) This may indicate that the rate of replacement in the population between job gains and job losses were equivalent, but that zero change, or near zero change, was unrelated to a

static population feature. Cross-sectional surveys do indeed often provide data that reveal little change from one year to the next in employment totals and in the number and characteristics of poor households - implying that the same households remain poor over time. (Hill, 1992) By contrast, several longitudinal studies point to considerable variation over time among poor families and households and reveal that poverty represents a transitory state for some households. Thus, some households typically move between states of poverty; others move from a state of poverty to relative affluence; others slide into states of poverty, and yet others remain in a persistent state of poverty. (Duncan, 1992; Quillian, 1996)

Longitudinal surveys further enable us to detect and monitor variations and trends among individuals, as in the case of variations in salary among temporary workers. Here the value of collecting data at several points in time is immeasurable as changes in the job patterns and incomes of people can be monitored effectively at an individual level. In contrast, cross-sectional and repeat studies in South Africa typically average income across individuals in a household and try to collect average year long household income data. These data conceal variations in income during a single year as respondents are asked to respectively average their income, and the total household income over the required period. Such questions assume a constant income stream, rather than look for the typical variation that for example characterises the income sources of casual workers and those working in informal employment. Longitudinal studies, which use individuals as units of analysis, as opposed to the household that is normally used in a cross-sectional study, accordingly facilitate the collection of data that are oriented toward the analysis of variance and change within a sample.

A second distinct advantage relates to the quality of data on past events. Data on past events are obtained in cross-sectional and repeat studies through retrospective questions. Surveys typically consist of a combination of prospective and retrospective questions. Prospective data refer to results obtained from questions that deal with current phenomena, and retrospective data to results that derive from comparisons that span two points or periods of time; 'the time data pertain to and the time at which they are collected. (Janson, 1981) Accordingly, retrospective questions collect data that stretch over different time points on such demographic concerns as fertility and migration histories and often relate these data to cohort analysis.

In the case of migration or fertility histories retrospective questions often span the life of an individual. This period is subject to problems of recall and under reporting. Here researchers who use retrospective questions face the risk of losing information, or having the information distorted, or finding that their reconstructed cohort data differ from the actual experiences of real cohorts. This is evident from the current controversy over fertility data and rates in South Africa. The provisional results of the 1996 South African Census

returned a much lower than expected national population total and suggested that the rate of decline in fertility levels had been much greater than had been expected. Reconstructed cohort data from cross-sectional studies and repeat surveys previously indicated a steady decrease in fertility rates, but also showed considerable variation in fertility results between several cross-sectional studies. (Mostert, 1990; Chimere Dan, 1997; Udjo, 1997) Although these discrepancies in fertility rates probably in cases relate to survey errors such as coefficient bias, specific design effects and sampling errors, it is equally possible that differential reporting between studies accounts for some variation. Such reporting is sometimes a function of the time period over which respondents report.

This highlights a key limitation of cross-sectional studies that collect retrospective data. In order to minimise the probable losses in validity through the use of retrospective questions the period of data collection needs to be shortened. Shortening this period limits the possibility of obtaining a fairly complete overview of changes in the lives of individuals. By contrast, longitudinal studies are explicitly concerned with collecting information that spans the life cycles of individuals, and typically collect data within a fairly short period after the previous round of data collection. In this regard the American Panel Study of Income Dynamics has been ongoing since 1968 and collects new data about sample members each year. This minimises both the risk that data may be lost and the probability of the data being distorted. (Hill, 1992)

Other weaknesses exist in self reports on issues such as crime, or of the frequency of sexual contact and intercourse among teenagers, and of retrospective data in cross-sectional surveys. Evaluations of survey data have for example pointed to the effects of telescoping and of seam transitions. Telescoping involves respondents exaggerating the reported incidence of an event for the period relevant to the survey. This is done by including events that occurred before the cut off period set in the survey, and is for example common in crime-related victim surveys. A respondent may therefore report on events that occurred before the cut off point in order to emphasise the frequency of their occurrence. Teenagers may similarly report a high incidence of high-risk sexual behaviour in order to conform to peer expectations and thereby exaggerate the frequency of such events. Seam effects refer to instances in which responses cluster around certain midpoints or reflect inconsistent reporting around transitional periods. People may for example report their age as 40-years as opposed to 41-years or 42-years as 40-years suggests a mid-life point. In contrast 41 or 42-years may be interpreted as being in the middle of a mid life point.

