1. Case Study and the Psycho-statistical Paradigm

The social and behavioural sciences, which have been central to educational research, were cast in the mould of the physical sciences, whose achievements in the eighteenth and nineteenth centuries had attracted unreserved respect. The premise adopted was that the phenomena of individual and social behaviour are in principle explicable in the same terms as natural phenomena and thus are accessible to broadly the same methods as observation and experiment. In its strongest form this can be taken to imply that understanding of social phenomena can be expressed as laws: powerful predictive generalisations, bearing on, and integrated by, general theory, which hold - other things being equal - for all relevant cases.

There arise, however, situations in which so many significant variables are at play that the researcher cannot isolate and control them and apply his findings in real settings. A good example is agriculture, where seed strains, the chemical composition of soil, fertilizers, exposure and aspect, weather and the manner in which seed is planted and treatments are applied all interact to influence the resultant crop. In such circumstances the natural reaction is
to try to select a number of instances which one judges to be representative of the various situations: for example, to test a seed strain in different soils, weather and so forth.

The difficulty is that we cannot know how well we have judged the representativeness of our sample of instances, particularly in situations where many variables are at work and where our theoretical understanding is not solid. The classic response to this problem, set out with great elegance by Ronald Fisher (1935), is to draw from the population to which we hope to apply a predictive generalisation a random rather than a judgemental sample. A random sample is drawn on a chance basis so that each instance in the population about which we wish to generalise has an equal and independent probability of being selected. The beauty of this procedure is that it allows the use of the statistics of probability to assess the likelihood that an observed difference between experimental and control groups may be due to mere chance and that observations within a sample can validly be extrapolated to a population. In short, it allows statistical inference.

This approach to educational research has been called 'the psycho-statistical paradigm' (Fienberg, 1977), and that is the term adopted in this paper.

Much educational research has been in this pattern, and at a certain point the term evaluation came to be commonly used for such attempts to conduct a comparative appraisal of alternative courses of action with a view to endorsing one rather than another. The stance of those who adopted the psycho-statistical paradigm in curriculum evaluation was to treat that which was to be evaluated as an experiment and to compare the results of that experiment with a control, using the sampling methods briefly described above. Thus, the new curriculum might be found superior or inferior to the established curriculum it sought to supplant.

Experiments along these lines that were designed to guide the choice of curricula or teaching methods gradually exposed the limitations of the approach to this problem through sampling and
the application of statistics of probability. At first the reactions to this treated the difficulties as technical. This is true of the classic papers by Campbell and Stanley (1963), Brecht and Glass (1968) and Snow (1974). To an extent it is residually true of Walker and Schaffarzick's critical consideration of criteria of yield (1974).

However, it became clear that the problem went deeper than this. Statistically significant preferences for one treatment over another generally meant that in a substantial minority of cases - as many as 40% it could be - the treatment which showed better overall was in fact worse. The attempt to pursue this problem through the mathematical analysis of trait-treatment (aptitude-treatment) interactions (Anderson et al., 1975, 444-449) was disappointing, as was signalled by an important paper from Cronbach (1975).

In essence, the emerging problem was: how can we apply research to practice in a field of social action where the broad trends revealed by statistical analysis of results are not in themselves reliable guides to action and do not allow us to establish firm laws which could guide action. It is what is known classically as the problem of external validity. Here is Snow (1974) facing this problem:

There are three steps in making inferences from empirical data. One step requires generalisation from the observed sample of students to the accessible population from which it was drawn. A second step requires generalisation from the accessible population to the target population with which one is ultimately concerned. The third step interprets the meaning of the generalisation with respect to the substantive phenomena under study. The first two steps are statistical; they rest on the assumption of random sampling of students from populations. In other words, the sample is assumed to be representative of the
accessible population, which in turn is assumed to be representative of the target population. But random sampling is rarely attained for the first step and never for the second. Usually neither population is even adequately defined or described.

As pointed out by several previous writers (Lindquist, 1953; Cornfield and Tukey, 1956; Bracht and Glass, 1968) the investigator need not be overly troubled by these statistical steps, particularly the first step. He can at least generalise from his sample to a hypothetical accessible population like those observed. Regarding the second step, Bracht and Glass (1968) note that it

\[\text{\ldots\ldots\ldots can be made with relatively less confidence than the first jump. The only basis for this inference is a thorough knowledge of the characteristics of both populations and how these characteristics relate to the dependent variable of the experiment. (p6)}\]

(Emphasis added).

Thus, the key to generalisation in both steps is thorough description of student (or possibly school - LS) characteristics. (p270)

In practice, it is quite impossible to meet this demand for description except through detailed case studies, and, when such case studies are undertaken, they dominate the results based on sampling. It is the case study data rather than the sample data that come to form the basis of judgement. Even the measurement results yield more when treated by case. We do better to see ourselves as concerned with a collection of cases than to treat that collection as a sample of a population.
Starting from the standpoint of the mainstream psycho-statistical tradition, the line argued in this section accounts for relatively greater interest in case study that shows itself, for example, in the meetings of the American Educational Research Association. But there have always been educational researchers working through case study - from the child study movement onwards - and they would not accept that the case for case study rests on the breakdown of the psycho-statistical paradigm.

The natural strategy for those who start from the assumptions of observational - rather than experimental or survey - approaching is to try to build understanding towards theory through the patient cumulation of and comparison of studies of cases. The emphasis on case study can be seen as a return to close observation.

2. Precedents and Traditions in Educational Case Study

Since most educational researchers have been trained in a social science tradition, it is natural that in case study they turn to social science precedents. Here the central tradition to which they have been attracted is that of ethnography. Indeed, in England - and even more in America - case study is frequently called 'educational ethnography' or 'school ethnography' - misleadingly in the view of Harry Wolcott (1980) for only some case study is ethnographic.

