

CHAPTER 3

METHODOLOGY

3.0 BACKGROUND

In the past the most common practice to gather data on the effects of stress was through self report style questionnaires. These have doubtful validity in a scientific sense because "people are often unable or unwilling to record information that is sensitive, embarrassing or job threatening" (Cooper et al. 1988: 198). People can be poor self analysts. They repeatedly over report, under report or suffer from suspect memories with selective recall. Gmelch remarks that methodologically the vast majority of studies are survey, correlational investigations designed to explore the causes of administrator stress (1988: 134). Many researchers record solid opposition to the use of questionnaires (Spillane, 1983; Kyriacou and Sutcliffe, 1977) and prefer objective physiological measures. Spillane believes that self report questionnaires invite cautious and stoical responses which often reflect a certain resignation and conservatism (1983: 6). With the advances in technology now available a physiological approach in the research is becoming an achievable option. Observation as a means of studying stress has received some detailed attention in Australia. Recent academic debate proves it is a somewhat controversial approach. Phillipps (1986) provides a skilful portrayal of principal "Grant Frodmers's" daily interactions with people which allow the reader to

comprehend his frequent emotional changes such as anger, joy, irritation, frustration, humour and worry. Observation as a stand-alone tool for stress research can fail to detect stressful incidents and perhaps overplay others. However, when combined with a suitable measure of physiological stress, it has the ability to produce reliable conclusions. Gronn regards observation as "fatally flawed" because he believes all it can detail is bodily movements. He rates its definitions as "limp, never once has its evidence lived up to its promise" (1987: 81). This chapter will explore the debate on methodology in stress research, which is quite refreshing in some ways as it has induced some passionate arguments among academics.

Psychological damage caused by stressful situations is exceedingly difficult to prove. A case in 1888 where a husband and wife were beckoned across a railway crossing by a negligent gatekeeper resulting in a narrow miss by a passing train and causing lasting psychological damage was dismissed by the Privy Council. Since then recovery of damages caused by psychological trauma has developed in line with the law of negligence generally (QTU Journal: 1994 17: 7). Obviously personal thoughts are the most private possessions and these give rise to feelings which may manifest themselves in physical reaction. Stress and a person's mental health are closely allied to the individual's personality. From our earliest days we are a "mixture of habits, attitudes and prejudices acquired from our upbringing and experience" (Sedgwick, 1983: 21). As we become older our patterns of behaviour tend to become more fixed and less inclined to change. Our pattern of reaction to events occurring around us is

known as our "personality or temperament" (Sedgwick, 1983: 21). Personality and the psychological perspective simply cannot be ignored in any modern stress research project but how best to discover the characteristic patterns of behaviour? A number of instruments are available including the Jenkins Activity Survey (Type A Type B), the Enneagram and the Myers-Briggs Personality Type Theory instrument. Cooper et al. (1988) used Type A Type B in their principal study to account for personality characteristics in administrators. The psychological angle is one aspect of stress research that deserves more detailed attention. As will be shown later some of these instruments also generate their own controversy.

There is a range of physiological stress measures available including heart rate, blood pressure analysis, tissue perfusion, urinary and saliva analysis, skin response and blood sampling. This variety in research methodology adds an innovative dimension to measuring stress but it too has its critics. Cooper et al. (1988: 198) are sceptical of physiological data gathered in "artificial, calm and insular medical clinics". They are equally dubious of any attempt to induce physical stress in laboratory situations. Gathering accurate physiological data on a regular basis from the individual concerned is always going to be difficult. Technological advances such as: the Holter ECG Recorder, the digital sphygmomanometer (blood pressure) and the Tissue Perfusion Monitor now allow for fresh avenues of research. Thomas believes that this variety of approaches brings an excitement to the research effort on stress and school administration in general, and even though many of these are "still in infancy"

they are all potentially valuable (1986: 45). They deserve to be developed further. The present study uses Blood Pressure (BP) monitoring combined with direct observational studies to probe the stress levels of principals in schools.