Longitudinal studies face similar problems. Thus, it has been observed that reports of unemployment spells are high before a first longitudinal survey, but decrease by as much as 10% during subsequent surveys. (Duncan and Kalton, 1987; Firebaugh, 1997) Evaluations of individual longitudinal studies have

similarly revealed coefficient bias due to measurement error. However, telescoping and seam effects typically decrease in the longitudinal sample as respondents shift between peer groups, increase their trust of the interviewee, and become more interested in the research. This generally leads to more consistent reporting over time and a reduction in telescoping and seam effects.

Two further distinct advantages of longitudinal designs relate to the degree to which longitudinal data can take the researcher closer to uncovering causal relationships, and to understanding the way in which populations change. Because data from a longitudinal study can be compared and correlated across several time periods, it is easier to determine the direction of the relationship between variables (causal: positive or negative), and to uncover the temporal order of changes. These possibilities do not exist in cross-sectional research as the social processes that are investigated are ongoing. Thus, cross-sectional studies do not explain social phenomena, nor are they concerned with causes, or with uncovering temporal shifts. This research instead focuses on providing good descriptive data about social structures. In doing this, cross-sectional results portray household and family and other social structures as static as these structures are fixed at specific points in time. In contrast, longitudinal research commonly reveals that households and families are more dynamic. The American Panel Study of Income Dynamics has for example revealed a very high level of intra-household movement and family composition change.

Analytically, it is also easier to study temporal changes in a longitudinal study. Thus, longitudinal studies may indicate that changes in voting patterns between different time points are related to a cohort effect, an age effect or a period effect. A cohort effect refers to cohort differences that are interlinked with the particular socialisation experiences of a cohort, an age effect refers to developmental changes (maturation, aging) that emerge with age, and a period effect refers to changes that occur during a specific historical epoch. These overlaps provide room for error. For example, the observed decline in support of the National Party is currently typified as a period effect as it coincides with the political outfall of the transition process in South Africa. However, it may well be so that this decline in support is part of a gradual long-term change in political perceptions which may either be due to the effects of cohort replacements, or may be interrelated with age effects. This points to a further limitation of cross-sectional studies: their inability to separate period, age and cohort effects.

Perfect multi-collinearity instead exists in these studies between period, age and cohort effects as a 25-year-old person has lived for a period of 25 years and is a member of a birth cohort of 25 year-old's. This equation renders period, birth and cohort effects inseparable as year (1973) of birth (cohort) is a linear function of time (period) at which the survey is conducted (1998) and age (25). (Janson, 1981; Duncan and Kalton 1987, Menard, 1991; Firebaugh 1997). Hence, the implied period effect as an explanation of the decrease in support for

the National Party may be entirely misleading as age, cohort and period effects can only be separated by monitoring inter-correlations between them over different time periods, and by establishing interrelations between age and developmental and historical trajectories over these time periods. One approach would be to treat age in a longitudinal study as an indicator of a developmental difference within a cohort or age group and to observe similarities and/or disjunctures between cohorts as they reach different ages. (Menard, 1991) This firstly, makes it possible to compare different cohorts across time periods; secondly, makes it possible to separate cohort and period effects as cohorts are observed during different periods; thirdly, makes inter-generational comparisons possible on such issues as family and household differences, and fourthly, lays the basis for an analysis of developmental and historical differences in patterns across different cohorts.

The enhanced analytic possibilities mentioned above do not exhaust the relative advantages of longitudinal data over cross-sectional or repeat cross-sectional studies. They nonetheless indicate that longitudinal data offer several benefits to researchers and data analysts. These range from the better quality of data which are less prone to distorted recall, to being able to monitor both net and gross changes in social phenomena and being better suited to not only searching for temporal trends in the relationship between variables, but also to looking for explanations for various trends. However, longitudinal studies also contain several pitfalls that need to be assessed in any effort to make the case for longitudinal research. These pitfalls can be grouped into design issues such as sampling and tracing requirements, cost factors that are interrelated with the passage of time, and data analysis problems that specifically try to deal with questions surrounding the validity of conclusions and the temporal dimensions of change. Before discussing areas in which longitudinal studies could add to our knowledge of South African society we briefly reflect on some of these concerns.