Ethnography, a word that has changed its meaning within the history of social anthropology, was forged as a technique in the study of preliterate societies and covers the process of fieldwork and its reporting. Characteristically the ethnographer studies in depth some social situation or culture with which (s)he is unfamiliar, using participant observation. In reporting (s)he generally reduces the data and gives it form by the use of concepts or theoretical constructs (e.g. culture, kinship, rites of passage) rooted in and defined by the tradition of social anthropology. Generally, the ethnographer studies one case at a time, largely because it is virtually impossible to achieve participant observation in two cultures simultaneously, but partly also because
of a respect for the structure of each culture, structuralism having been a major influence in social anthropology.

Assimilated to this tradition in modern 'educational ethnography' has been that deriving from the Chicago school of sociologists who, using journalism as a model, undertook something close to participant observation in urban sociology in a department of sociology whose theoretical interests were engaged in creating a standpoint, deeply influenced by G.H. Mead, that came to be known as symbolic interactionism. Ethnomethodology and phenomenology, which have also been influential in educational research, have drawn on the Chicago school, the first influenced by ethnography and the second by Schutz, and through him by Husserl.

Among the classic English works drawing on - though sometimes critical of - this broad tradition are: Hargreaves' *Social Relations in a Secondary School* (1966); Lacey's *Hightown Grammar* (1970); Willis' *Learning to Labour* (1977); King's *All Things Bright and Beautiful* (1978); and Ball's *Benchside Comprehensive* (1981). In the United States one might cite: Becker's *Boys in White* (1961); Smith and Geoffrey's *Complexities of an Urban Classroom* (1968); Smith and Keith's *Anatomy of Educational Innovation* (1971); Wolcott's *The Man in the Principle's Office* (1973) and *Teachers versus Technocrats* (1977); and Peshkin's *Growing up American* (1978).

What is characteristic of these studies is protracted immersion in the cases studied - often for periods longer than a year. Since participation in educational settings is for the most part highly controlled, it seems doubtful whether the classic participant role is available, but all these researchers, except King, seem to conceive their fieldwork in terms of participant observation, and King's practice is not so very different from that of the others when involved in classroom observation. The limitations on participant observation in education are largely dictated by the circumstances of the case, and the time spent in fieldwork on site is comparable with classic participant observation studies.
A contrasting style of fieldwork was developed as a result of the adoption of case-study approaches in curriculum evaluation. The ethnographic approach had to be adapted partly because in evaluation the research enterprise is forced to move at the pace of the action it is commissioned to study, and partly because the study of one curriculum project often demanded the simultaneous study of a number of schools. 'Condensed fieldwork' (Walker, 1974) might involve anything from three days to three weeks on site and the longer period would probably comprise several visits. In the condensed case study, the balance of fieldwork naturally swings from observation towards interviewing. Even when observation is highly valued, it is restricted by time and therefore limited in penetration. The emphasis on interviewing has generally moved fieldworkers towards using tape recorders, and, when resources allow, tapes are frequently transcribed. The short time on site and the accumulation of records means that interpretation and criticism of sources is to a considerable extent deferred until the fieldworker can review the recorded evidence. Stenhouse (1978) has accordingly compared such case study to contemporary history.

Not surprisingly, the instrument of condensed case study forged in evaluation is now being imported into research. The result is 'multi-site case study' in which a number of cases are studied at the same time, usually with a focus on some practical or theoretical issues. It will be apparent that such multi-site case study is in essence the alternative to the study of samples proposed at the close of the first section of this paper.

The pioneer work in this genre - at least in the line of development under discussion here - is Stake and Easley's 'Case Studies in Science Education' (1978a, 1978b), which is based on case studies conducted in eleven schools. Not surprisingly, being a first effort in a new paradigm, it had shortcomings, the most notable being that the case studies were written by individual case workers so that those responsible for drawing the research report together had little contact with the data behind the studies. This led to a reluctance to compare and generalise across cases, increased by Stake's conceptualization of 'portrayal' (1972) as the essence of
case study. The researchers really wanted the reader to face
the anthology of cases and do his own thinking.

Stenhouse and Lebhardt's current multi-site case study
programme investigating the development of the capacity for
independent study among 16 to 19 year-olds with particular
reference to access to and use of libraries, is working in
24 schools or colleges. The contracts with the 16 fieldworkers
call for indexed 'case records' of data rather than for case
studies. Fieldwork is budgetted at 12 days for each school.
It is too early yet to know what the successes and failures of
this project will be, but the situation looks promising.

There is a fourth strand in the case-study movement that
should be mentioned here though its particular problems cannot
be discussed adequately. Both evaluative case study and multi-
site case study apply to educational practice through the judge-
ment of practitioners. The 1968 proposal for the Humanities Project
evaluation (Stenhouse 1982) observed:

the case-study materials we shall be using to
evaluate our work will also be broadly descriptive
of the work in the classrooms of our trial schools.
They thus provide an opportunity for those teachers
who wish to embark on inquiry-based humanities
teaching to understand the problems and opport-
unities facing them ......... in short, they serve
the purpose of diffusion as well as of evaluation.

Diffusion in the Humanities Project came to involve teachers in
studying their own teaching and researching their own cases. It
was an action research project based on case study.

There followed from it two projects involving classroom
action research, the Ford Teaching Project, directed by John
Elliott (Ford n.d.) and the project on Problems and Effects of
Teaching about Race Relations (Stenhouse et al, 1982a). In
each of these teachers studied, or participated in the study of,
their own teaching, not to generalise to other situations but to illuminate their own case. In Ford T an outside researcher supported the teacher by observing in the classroom and by interviewing pupils, thus securing a 'triangulation' of the viewpoints of teacher, pupil and observer. In the project on race relations Robert Wild refused to enter the classroom he was studying and instead gathered tape recordings made by the teachers and interviewed them about them. Classroom level case studies have caught on in England. The Classroom Action Research Network which followed from Ford T is only one of the associations of teachers interested in this kind of work (Nixon 1981).