Gmelch notes that stress research is an international topic and that it has been heavily studied because it "intrigues both the researcher and practitioner" (1988: 134). Whan concluded in his 1988 study that the future of stress research lay in an approach that studied individuals in their own environment, using a combination of methodologies. Qualitative observational data combined with quantitative physiological data, backed-up by extensive debriefing and limited questionnaire work help to ensure any study is both reliable and valid. Denzin defines these approaches as "Triangulation" because a combination of methodologies allows a researcher to be more confident of the end results (1978: 291). While Johnstone believes most professional researchers pursue a career in either the positivist or relativist "school" and tend not to switch between them or mix them in their studies (1984: 21), others involved in social research assert that triangulation can play "a prominent role by eliciting data and suggesting conclusions to which other methods would be blind" (Jick, 1979: 603). Jick calls qualitative data the "glue" that cements the interpretation of multi-method approaches. The artful researcher can "use the qualitative data to enrich and brighten the portrait" (1979: 609).

The study questions in this research work will be answered through analysis of qualitative and quantitative data and therefore the study uses the

triangulation method. Additionally this research can be characterised by the following marks. It is:

1. **Field Based.** Principals are asked to consider their actions at the end of the day and they are studied in action, first hand, for a one week period of intense observational analysis.
2. **Psychological.** The research design and philosophy takes into account personality characteristics such as individual strengths, weaknesses and approaches to communication, problem solving and avoidance behaviours.
3. **Physiological.** Reliable, medically accepted and easy to administer tests are used to judge stress levels on the body.
4. **Longitudinal.** Studies are conducted over a working week, on the job and recognise that each day brings high and low pressure events.
5. **Wholistic.** Aspects of home and social life are examined.

3.1 REPLICATION AND REFINEMENTS

This study is not designed primarily to add to our predictive power. With a small subject sample (five principals), comparisons across populations of principals cannot be drawn and no attempt to do so will be made by the researcher. This is a qualitative study and as such is sample short and data heavy. It is designed to add to the ability to understand the phenomena of stress in school principals and the research methodology shares a commonality with work conducted by Sieverding (1985) titled The Physiological Impact of Job Stress on Type A/B Secondary School Principals and Whan's (1988) Stress in Primary School Principals. In broad detail this study pursues a comparable path to both the above works, however, it also has a number of refinements built in as a result of technological advances, time and reflection on the

precursor approaches.

Sieverding's 1985 thesis has been quoted elsewhere in this research work from an article authored by Cooper, Sieverding and Muth (1988). His original PhD thesis through Fordham University, New York lists the following questions as the focus of his study:

1. What is the relationship between the nature of managerial activities and job stress?
2. What is the magnitude of job stress experienced by secondary school principals?
3. Are less experienced principals subjected to more job stress than experienced secondary principals?
4. Do secondary school principals with Type A behaviour patterns experience more job stress than secondary school principals with Type B behaviour patterns? (1985: 21).

Sieverding's work attempted to answer these questions using a variety of data collecting techniques including:

- (i) **Heart rate monitoring.** Subjects were monitored performing normal routines associated with their jobs using a Hittman Comp-Act IV Holter Recorder measuring heart rate. Subjects were monitored for three consecutive workdays for a minimum of 24 hours in total.
- (ii) **Diary keeping.** Each subject kept a diary for the three days recording at 15 minute intervals a summary of the day's events. No determination was asked as to whether an event was stressful and it was only by the raised heart rate that an event was concluded to be stressful. The monitor recorded time and this was matched to the work diary.
- (iii) **Physiological profile.** A Jenkins Activity Survey Form C was used to identify a Type A or Type B behavioural orientation.

A 30 per cent increase in the resting pulse was used as a bench mark figure for an indication of stress. The results show that the principal with the

highest stress level was at or above the 30 per cent mark for 85.6 per cent of the monitored time. Conversely, the lowest stress subject was at or above the 30 per cent level for 3.8 per cent of the monitored period. The data indicated that 6 of the 12 principals experienced a considerable degree of stress during the monitoring period. The study also found that comparisons between experienced and less experienced principals showed no notable difference and that certain managerial activities, as defined by Mintzberg, were more stressful than others. Sieverding established these to be: **spokesperson, disturbance handler, student discipline and student supervision**. The data imply that experience and Type A behaviour are not as important as the nature and duration of the tasks in determining whether an event is regarded as stressful (1985: 201).