2. *Problems with Longitudinal Studies*

The literature on longitudinal studies highlights three important factors that influence the choice between a longitudinal design and various cross-sectional studies. One key concern involves the cost of longitudinal surveys. Since longitudinal studies typically involve several separate cross-sectional studies that stretch over different time points and are directed at the same respondents, they are costly. It is indeed not uncommon for longitudinal studies to draw funds from different donor agencies, or for longitudinal studies to be extended because a different backer has been secured. This limits the number of longitudinal studies as long-term funding is notoriously difficult to secure. Nor is the cost of a single cross-sectional study and a single wave within a longitudinal study strictly speaking comparable. Single cross-sectional studies are in general cheaper to conduct as longitudinal studies involve a wide range of addi-

tional concerns that add to the total costs. However, this does not mean that the costs of longitudinal studies are higher than those for an equivalent number of single cross-sectional studies. Comparable field costs across these designs for the same number of surveys suggest that longitudinal studies work out cheaper, as new independent samples do not need to be drawn.

One costing problem in successive waves within a longitudinal study involves the costs attached to following the same respondents over time. This highlights a need to maintain a register of respondents and to update the register as respondents change addresses. Migration may indeed result in some respondents being lost, or necessitate a need to trace respondents, or increase the cost of administration, and so add to the total cost of the study. Further factors that add to the cost of longitudinal surveys surround decisions around the loss of sample members due to death (natural attrition) or long-term non-response. This may lead researchers to opt for large sample sizes (which increase costs) to compensate for the loss of respondents during successive samples. A problem related to coefficient bias may nonetheless develop due to the loss of sample members as the specific characteristics of sample members who were lost may differ from that of other respondents.

The cost equation is further increased by the length of studies and the frequency with which researchers return to their sample. Concerns about duration and the time interval between samples are in turn critical to the ultimate use value of the research. Problems of recall are for example best dealt with by revisiting respondents at regular intervals. The duration of a study in turn poses a potential problem with regard to establishing temporal precedence. Here the time-lag between measurements and the period the study spans is critical in efforts to establish causation as two temporal criteria have to be met. Firstly, the time-lag between variables needs to be long enough in order that it becomes possible to distinguish the start of a particular process. Secondly, the period of time needs to be sufficient to allow for change. (Duncan and Kalton, 1987; Menard, 1991; Firebaugh, 1997) Thus, time and change, the very factors that make longitudinal studies attractive, contain several costs that limit the extensive use of this method.

An additional concern revolves around the problem of accurately representing a population parameter. Several longitudinal studies follow cohorts and samples, rather than populations. Since the sample was preselected at one point in time, a constant problem surrounds the extent to which the sample reflects the changing population characteristics. This problem is aggravated by the loss of respondents due to death, or due to natural population variations that are linked to immigration/ emigration patterns and internal migration practices. Here repeat and cross-sectional surveys hold a distinct advantage as they typically involve independent probability samples at each measurement point. This provides fairly complete population estimates and in the case of repeat surveys enables us to average population values across a time period. The typical longi-

tudinal (panel or cohort) study indeed follows individuals, rather than populations. However, total population longitudinal designs and rotating panel designs compensate for this by providing accurate population representations. In the case of rotating panel designs panel members are rotated – new members such as immigrants are added, and old members rotated off – in order to ensure that the panel represents the population. (Firebaugh, 1997)

A third concern surrounds sample bias as a consequence of panel conditioning. In this case a sample (panel) may exhibit behaviour that may be the result of long-term involvement in a longitudinal (panel) study. Thus, participants in a study on electoral patterns may vote more regularly than the broader population as the election study may have influenced their awareness of voting. This response problem, and concomitant sample bias, is not however specific to longitudinal designs. It is indeed common in all forms of research, but is acknowledged as a source of concern in longitudinal studies as it potentially impacts on long-term behaviour.