This, however, is only one aspect of the teacher-as-researcher movement. Increasingly, teachers are undertaking case studies not simply of their classrooms, but of their schools. This, of course, involves them in interviewing and observing colleagues. There are now quite a number of universities accepting work in this tradition for master's and doctoral qualifications. Of course, Hargreaves' classic study was conducted while he, a sociologist, was teaching in the school he studied. But he did clearly see himself as a sociologist first and only secondly a teacher. Practising teachers studying their own schools are natural participants whose problem is how to become systematic observers.

* * *

Four broad styles of case-study work have been distinguished and briefly reviewed in this section:

(1) the neo-ethnographic: a single case studied by participant observation at length and in depth;

(2) the evaluative: a single case or group of cases studied at such depth as the evaluation of policy or practice will allow (usually condensed fieldwork);

(3) multi-site case study: based on condensed fieldwork undertaken by a team of workers on a number of sites and
possibly offering an alternative approach to research to that based on sampling and statistical inference:

(4) teacher research: classroom action research or school case studies undertaken by teachers who use their participant status as a basis on which to build skills of observation and analysis.

The problems of the fourth of these are so distinctive that they require special treatment and are consequently not covered in the following sections of this paper which deal with the conduct of case-study research.

3. Selecting Schools and Negotiating Access

The problem of selecting cases does not always present itself to the researcher. Most ethnographic case studies are opportunistic: a matter of seeing the interest offered by a school to which one can readily gain access. When choice presents itself a lot will depend on the research interest: Smith and Keith selected an innovative school for their Anatomy of Innovation; Bell selected a reasonably typical school moving from banding towards mixed ability teaching for his study of secondary schooling in an English comprehensive; Foshkin for his study of education and community survival chose a small town and rural community that could just muster the numbers to support an American High School. Cases are always cases of something and to say that is to say that, well described, they are recognisable.

When it is possible to cover a small number of cases, the advice offered by Glaser and Strauss seems worth considering, particularly if the researcher has theoretical interests.
comparison groups also provide simultaneous maximation or minimisation of both the differences and the similarities of data that bear on the categories being studied. This control over similarities and differences is vital for discovering categories, and for developing and relating their theoretical properties, all necessary for the further development of an emergent theory. By maximising or minimising differences among comparative groups, the sociologist can control the theoretical relevance of his data collection. Comparing as many differences and similarities in data as possible tends to force the analyst to generate categories, their properties and their inter-relations as he tries to understand his data.

(Glaser and Strauss 1967, 55)

Oversimplified, look for differences in apparently similar cases, look for similarities in apparently different cases.

The natural impulse in conducting a multi-site case study in a fairly large number of cases (say ten or more) is to select cases to cover the range of variables judged to be important in relation to the theme of the study. This tends to maximise the differences within the collection of cases, but it is important to bear in mind the need to look for difference within apparent similarity. The principle should probably be to build the collection from similar pairs (or triads) of cases and to try to see that this collection of pairs covers as wide a range of relevant variables as possible.

It is worth bearing in mind that, as more and more case studies are undertaken and published, a cumulative tradition of case studies is established so that even the selection of a single case has a multi-site context. The researcher needs to take into account the existing body of case studies and to face the problem:
what to study next. The situation is familiar in such a study as archaeology, where the interrelation of opportunity presenting itself and of selection in the light of problems in the discipline is much what one might expect in educational case study.

A particular problem is encountered in multi-site case study when a range of cases is studied by a team of fieldworkers. How is one to plan the collaborative aspect of the study and hold together the approaches of the individual workers?

The standard received answer one might derive from the psychostatistical tradition is that the fieldwork be standardized to a schedule of questions or topics, but this response is dictated by the desire to aggregate data rather than to compare cases (though it is described as 'comparability'), and it certainly does violence to the idea that one should be 'responsive' (Stake) to the nature of the case. On the other hand, case study workers in a multi-site project do generally want some guidance.

There is little experience to go on. In Stenhouse and Lobbett's 24-site project on library access and independent study (in progress) the strategy that has been followed is to bring together the fieldworkers for regular one-day conferences in which they pool ideas about possible lines of inquiry in their cases that seem to them to promise significant interest. Here the line taken is that fieldworkers can profitably help each other not to miss opportunities and not that data needs to be 'comparable' in any highly developed way. Significantly perhaps, both the director and the co-ordinator of the project are interested in historical method and history commonly works with disparate sources. It goes without saying, of course, that numerical indices must be standardized if they are to be used across cases.

In Stake and Easley's Case Studies in Science Education visitation teams of experienced fieldworkers paid short visits to each site. Although this was a useful basis for exchange of ideas in the geographical conditions of the United States which forbid
regular short conferences of far-spread fieldworkers by reason of expense, it seemed difficult to establish relaxed ease of discourse between the fieldworker and the visiting team.

At the planning stage of research when the sites are being selected and the team is briefing itself, there is also a need to consider problems in the negotiation of access to the case and of possession of data.

Negotiation of access will no doubt follow different patterns in different educational systems. In England the normal procedure is to clear with the school, at least through the head and perhaps preferably through the staff meeting, and also with the local education authority, making it clear in the case of the authority that access will not be offered to information about the school (if this is the case, as it usually is). If the case study is at classroom level, access will still normally have to be negotiated with head and local authority as well as the teacher in charge.

The pattern of negotiation can, and often does, lead to a position of sponsorship. That is, the fieldworker gets access because someone within the system vouches for him or authorizes him. Under certain circumstances the fieldworker can be seen as the 'sponsor's man', and pains need to be taken to make it clear that one is not the agent of or reporting to a head or other person who has sponsored one's access to the case. In classroom research it is, of course, of great importance to ensure the endorsement and collaboration of the classroom teacher.