Whan's probe of stress in primary school principals in the Minto district of New South Wales used a triangulation strategy not dissimilar to Sieverding's. This study was submitted as a PhD thesis to the University of New England, Armidale and the investigation set out to:

1. Observe, describe and analyse the demands placed upon principals in an attempt to discover whether stress is idiosyncratic or whether it is more general over a spectrum of educational environments and situations; are principals under stress? What are the stressors and hassles that increase stress and what are the uplifts that reduce stress?
2. Observe, describe and analyse the subjective, behavioural, cognitive, physiological, health and organisational effects of stress upon principals.
3. Observe, describe and analyse the techniques used by principals in coping with stress.
4. Make recommendations to the New South Wales Department of Education ...

The dominant words in Whan's investigation questions are observe, describe

and analyse. His study used a variety of techniques to do just this, including:

- (i) **The Stephen's Tissue Perfusion Monitor (TPM).** This is a highly sensitive, non-invasive, Australian invention which converts to figures the vital activity of micro-circulation from accessible capillary beds in the skin. Tissue Perfusion Indicators (TPI) are scores ranging from 0-100 indicating sensitive changes to circulation. In a relaxed state TPI readings are around 30-40 and at the onset of a stressful period they may drop to around 10-15. TPI changes rapidly as the body and mind move in and out of stressful events. The researcher manually records measurements as indicated on the monitor's dials. Subjects are suitably "wired up" and calibrated before a day's work. The researcher must remain very close to the subject all day for accurate monitoring.
- (ii) **Direct observational studies.** Unlike Sieverding, this study employed direct observation of the 10 principals each for a period of approximately five days. In total 57 days of direct observation was achieved.

Whan acknowledges that in such a study it is possible to watch the unfolding of all events and record the incidents of life that affect principals. He lists many of these and registers the major stressors as:

- * Personal and professional shortcomings of teachers and executives
- * Break-downs in effective relationships
- * Recalcitrant pupils
- * Uncooperative and irate parents
- * Relating to officials and
- * Meetings, planning and organising with time constraints (1988: 540).

Whan's appraisal of the situation supports the findings of earlier work (including Sieverding's) that principals are often working under extreme stress for substantial periods of the day. The study showed 9 of 10 principals experienced stress (defined by a TPI reading) for more than 30 per cent of their time at work and that this level of stress was experienced on 66 per cent of the days (1988: 540).

The characteristics of the current research have been indicated in the previous section. This study adopts a triangulation strategy and while a different physiological measure is used, the underlying methodology remains comparable to Sieverding and Whan's approaches. In this study the methodology rests on three pillars::

- (i) Physiological, as indicated by blood pressure changes.**
- (ii) Overt behaviours, as recorded by this researcher in structured observation and**
- (iii) Subjective experiences, as reported by the subject in daily debriefing.**

By considering all three, a multi-factorial measurement of stress can be arrived at and incidents of stress can be measured in terms of severity and duration and then matched to a particular management activity. Whan and Sieverding also employed more than one kind of evidence for categorising an event as stressful. The Conceptual Model used for this study acknowledges the importance of the Psychological Perspective and this, too, forms a vital part of the final analysis.

Accordingly this investigation proceeds along a similar path to that followed by Sieverding and Whan and in doing so seeks to:

- 1. Observe, describe and analyse the physiological, psychological and work demands placed on principals. Is there a relationship between managerial tasks (as defined by Mintzberg and recorded by the researcher) and job stress?**
- 2. Is blood pressure a reliable physiological indicator of stress and can relate these measurements to related to recorded incidents of stress (incidents as observed by the researcher and/or reported by the subject)?**
- 3. What role does the psychological perspective play in the stress equation?**

This investigation seeks to add to our ability to understand stress and explores similar questions to those asked by Sieverding and Whan. This study will produce data that can be compared to the findings of previous qualitative studies.