3. Areas in which longitudinal studies are necessary

The preceding sections emphasised several important advantages of longitudinal research and pointed to some typical problems. Anyone reading this far should by now be in no doubt that the typical survey problems encountered in this research tradition are fairly similar to standard research problems. However, this does not mean that longitudinal designs are not more difficult to conduct. The challenge of plotting a research design that monitors changing patterns presents new difficulties which make this research more complex than designing a typical cross-sectional survey. Against this, the relative advantages of this research approach outweigh the advantages of other designs. Despite this, very little evidence exists of ongoing longitudinal studies in South Africa. In the next section we discuss two key areas in which longitudinal research could provide valuable data, and identify some issues on which longitudinal studies could improve our knowledge of South African society. In line with the previous examples we refer to the areas of household studies, and work and career patterns.

a) On Household Concerns

The household represents the most basic unit in society and is typically used as the unit of analysis in several cross-sectional and repeat surveys. Yet, despite being the subject of several studies, little is known about the changing nature of households in South Africa. Russell (1998) has indeed questioned whether survey research has adequately captured the changing nature of households in South Africa. In reflecting on this, Russell, following Spiegel, Watson and Wilkinson (1996), points to the static household picture that emerges from cross-sectional surveys on family and household patterns, and contrasts this with Spiegel, Watson and Wilkinson's micro level accounts that indicate a high

level of domestic fluidity. Based on this they conclude that African household composition in the Western Cape is fairly labile.

This geographic mobility of people was indeed previously recognised in the Living Standards Survey (Saldru, 1994). Conventionally households are defined on the basis of co-residence (sharing a dwelling), coparcenary (sharing economic resources or living together) and commensality (eating together). However, since these features do not necessarily coincide, several researchers have used one or more of these criteria to define households in cross-sectional surveys, and provided different static pictures. Whereas Clarke (1978) and Ziehl (1994) for example used co-residence as their criterion, Amoateng (1997) used co-residence and commensality. In the Living Standards Survey two household definitions were used. Firstly, all people who had lived together in a dwelling for more than 15 days out of the year, and ate together, and shared other resources from a common pool were counted as household members. Secondly, household data were collected on only those who lived under the same room for 15 days out of the last 30. The difference in numbers between these two definitions provided some index of the number of people who moved between households in the preceding year, and provided some information on the changing nature of households.

Previously, Simkins (1986) depicted some numerical changes in household composition by drawing from the results of several cross-sectional surveys and from census data. These sources enabled Simkins to track net changes in household size between African, Indian, Coloured and White households. These data, reconstructed from unrelated cross-sectional survey designs and census data, confirmed the general impression of declining household sizes. However, substantively it is unclear what the interrelationship is between the different data sets. Thus, it is extremely difficult to pin down what factors or issues account for the changing net trends in household size observed by Simkins, or to determine how much of the changes can be put down to measurement concerns and design effects.

This problem is endemic to all comparisons between cross-sectional data that stretch over time. Thus, a further concern relates to whether the time between studies is continuous or diachronic. In the former case net changes could probably be successfully deduced from cross-sectional data, but not in the latter. Although cross-sectional surveys have thus provided some evidence of changing household sizes, it is still nonetheless so that changes induced by mortality and fertility have been neglected, and that concern exists about the comparability of results across several studies. This neglect of mortality and fertility, and concern about the comparability of results, also applies to micro-level studies and data.

What then, could a longitudinal study tell us? Firstly, because such a study stretches over time the length of the study is crucial to what it could potentially reveal. What it will reveal are changes in family structure, in household compo-

sition, in economic loss or gain, in geographic moves, and in income trends. It is indeed so that most people do not remain in their original households; some marry or divorce and leave, some die, some new additions enter through birth, or marriage, or remarriage, and some others have "false starts" (leave, but return). By following individuals in households longitudinal studies are therefore able to reveal the cumulative level of such household composition change.