In addition to formal sponsorship, it is useful to have an informal sponsor (or possibly sponsors) who can reassure others without carrying formal authority. Such sponsors are often 'key informants' in the jargon of fieldwork, that is, persons with whom one establishes a close relationship making for easy conversation, so that one can refer to them for information or explanations. Important, of course, is the range of information
and 'meanings' accessible to such an informant. Key informants tend to be more crucial in extended as opposed to condensed studies, and in unfamiliar as opposed to familiar settings.

Finally, and in some respects most vexed of all, is the question of ethics and procedures governing the use of information gathered in case study. Since case study deals with information supplied by individuals about themselves, about others and about institutions involving corporate interest, the question of research into persons and of their rights over data clearly arises.

The responses of researchers to this problem range from an autocratic belief that the pursuit of knowledge (or the authority of those who commission an evaluation) justifies the gathering and release of any information without regard to the interests of those who are its subjects to a scrupulousness that would keep all first order data confidential and bar any research report in which people or institutions are recognizable.

My own convictions, supported uniformly by the immediate research community within which I work, lead to the position that all informants own and have rights in the information that they give to a fieldworker. Some of my colleagues have given a great deal of attention to the possible responses to this basic position and the problems that follow from them and these are too complex to review here (MacDonald 1974, Walker 1974, MacDonald n.d., Simons n.d., Jenkins 1980, MacDonald 1980, Greif 1980).

An important point is that, although the use of data is, if rights of possession are given to the subject, a matter of negotiated understanding or contract, it is all too easy to negotiate a contract unfair to one of the parties.
4. The Conduct of Case Studies

The conduct of a case study falls naturally into three operations:

(1) gathering and recording information, i.e. fieldwork;
(2) organizing the information about the case;
(3) writing a report or disseminating the information in some alternative form.

It might be argued that gathering information and recording it could be regarded as separate operations, but it is convenient to treat them as one, because the two processes infuse each other. It is also convenient to defer for separate consideration the particular problems of multi-site case study.

It is on this principle, therefore, that the next four sections of this paper will be organized.

5. Fieldwork in Case Study

Fieldwork is that process of evoking, gathering and organizing information which takes place on, or in close proximity to, the site of the events or phenomena being studied. The definition is intended to cover not simply the work done on site, but also that done during evenings and week-ends that are intervals within a period of on-site study.

The conventional components of fieldwork are:
(a) collecting or evoking documents
(b) observing*
(c) interviewing
(d) measuring or collecting statistics

*The neglect of photography as a record of observation in this paper is due to the writer's lack of experience.
5.(a) Collecting or Evoking Documents

In the study of the past, the evidence has traditionally been largely written or printed, and the criticism of such evidence is a major discipline of history. In form, this evidence may be statistical or verbal. Given that forgery must be detected, the evidence which prima facie has the highest reliability is that which is, as the Webbs observed, produced as a by-product of social action. 'It is,' they write, 'a peculiarity of human, and especially of social action, that it secretes records of facts, not with any view to affording material for the investigator, but as data for the future guidance of the organisms themselves.' (Webb and Webb 1897, xi). The status of such evidence is not simply that it is 'overheard' by the researcher, but also that the distortions within it are in principle detectable in terms of the logic within the case. Thus the motives for - for example - a secretary's distorting the minutes of a committee are to be looked for in the case and not in the secretary's posture towards the researcher.

This is partly true also of what I shall call 'testimony' as opposed to documentary 'records': the recording for oneself or others of what are recognized as personal reactions and reflections. The classical forms of testimony are diaries, autobiographies, memoirs and letters. Although there may be much mention of events, such testimony is essentially case-study of the self and can be distinguished in principle from 'witness' which is a matter of recording observations of events. The two are often intermingled and the questions about the feelings of witnesses which are asked in legal cross-examination are indicative of the fact that testimony can be used as a basis for a critical assessment of the subjective distortion of witness. More closely defined and elaborated distinctions can be drawn, though I shall not attempt such an analysis here.

By contrast with the documents that are by-products of the process of action, there may be documents that are products of the
research in the sense of being evoked by it from participants or subjects of a study. Such documents whether statistical - eg. estimates of the number of books in the library - or qualitative - eg. written reminiscences of the school under an earlier regime - must be criticised bearing in mind that the researcher is the primary audience in the consciousness of the writer, with all that may imply.

In most fieldwork so far undertaken in educational settings, the written documentation used has been collected rather than evoked. This is because interview is favoured as a means of evoking information partly because it saves the witnesses time and effort and partly because some researchers regard it as more spontaneously revealing, less easily amenable to impression management.

Among documents widely collected are: hand-outs produced for teachers, pupils and parents; minutes of meetings; correspondence; timetables; syllabuses; and textbooks. Some records, including the records of individual pupils, are generally confidential and not properly accessible to researchers who are not actually teachers.

It is possible that there will be visual records such as, on the one hand, architect's plans or photographs of school teams, which approximate to documentary evidence, or, on the other, videotape or film which approximate to oral evidence. In part these can be assimilated to categories of documentary or oral evidence for the purposes of critical procedures, but they require both an extension into visual criticism and a means of taking into account the intrusion of architect, photographer or film crew and the possible status of most evidence of this kind as an avowedly public record.

Though it would be a most unusual find, it is not in principle impossible that head, staff and even pupils might have kept diaries or records of their reflections, and these could, given great fortune, be made accessible to the researcher. The great historical
diaries such as, for example, that of Greville, show what a valuable source such material can be.

5. (b) Observing

By observing is meant perceiving and recording events, behaviour (including speech) or appearances in the case under study. Such observation may be fully participant (ie. filling an available participant role in the social setting observed); aspirant participant (ie. seeking to create acceptance of an unusual participant role, eg. researcher); non-participant (ie. seeking to minimize interaction with those observed); covert (ie. hidden from those observed either by such a device as a one-way screen or by unobtrusive observation without disclosure of research role).