3.11 Preliminary Work and Pilot Studies

The initial intention of the researcher was to use a portable, desk bound, digital sphygmomanometer to measure blood pressure and a Lumiscope Model 1091 was purchased and tested at home and in schools for two weeks with two different principals. This machine, while portable (weight 550 grams), is desk bound and not able to be carried on the body. It is highly accurate and often used by doctors in preference to the traditional Mercury Column. The device has an automatic cuff inflation/deflation and is battery powered.

Before being tested in schools the machine was checked by a medical practitioner against a Mercury Column and found to have comparable results. The researcher selected two principals and visited them on separate weekends to instruct in the use of the device and deliver associated paperwork (cover letter, diary sheets and information sheets). Over a two week period these two principals measured their BP and pulse four times each day on arrival, 1100 hours, 1300 hours and departure. A specially designed diary log book was provided to record daily activities and psychological outlook (see Appendix 3). A full discussion was conducted with each principal on the requirements of the study, home testing took place and questions were answered.

A daily diary was used to record management activity preceding the reading, at the time of the reading and the next likely activity. Mintzberg's ten categories were used and an information sheet described each activity and gave a definition with examples of typical school activities that might suit the heading. In a day, twelve activity recordings could be registered on the log sheets, sixty in the week.

With regard to the technical apparatus a number of pertinent observations can be made as a result of these trials. Principal TP01 (Trial Principal 01) knew of an irregular heart beat but only told the researcher this when the machine's audible heart rate countdown picked up on the missing beat. Principal TP02 was on blood pressure tablets to control this physiological facet of life and while the researcher knew this fact, after two days of testing the subject was so concerned with high readings that he took the device and log sheets to his local doctor for advice. Subsequently the doctor changed medication and urged TP02 to take other remedial measures to bring down the BP. The accuracy of the machine is not questioned, but other methodological concerns included a lack of detail by principals in recording, a lack of attention to recording at the set time and a certain artificiality of activity as principals had to return to their desk for measurement.

The diary system proved more contentious. Mintzberg's categories are not easily applied to school life and a wide variance was noticed in what was considered as a specific managerial task. On reflection, only simple and easily

defined information can be made comparable because people showed considerable differences in what they understand a particular term to mean and as a result their interpretation differs. This presents a major methodological problem. While interesting supplementary information was often volunteered on the log sheets no principal was prepared to write in detail to substantiate a claim. With no observation being conducted the value of the comment was lost. This is understandable given the busy nature of a principal's day.

These two by one week trials proved informative and challenging because they demonstrated the need for a major shift in methodology. Successful BP monitoring could only be achieved by a device which was fully ambulatory and to match readings with activity, a comprehensive structured observation programme was imperative. In this manner, overt behaviours (as recorded by the observer) and subjective experiences (as reported by the subject) could be matched to BP readings.

Ambulatory Blood Pressure monitoring (ABPM) is a relatively new technique. The Welch-Allen ABPM required a degree of technical knowledge to operate including basic mechanics, calibration to the subject, setting the timer device, loading and down loading software and attaching wires to the subject's body. In the learning period the researcher is indebted to Professor Malcolm West (Director of Medicine, Prince Charles Hospital, Brisbane) for his skills, patience and expertise in directing the researcher and to Senior Cardiac Technician Joan Petch for the day to day direction that was essential. The

APBM was worn by the researcher for several days to gain a better understanding of how subjects felt wearing the device. Following the personal trial the researcher continued to test the machine on other people to become familiar with aspects of its calibration, time setting procedures, error codes and the software programme which formed part of the equipment.

3.2 Debate on Structured Observation

Maunch and Birch describe a research design as "a plan for carrying out an investigation in a manner that will produce reliable knowledge" (1989: 77). A researcher should begin work with a clear idea of what data are required, what the situation allows and what constraints are likely to be encountered. Johnstone offers the following:

We have seen that the research design has to take account of the aims of the study, the resources available and the general feasibility of the study area (1984: 20).