At specific moments one could indeed use such data to study the impact and effect of specific processes and policies on household changes and household formation. Here the current housing policy springs to mind. Oral testimony from several squatter and informal settlements in the Western Cape (Palmtree, Kalkfontein, Vygieskraal and Pooke se Bos) indicates that many squatters anticipate household and income splits when their new subsidised houses have been built. Where two or more generations co-reside, squatting will indeed continue for the second generation who intend to use their status as squatters and families to qualify for future housing. The first generation will move out to take advantage of the housing opportunities. This reverses typical movement patterns as second generation household members normally leave housing structures. Thus, far from solving the squatter problem a possible effect of the subsidised Million Home Project is 'household and income decompression'.

One likely consequence of household splitting that cross-sectional studies should continue to pick up involves declining household sizes. But, typically cross-sectional studies are not concerned with the way in which, or why, and how these households change, or in relating changes in household size and membership to the effects of other social processes. Cross-sectional studies are further unlikely to adequately capture this process of household sifting, despite being the source of Morris and Hindson's (1997) description of household and income decompression in African residential areas in the Durban region. By relating chronological age to changing household patterns longitudinal data in contrast could provide linkages which span developmental cycles in the lives of individuals and tap into links between development cycles and household formation. Furthermore, by following individuals such data illuminate causal links between labour market work, cohabitation, marriage and household formation. Currently, households are instead examined after they have been formed. Little is accordingly known about the inter-linkages between specific processes and household formation. Longitudinal studies could therefore help us fill this void by following the same individuals over time.

The net achievement of longitudinal studies could indeed lie in tracer studies on inter-generational transmissions of behaviour and changes. These should indicate that households are more dynamic than the picture painted through cross-sectional studies. Here longitudinal designs could follow individuals (household members) as they leave households and monitor their behaviour and characteristics in new households. This indeed happens in several longitudinal studies in other countries. Thus, it would be possible to use survey data as

measures that track social mobility across generations, or to monitor inter-generational and cross-sibling characteristics and household practices away from their parental home.

Other fruitful sources of data collection could include information on development changes in the life cycles of household members. Such data could be linked to other developmental phases such as new household formation, at later points. One area of interest could concern the influence of early childhood experiences on later patterns of household formation. In one such study, from the American Panel Study on Income Dynamics, researchers found that 'girls in mother-only families are at greater risk of early household formation, and that residential moves late in childhood further made girls more susceptible to early household formation... for boys, parental divorce at any stage of childhood encouraged early household formation'. (Hill, et al, 1996) Such conclusions cannot be drawn from cross-sectional studies.

Furthermore, by interrelating time dimensions to the study of household formation, researchers are implicitly able to move beyond the limitations of cross-sectional and micro-level research in which new household formation is presented as a function of age, income, marriage and other indices of single persons. Here inferences about household formation must be drawn from snapshots of one moment in time. By contrast longitudinal studies hold the further advantage of being able to describe and evaluate the interrelationship between these variables and other development processes in looking at household formation.

b) On work and career paths

Another area in which valuable data could be collected is work history. One typical approach that has enjoyed some currency in South African sociology has involved the collection of 'longitudinal' life histories that tell the stories of workers under apartheid. This approach is evident from a partial survey of sociology and history journals and books that contain scattered reports on worker profiles, and from attempts from within the labour movement and from academics to link the life histories of migrant and industrial or craft workers to capitalist processes. Examples from within the union movement include Qabula's (1989) life history and from the field of sociology Webster's earlier (1985) biographical sketches on some informants. In the field of history van Onselen's acclaimed writing on land and labour has brilliantly demonstrated how a life history might provide insight into broader sociological and historical processes and has shown how description of the passage of time and of interlocking social processes can enhance critical understanding. (1995) However, two criticisms can be levelled at these writings. Firstly, van Onselen's work and other life histories, while elegant in conception, are somewhat vulnerable to critical historiography and methodological reflections centering on the use of a single case and/or the use of case studies. Secondly, these one-off historical and sociologi-

cal snapshots tend to provide accessible and necessary, but insufficient information to fully comprehend changing social patterns.