In the fully developed participant observer role, observation of one's own experience in assimilating the culture studied is part of the data: that is to say one comes to experience, not simply to observe, the meanings in the culture of the case. This is well expressed by two anthropologists studying an African culture:

General behaviour, attitudes and values are not taught by any formal training. These are inextricably bound up with life in the society and become unconsciously adopted by any one fully partaking in social life. Even a European, when speaking the language and trying to enter into their social activities, finds himself unconsciously taking for granted values that he never had before and which are certainly not to be found in European life. They seem to follow naturally from the social situation and to be bound up with language itself. (Kriger and Krige 1943,110)

Of the work I have cited that of Louis Smith and Alan Peshkin and Rob Walker's 'Pine City' study of rural Alabama seem to me to come closest to this type of penetration with observation of one's own experience. (Walker 1978) Interestingly, Hargreaves,
a fully participant observer, is resistant to the culture in which he is immersed, while Willis who presses towards this role is kept at bay by the age gap with the pupils he is studying.

Close and thoughtful observation of others is always an important and intensive feature of participant observation, and it includes as an important element observation of the spoken word (as well as interviewing, which is dealt with in the following section). Here is the advice given by an anthropologist concerned with the study of preliterate cultures.

The ways in which you observe behaviour depends upon the style which puts you at the greatest ease and provides maximum information. Probably a combination of direct and indirect observational skills will become useful as you gain experience and knowledge of local culture. In many cultures some events are defined as private, although taking place in public, and therefore cannot be watched directly. You can expect that some forms of behaviour may make you uncomfortable or uneasy when they differ greatly from your own culture's definitions of propriety, honesty, kindness, and so on. The first ritual killing of a water buffalo left us with a sense of unease as we watched the animal thresh about in its own blood. Whether you take notes as you make observations depends upon your sense of personal ease while writing, your concern at witnessing all details of an event, and your awareness of reactions in the community to obvious note-taking. If notes are made of observations, clear indications should be used whether the notes are made at the time of the observations or later, and whether statements by participants are quotes or paraphrases. In some cultures, public note-taking is difficult due to fears of records being kept of private events, whereas in other culture little attention is given to the use of notes ...... It is helpful to be able to watch and retain a great amount of discreet data without making notes. It is useful to do a systematic study of your ability to remember certain types of data; checking a photograph of an event against notes written from memory is one means of making such a determination. On some special occasions too many different events of great complexity occur too rapidly to allow much time for writing. I found that watching a knife fight did not provide me with any time
for writing notes, especially when we were
called on to give first aid to both participants.
The substitution of photography for note-taking
is sometimes possible. The skills of observation
must be practised... A cultural anthropologist
must learn to see and retain great amounts of
detail if his work is to be meaningful.

(Williams 1967, 23-24)

This seems a fair comment on participant observation in educational
settings, even to the points about 'private' events in public,
uneasiness in the face of some experience, and rapid events that
elude recording.

As fieldwork becomes condensed, the participant observer role
in this full sense is attenuated, and observation is located in
a study where the main weight is carried by interviewing.
Observation often provides cues for the agenda of interview or
follows from remarks made by an interviewee. The crucial issue
for such condensed fieldwork is whether observation or interview
is regarded as the more valid and reliable. Do you check observa-
tion by interview or do you check interview by observation. In
condensed case study observation that involves inference becomes
much less reliable because of the observer's limited acquaintance
with the site.

5. (c) Interviewing

Observation of speech behaviour shades across into interview
as the spoken transaction becomes initiated and managed by the
researcher and as (s)he becomes the audience for what is spoken.
Many participant observers try to keep interviewing as informal
and as close to observation as possible, making their interviews
many and short and conducting them in informal settings - walking
along a corridor or driving in a car, for example. The problem
with informal interviews of this sort is their recording. More
often they are recorded from the researcher's memory in a note-
book and at the earliest possible opportunity.
In condensed fieldwork much more emphasis is placed on interviews because observation cannot play so important a role. Normally in a short period of fieldwork the main activity is a number of interviews arranged by appointment with staff and pupils in a school. This increases concern for the recording of the interview. (see Simons 1960).

Almost uniformly now in Britain researchers working in this mode record interviews on tape recorders using standard cassette tapes, usually C90. English teaching periods approximate one side of a tape, and both the medium and school arrangements tend towards the 40-minute interview.

It is generally recognised that the seating of interviewer and interviewee is important for the tone of the interview. To sit side by side or obliquely facing one another is, as it were, to look out on the world together - a good position for inviting someone to muse about their situation. To sit face to face across a tape recorder is to provide conditions favouring interrogation. In either position many researchers now place the pause button under the control of the interviewee so that he may make remarks off the record, though this is contentious.

Almost uniformly, interviews are not structured by a schedule, though of course the interviewer generally has an agenda in mind. Commonly, interviews start broadly focussed: How long have you been in the school? Has it changed much in that time? How do you see your job? and later become more specific: How many assignments do you set? Of what kind? Do they demand use of a library? Do you ask for references?

Style in the interviewer is to an extent a matter of personality. The aim is to establish a relaxed conversation - whether it be relatively formal or relatively informal. Generally speaking the taking of notes seems to be an impediment to this, though there are interviewers who do take notes (some even though they are recording). However, the normal product is a tape recording
of a conversation.

If time and resources allow, then the tapes are generally transcribed by a research secretary or the researcher. Transcriptions should be checked against the original. Where strained resources make this impossible, a good procedure is to play the tape through and make notes on pages ruled into three columns: one column contains the reference number on the tape recorder's counter (these are not compatible so one instrument must be used); the second contains a running index of contents of the tape; the third is devoted to verbatim quotations.

The process of interviewing and recording the interview can be regarded as one of creating a 'document' in the sense that historians use that word. We shall return to the handling of such documents (which we call 'case records') in the later section 'organizing the information that has been recorded'.

5. (d) Measuring or Collecting Statistics

Many of those involved in case study have been in reaction against the psycho-statistical paradigm, and have regarded case study as qualitative. This attitude is not necessary to case study: the contrast is not between quantitative and qualitative, but between samples and cases.