An indispensable component of the general method for this study is the structured observation of five principals. It was chosen as a vehicle to gather data because it is practical, has a history of use in Australian settings and is less open to challenge than participant diary keeping. Willower believes that "criticism, debate and discussion are in shorter supply than they should be in educational administration" (1982: 35) and so it is almost refreshing to come across a real methodological altercation of this nature. There can be little doubt that such discussions are a healthy sign because they challenge positions and

awaken criticism. They serve to sharpen arguments and develop counterarguments. Herder observes that in educational administration theory "critical discussions are virtually non-existent" (1978: 171).

Morgan considers research a distinctly human process (1983: 7) and in conducting the enterprise the researcher engages in all aspects with a personal preference. In practical terms this means some questions are ignored and other issues emphasised, information is processed and reported on in different ways and then published in the individual style of the researcher. Dorr-Bremme believes researchers make choices: repeatedly throughout the course of enquiry about:

...whom to interview formally, and who to talk to informally, what questions to ask and how and when to ask them. They have to decide which words and other behaviours of all those that occur each moment in each conversation deserve a place in the study record. Furthermore, as the inquiry proceeds, they must constantly determine which terms, behaviours, and so forth that they encounter on site can safely be treated as unproblematic, their purposes and meanings sufficiently clear, and which should be treated as problematic, their purposes and meanings requiring further inquiry and explanation (1985: 67).

In sound research none of this is ad hoc yet comes from a self-reflective stance that mirrors the researcher's frame of reference. Both Gronn and Thomas have paradigms and preferences based on carefully considered self-examination, experience and personal stance.

Gronn points out that a feature of modern society is our enormous emphasis on watching others and in the process "forensically dismantling" their work and performance. In doing so we are confronted by all manner of "charts

and league tables, form guides, records and exotica" (Macpherson, 1987: 100-101). Be it relaxation, work or sport we are constantly intrigued by what others do. For all this:

Never once has its evidence, lived up to its promise and its model for the administrator remains blissfully aseptic (Gronn, 1987: 81).

Even with all the "medical paraphernalia" structured observation is "fatally flawed" (1987: 78). Observational studies, according to Gronn, can only list bodily movements and in the end 'portray administrators as achieving very little of any substance or worth - indeed as mere servers of time" (1982: 18).

This occurs for two reasons which he terms "transference and reactivity" and he explains that these set up tensions in both the field worker and object of study. "Structured observation is an exercise in futility, since in the face of intrusion and scrutiny, informants will cease to be natural" (1987: 102). Some of Gronn's methodological concerns are shared by Willower who makes the point that observation "produces more in the hands of observers who are sensitive to context in spite of the focus and demands of the method" (1982: 102). If ever used, Gronn would see it as dangerous in the hands of a beginning researcher as it requires "considerably more intuition than most research manuals or ethnographers are prepared to admit publicly" (1987: 103).

While Thomas recognises the potential problems with researchers who may impose their own experiences, or who are selective in recall, or who are overtly intrusive thus failing to gain satisfactory rapport with the subject, he

insists that observational studies can offer the researcher an extensive variety of approaches to gather data. Interviews, work diaries, observations, conversational transcripts, medical data and debriefing sessions are all fruitful possibilities open to the researcher to extract knowledge from the source (1986: 45). The logical approach, according to Schatzmann and Strauss, is for the researcher to be as close as possible to the object of study, to watch, listen and learn from the symbolic sounds that characterise this world (1973: 6).

All these tactics add excitement because each contributes in its own unique manner "to illuminate and elaborate on our knowledge of school administration" (Thomas, 1986: 4-5). In return for a rather labour intensive project the researcher will be rewarded with detailed and comprehensive data (Thomas et al., 1981: 72). A leading advantage of structured observation is that it maximises the knowledge gained from the subject. Phillipps's study of "Grant Frodmers" shows that familiarity with a principal's behaviour enables the ready identification of stressful incidents by noting such emotional changes as anger, joy, frustration and worry (1986). End of day debriefing sessions are an ideal way to bring to the researcher's attention occasions that were overplayed for a purpose or may have been underplayed by the researcher.