A second research interest in the field of work has focussed on changing labour process dynamics and worker experiences of democratic interaction within the workplace and in shopfloor structures. Here the Sociology of Work Programme at Wits has added considerably to our understanding of the labour market and the changing nature of work relations in South Africa. Much of this research has been conducted in close collaboration with the FOSATU/COSATU labour tradition and has mainly used interviews, and latterly, focus groups, or a combination of mixed-method quantitative and qualitative approaches as resource material. These efforts reflect an increasing tendency to study processes of change by collecting detailed information from a few cases, while retaining the basic components of a snapshot study.

The typical longitudinal research endeavour departs radically from historical, sociological, social work and anthropological life history and case study approaches. Generally, longitudinal research is concerned with sequences and development trajectories and couples these to means, ranges, distributions, and inter-correlations (stability and change in patterns of correlations over time). However, it is also concerned with individuals and provides ample opportunity to reconstruct and compile individual and aggregate case histories - thereby enabling us to relate the same data to two different research traditions: statistical, and individual life histories. This combination may indeed provide crucial information in several under-researched areas in South Africa such as ageing and retirement, stratification and social mobility, occupational mobility and unemployment, or on female labour force participation and life-cycle labour trajectories, and on the effects of changing welfare policies on work searches and behaviour. It seems clear that a definite need exists in these areas for prospective data that for example provide insight into the effect of retirement on ageing. Rising life expectancy figures for South Africa suggest that we should in future focus more societal attention on the needs of the aged. Thus, longitudinal studies that track work patterns until retirement and assess the changing experiences and needs of the aged after retirement may indeed provide valuable future information that could feed into policy initiatives.

These gaps in our knowledge on the interrelationships between age and work extend to data on career choices and career paths. Many university students in the fields of Law and Education presently experience lengthy unemployment spells after graduating. This experience is also common in other professions and has contributed to individuals plotting different career trajectories. Course and module changes at universities are similarly opening new job opportunities to students in line with broader changes in employment patterns, and in areas in which skill shortages are perceived to exist. Here it seems crucial to initiate longitudinal studies in order to monitor what happens to former students over extended periods, and to follow their career paths. Such sug-

gestions have indeed floated through several universities from time to time, albeit within the frame of cross-sectional designs. Where such studies have been attempted, these have invariably either comprised of cross-sectional surveys that use retrospective questions to collect data, or of prospective cross-sectional surveys that have tried to assess the future job expectations of students.

The limits of these mainly Human Sciences Research Council designs have already been discussed. So too the advantages of longitudinal designs over cross-sectional studies. In the last section we point to areas in which longitudinal studies could be of use in the policy arena.

By way of conclusion

The argument in favour of a more extensive use of longitudinal surveys rests on the advantages that studies that stretch over time present with regard to monitoring changes, and the emergent prospects of separating cohort, age and period effects, and explaining social phenomena. Given these advantages the absence of longitudinal data from the policy arena appears perplexing. Results from household studies such as the LSS and OHS reveal little that is not implicit in census data. The case in favour of longitudinal data in social science areas such as household studies and work and career practices accordingly seems compelling if we desire to study patterns of change.

The potential policy spinoff could be enormous in the field of welfare where, as one example, a clear need currently exists to monitor the effects and implications of changes to state child maintenance grants. The potential impact of these changes on Coloured households has been alluded to in several response papers to new legislative and policy shifts. Here, longitudinal studies could show how Coloured families and households respond to the new situation. It might well be that Coloured female fertility levels decline further, or that children start working at early ages to compensate for the loss in income, or that households change in different ways to adjust to the smaller grants, or that Coloured women join the labour force in larger numbers, or that men take greater responsibility for their putative offspring. The effects of a nominal amount for first time African recipients are, of course, also, of great interest.

These effects could be determined through other research sources. However, they are more likely to be revealed through longitudinal research, which in addition holds several added advantages. This does not mean that an either/or choice exists in terms of selecting the more appropriate research approach. Such a perspective would merely further dichotomise knowledge between the linear and the cyclical. A more fruitful approach might indeed lie in combining the two approaches. It is so that many repeat surveys include small panel or cohort samples that are followed over time, and that some longitudinal studies compile broader cross-sectional data. However, if a choice

between the two were to be made, then, in sum, it is longitudinal rather than cross-sectional data, that will provide the more detailed and useful information.

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