This implies that the creation of statistical data by measurement or the gathering and use of statistics would have to be treated as descriptive of the case rather than as a basis for generalising through statistical inference. A reading of Ball (1981) will show how for educational case study in England has gone in the use of indices. There is plenty of room for development.

The conception of social indicators is worth bearing in mind in developing quantitative indices in case study (see, for example, Rossi and Gilmartin, 1980). Webb et al have produced a useful volume in unobtrusive measures (1966). Many of the
techniques described in Tukey's *Exploratory Data Analysis* (1977) show promise for applications in case study.

6. **Organizing the Information about the Case**

We may now imagine that we have a collection of documents, observer's notes, interview transcripts and statistics. Perhaps these materials extend to 1000 pages and occupy two box files. We may be concerned to write up the case or we may be concerned with a number of cases, of which this is one. Experience clearly shows that the majority of case studies falter at this point in the handling of this 'case record' (see Stenhouse 1978 for this term). In particular, social scientists used to handling data reduced by quantitative techniques find the sheer bulk of the record they have to handle defeats them, particularly if - as is so often the case - their research is interrupted by teaching and administration.

At the moment the best solution we have to this problem is to index the case record rather as one might index a book. Our present experimental practice is to identify each page by a letter indicating document, observer's notes, staff interview, pupil interview, other interview or statistic; and also to use normal page numbers. We have found that careful indexing of this sort not only provides the researcher with a means of access to the record, but also reveals patterns that help to suggest logics for writing up.

It is good practice to make at least two copies of the case record. One can be used as a primary source behind the case study or multi-site report. The other can be a working copy for the researcher.

As a supplement to the index, researchers have often found it helpful to colour code in the margin material on topics that will provide the structure of the final report.
7. Report or Dissemination

There is not enough experience of the problem of writing up this kind of material in contemporary educational research. The examples to turn to are clearly historians. For present purposes a good starting point is to consider the use of narrative portrayal vignette and analysis. Such styles as these can, of course, be blended.

Narrative, as a form of presentation, has two great strengths; it is simple and direct to read and it is subtle. Its simplicity and directness is partly due to its being within a convention of representing the natural world that is thoroughly established and that most readers meet in the nursery, but it is also partly because, as compared with analysis, the narrative form constrains the author from presenting his own logic in the teeth of resistance from the story. He does not drag the reader on to the territory of his own mind, but rather goes out to meet him. The subtlety of narrative lies in its capacity to convey ambiguity concerning cause and effect. In telling a story the author does not need to ascribe clearly causes and effects. Rather he may select from the record an array of information which invites the reader to speculate about causes and effects by providing him with a basis for alternative interpretations. Hextor (1972) has some interesting observations on story-telling written from the point of view of an historian. In case study of the kind we are discussing narrative lends itself to the treatment of the history of institutions and of the biography of individuals as well as to reportage of transactions such as meetings or the course of events observed.

A portrayal - the origin of the word in this context is attributable to Stake (1972) - is an attempt to preserve some of the qualities of narrative in descriptive writing that lacks a natural story line. It may be compared to documentary film or radio programme or to certain forms of descriptive writing employed by novelists or journalists, as also to some art criticism that takes us round the picture. Characters, incidents and descriptions
of an environment in which they occur are juxtaposed to provide a portrayal which is interpretative and normally holistic — that is, treating its subject as a unity with dynamic interrelationships within it.

A vignette has the status of a sketch as compared to a fully worked picture. Inevitably interpretative, it is founded on the act of selection of a subject for the vignette which in itself constitutes an interpretation, and the illumination of the observation, situation or event by the selection of features whose meaning is determined by the author's interpretative stance. The art in the hands of a master can readily be observed in the extended scene settings in Bernard Shaw's plays. The element of interpretation in vignette does not necessarily rule out ambiguity if the writer is skillful.

Analysis, by contrast with narrative and vignette, debates its points explicitly, wherever possible reviewing evidence. Analysis may be couched in the concepts of the people in the case, but often its conceptual framework is contributed by its author and draws on systematic theory — in our field generally from the social sciences — in which the concepts chosen by the author are anchored. Analysis is, viewed in one light, much cruder than narrative or vignette, but it is more explicit. This tends to mean that, though it is difficult to understand at times, it is also less easy than narrative to misunderstand, and also that it favours the search for precision in terminology and in theory. Whereas the words of narrative are crowded with their connotations and derivations those of analysis tend to be starker, denotive in the light of their definitions.

Interesting problems in the reporting of case study research are set by multi-site case-study. Stake and Easley in Case Studies in Science Education (1978a and 1978b) offer in one volume portrayals of each case and in another an overview which attempts to look across the cases. The portrayals vary a good deal and it could be argued that the overview is too concerned to generalise.
as opposed to compare and contrast.

The central problem is, of course, establishing command over the large amount of information that multi-site case study generates and then finding forms in which to present information to readers. In Library Access and Sixth-Form Study Labbett and Stenhouse have case records comprising all the information gathered about 24 cases and these are indexed by the field-worker. The hope is to report in chapters treating themes such as, for example: the setting of assignments and library study, geographical factors and library study; librarians and discipline; reference and loan functions of libraries; perceptions of knowledge. One advantage of this organisation is that it lends itself to participation in the writing up by a number of the research team, each of whom might take a theme or a chapter. In principle, the procedure would be to read through the case records - a couple of weeks full-time work - and then to develop using the index an outline interpretation of a theme and gather the quotations to support or illustrate this interpretation. Finally, one would gather excerpts that seemed to question the interpretation.

In a passage quoted on page 8 above a case for case study in the evaluation of the Humanities Project was made in terms of the use of case study materials in the Project's dissemination. In the setting of conferences and workshops, case study materials such as classroom or interview tapes or transcripts can be used without interpretation to challenge interpretation from a working discussion group. Such materials were found extremely effective in training settings in the Humanities Project and later in a project on teaching about race relations. However, the difficulty of making sound judgements of inferences about material which is neither treated in its setting nor subjects to comparison across a fairly wide range of cases means that the process of working with case study materials generally serves more to throw light on one's own situation than to provide defensible interpretations of the cases studied.
8. Case Study, Theory and Explanation

A crucial issue in the development of case-study research is the role of theory in educational thinking. There is a sense in which no thinking is entirely free of theory, but there are types of research in which theory is seen as the crucial product—noteably the sciences—and other types in which theory is a groundwork on which a different kind of interpretative effort is built—noteably history and criticism.

Popper begins his *Logic of Scientific Discovery* with this simple statement:

A scientist, whether theorist or experimenter, puts forward statements, or systems of statements, and tests them step by step. In the field of the empirical sciences, more particularly, he constructs hypotheses, or systems of theories, and tests them against experience by observation and experiment.

(Popper 1959,27)

The press is towards predictive generalization: the result is a hierarchy of generalizations, the more circumstantial and testable deducible from those that are more abstract and general (and consequently more difficult to test directly). Much theory in the social sciences is rather distant from this conception, but it aspires towards it and one can see that theory in social science which met the criteria suggested for the physical sciences would be accepted by most social scientists. Zetterberg (1965,11) suggests that 'the quest for an explanation is a quest for theory', and yet in half a dozen books concerning explanation in history I find no reference to theory in the indexes. The fact is that there is an alternative, interpretative style of explanation:

We do explain human actions in terms of reaction to environment. But we also explain human actions in terms of thoughts, desires, and plans. We may believe that it is in principle possible to give a full causal explanation of why people think, desire or plan the things they do in terms of their past experience or training or perhaps in
terms of the working of their bodies. But, even if the latter proposition is true, it still does not follow that explanation in terms of thoughts and desires has been rendered superfluous, or that it has been 'reduced' to cause-effect explanation.

(Gardiner 1961, 139)

This is still too simple, but it cannot be refined here. Suffice it to say that there is an interpretative, rather than theoretical style of explanation of human action, that it can at times use ambiguity as a spur to speculation and that its generalisations will contain the qualifier often, or probably (Habermas 1974, p. 45) not other things being equal. Thus their soundness may be the subject of discussion or discourse but their refutation will be by informed judgement and not by proof.

In history, judgement is informed by virtue of the quality of the historian's 'second record'. (Hexter 1972). This second record which he brings to the 'first record' of documentary sources in order to interpret them is a specially tutored experience: an experience of, say eighteenth-century diplomatic practice or fifteenth-century agriculture.

In the matter of educational case study theoretical interpretation would appear to be most applicable when the interests of the researcher are in social science rather than in education. Such an interpretative framework is alternative to a strong second record, and rests on generalisation across from other studies of human behaviour in institutions. It may, of course, contribute new insights concerning educational behaviour. An historical style of interpretation would be more open to the researcher, the richer his or her second record of educational experience, and it would in its turn offer to enrich the experience of the reader, being accessible to those who have experience of education.

There is an interesting line of thought to be followed up concerning the application of these two styles of case study to practice or action; for theory in the context of social
science approximates episteme while interpretation in the light of a second record approximates phronesis. Such an identification leads us to the heart of the dilemma underlying one of the most famous recent attempts to relate theory and practice, that of Habermas, who points to Vico towards the opening of his own discussion:

Vico retains the Aristotelian distinction between science and prudence, episteme and phronesis: while science aims at 'eternal truths', making statements about what is always and necessarily so, practical prudence is only concerned with the 'probable'. Vico shows how this latter procedure precisely because it makes lesser theoretical claims, brings greater certainty in practice.

(Habermas 1974, 45)

Interpretative descriptive case study of the kind that is given centre stage in this paper is deeply concerned with practice. It appeals to the experience of participation in education rather than to technical theory and holds to the vernacular because it recognises 'the task of entering into the consciousness and the convictions of citizens prepared to act'. (Habermas 1974, 75). It aims to strengthen judgement and develop prudence.

9. Standards, Verification and Cumulation in Case Study

In England the use of case study approaches to research has grown at every level: in the research of doctoral and master's students and in the work of projects and of well-established researchers. This rather widespread adoption of the case-study approach based on fieldwork has raised the problem of standards.

This paper has already raised the question of ethical standards in research styles that deal with personal data, but there is also a problem of what I shall call 'academic standards'. The function of academic standards in research is, in my view, to support the worker in achieving work of quality, to enable discourse to take place among researchers with reference to evidence
rather than to authority and to make the work of any individual researcher a potential resource on which other researchers can build.

In these terms the analogy sometimes drawn between case study and fiction does not stand up. Fiction aims at a fuller truth, about human life than research does, but gets airborne by shedding the burdens of authentication. It appeals only to what J.H. Hexter (1972) writing of the historian's craft has called "the second record": the accumulated experience of the reader. Authentication requires a first record: the documents of the case.

Nor is the analogy with investigatory journalism a fruitful one except in very rare cases. The warrant for truth in investigatory journalism depends upon the appeal to hidden evidence which is being used by the researcher and a powerful adversary. We trust the investigation of Nixon because we know that he had the resources to mount a well-ordered, research-based counter attack. Investigatory journalism rests on a debate in which both sides have access to research skills just as the judicial process depends on both sides having access to legal skills.

Two research traditions seem to be directly relevant to illuminative work: the ethnographic and the historical. And, in fact, perhaps we need to draw on both.

I know less about ethnography, though it does seem to me that within it some of the problems of illuminative research are still unsolved. Ethnography started in the study of situations unfamiliar to the student, mainly in preliterate societies. Its prime method is participant observation in which the researcher becomes absorbed into the meanings of the social setting in which he is placed. The ethnographic tradition is weak on two counts: first, few participant observers make their field notes available to others, and second, ethnographers go into different communities and impose upon their accounts of them concepts - such as 'ritual'
or 'rites de passage', the vocabulary which are the vocabulary of ethnography rather than of the society which is the subject of study.

The problems of ethnography are compounded by the fact that most societies have been studied only once or twice. Levi-Strauss (1963) looks forward to the time when each community will have been studied by many different ethnographers so that there will be a process of verification of the style operating in history where many historians study the same sources. But this is not easy to achieve. Over time communities change or are even swept away. The past cannot be revisited and the preliterates past has left no indigenous records. Educational transactions occurring day-to-day also yield sparse records. The only way I can see to tighten up verification in ethnography is to preserve the fieldworkers' records. At doctoral level I think that we need the ethnographer's notebooks to verify his thesis. And if at doctoral level, presumably at more advanced levels.

Some would say that there is an alternative approach: we should build theory and see individual studies as testing theory by replicating applications. This certainly will not pass muster at doctoral level for it involves only a gradual discarding of individual studies which do not prove theoretically significant, and the doctoral thesis needs to be judged formally and on a day. In educational work a further reservation might be advanced. Ethnographic theory tends to be esoteric and inaccessible to the actors in the situation studied. There is already criticism of social anthropology as tending to increase the power of the community to which the ethnographer belongs without making a similar contribution to those who are studied. In a professional school research should feed practice and hence should be accessible to practitioners. This calls for parsimony of theory, and theory which is within the literacy of the actor.

A demand of this sort leads us naturally towards history.
which is the most accessible of studies. We turn to histories of art or football or country life because they further our understanding by retrospective generalisations and summaries of experience which ask for little technical language other than that of the subject—art, football or country life—with which the interested reader may be presumed to be familiar.

Case-study in an historical tradition would attempt to treat of education in a language comprehensible to the educator (though it might aspire to build out that language). Its verification would depend upon making its sources accessible and on footnoting them so that readers could find their way around them.

Now, an ethnographer could work in a quasi-historical way by preserving his sources and citing them in his case-study. There would be reference in a case-study to a case-record which lay behind it and was accessible at least in microform.

However, from a historical point of view the preference would be for broader documentary studies. The distinction is this. The ethnographer in fieldwork acts as a participant observer and uses his specific experience of participation and observation in that community to interpret it while he is part of it. He then writes up his account from his notes. The historian on fieldwork gathers documents or creates them by interview exercising a parsimony of interpretation in the field and then sets about reflective interpretation of the study in the light of a second record he believes he shares with his chosen audience; in the present case, educators rather than historians.

This means that the historian will prefer other people's observations to his own, that he will work through interview supported by documents produced by the school or classroom for its own purposes and that he may use photography (as indeed may the ethnographer). He is essentially attempting to gather the
perceptions and understandings of the participants in the situation he is studying and to soft-pedal his own while in the field. Some people would call this approach phenomenological, but the term phenomenology merely signals a particular awareness of a long-established approach to understanding.

The yield of fieldwork is a case-record which is then used as an historian would use his sources. Such a record can readily be made available to others through photocopying and microform and it could then provide an acceptable, though by no means a perfect, basis for verification. All researchers engaged in case-studies should perhaps be asked to make such a case-record available, whether they are working in an ethnographic or an historical tradition. I also believe that the historical approach is more accessible at doctoral level and may be a stage of training for an ethnographer working in his own society.

Case-records of the kind I have in mind would provide a foundation for cumulation. For example, if I had a doctoral student undertaking a case-study of a comprehensive school, he could use case-records of other comprehensive schools just as, if I had a doctoral student working on the history of an abbey, he could use work on other abbeys. And behind this lies the possibility of general surveys working across case-records, perhaps of such themes as mixed ability teaching or headship or school assemblies.

This prospect points to the desirability of lodging such records in a national educational records archive where researchers can consult them and from which they can obtain microform copies for use in their own libraries. To be useable in this way records would need to be indexed, but this is probably true even at the level of doctoral verification. A major archival resource of this kind would revolutionise all educational research. It would be difficult to pursue even a psycho-statistical study without looking at its design and conception in the light of the
information on the topic of study that would be contained in the archive. Not infrequently an archive search would yield a good deal more than a literature search. And it would not be too far in the future before historians of education found themselves in possession of sources for the history of schools and classrooms far richer than anything that exists at present.
REFERENCES


HARVEY, David (1973) Explanation in Geography. London Edward Arnold.
<table>
<thead>
<tr>
<th>Author</th>
<th>Year</th>
<th>Title</th>
<th>Publisher/Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>Popper, Karl R.</td>
<td>1959</td>
<td>The Logic of Scientific Discovery</td>
<td>London: Hutchinson</td>
</tr>
<tr>
<td>Gilmartin</td>
<td></td>
<td>Analysis.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>4. Centre for Applied Research in Education,</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>University of East Anglia, Norwich.</td>
</tr>
<tr>
<td>Geofffrey</td>
<td></td>
<td>Theory of Teaching.</td>
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<td>Keith</td>
<td></td>
<td>Elementary School.</td>
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<td>teaching.</td>
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<td>portrayal vs. analysis).</td>
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</tr>
<tr>
<td>Easley</td>
<td></td>
<td>General Findings.</td>
<td></td>
</tr>
<tr>
<td>Stenhouse, Lawrence</td>
<td>1968</td>
<td>Humanities Curriculum Project Working Paper No.2 February 1968.</td>
<td>to be published in Authority, Education and</td>
</tr>
</tbody>
</table>


WALKER, Rob (1978) Pine City: a rural community in Alabama Case Study 6 in Stake and Easley (1976a)


WILLIAMS, Thomas Rhys (-967) Field Methods in the Study of Culture New York: Holt, Rinehart and Winston


WOLCOTT, Harry (1977) Teachers versus Technocrats Eugene, Oregon: Centre for Educational Policy and Management, University of Oregon.