A primary component of the research design for this study is the use of sustained structured observation. This option was chosen because by being in an "intimate" position to observe and record the researcher can best accomplish the aims of the study and answer the study questions. Structured observation

allows for overt behaviours and subjective experiences to be recorded. It provides consistency in recording the subject's work categories and incidents of stress can be measured in terms of severity and duration.

3.21 Protocols in Place

As demonstrated, structured observation has its challengers and it would be prudent to ensure arguments against observation were noted and protocols put in place to alert both participant and observer to certain phenomena which may occur. Gronn's (1987: 102) definition of reactivity, that is, the natural tendency for informants in the face of intrusion and scrutiny to cease to be natural, can be nullified by the judicious use of an observation protocol. Participants need to be fully aware of what is required of them over the five day period and know well before hand that is a demanding exercise and one that needs to be conducted professionally. Observation also involves the wider school community because the principal interacts with many people during a day. It follows that this community should also be aware of the protocol and the expectation that they too will ensure the success of the project. Consequently the following form is signed by the principal and the researcher and published for the wider community.

OBSERVATION PROTOCOL

An essential element of the research design is a period of five days of structured observation of you in your normal work setting. To ensure that everything proceeds as it would normally do each day, regardless of the fact you are being "shadowed" and commented on in writing, certain agreed arrangements must be made explicit. These are vital to maintain a rigorous standard of research and ensure that the end results are reliable, accurate and true.

Structured observation has its critics but if the following arrangements are strictly followed then the study will maintain a professional approach. They apply equally to both parties and impact on others in your community because schools are people orientated places.

Therefore on my part I will:

- * *Have to be in your immediate company for a period of five days. This means from your arrival to departure each day, at staff and night meetings, in the company of your PP, at parent or staff interviews and during telephone conversations.*
- * *I will leave the room or your immediate presence if indicated by you on any occasion that you feel uncomfortable or constrained.*
- * *Make notes and time your movements and contacts over the five days.*
- * *Need to talk briefly with you at the end of each day to discuss certain incidents to be sure I have a correct interpretation.*
- * *Do all this in an unobtrusive manner by limiting my talk to you to an absolute minimum and by shadowing at a distance which allows clear visual and hearing contact but not so close as to distract.*
- * *Make every effort to blend into the daily activity of your school and not create artificial interest in the project by discussing the purpose of the research with staff or parents.*

On your part you are asked to:

- * *Accept that for five days I will be present and in close proximity to your person.*
- * *Notify staff and parents of the exercise and impart to them the importance of this protocol. This sheet may be used as a guide.*
- * *Accept that some "outside" people and parents will know I am around and may need to be briefly informed that my close presence*

is condoned. The specific content of your conversations is not of interest, only the general nature of your duties and responses.

- * *Submit to ambulatory BP testing as explained for the week.*
- * *Make every effort to act as normal as possible with no extra emphasis given to your daily affairs and conversations. Be aware that this is no test, no judgement, no comparison or score against any other person.*
- * *Be honest and free in your discussions with me on any possible stressful reactions.*
- * *Continue your regular routine each day. Make no changes to accommodate, feed or welcome me at all.*
- * *Notify those with whom you have close contact (PP, school secretary, APRE etc.,) that this protocol will be in operation for the five days and that their cooperation will be of enormous assistance in the research.*

Signed Principal

Signed Researcher

Whan reports on the effects of the observer during his period of structured observation and notes:

the researcher's presence may have produced both negative and positive influences in some situations and evidence of no effect at all in other situations. On balance it would appear that it was not of major significance in the study (1988: 106).

Instrumentation used by Whan was bulky and carried by shoulder strap on the researcher who had to remain in very close proximity to the principal. Those under observation were "wired up" and Whan admits to the possibility that some distraction was present (1988: 105). These restrictions may have prevented movement and possibly caused minor frustration. Instrumentation in

the current study, while "invasive" is small and attached under the day wear. It uses limited wires and is difficult to notice by unaware persons. No scientific equipment is carried by the observer and all data is electronically recorded in a case similar to a belt pager. These conditions obviously improve on the technology that was available in 1988 as far as any effects on the process are concerned.

Participants may be troubled about the use of the research and the publication of their names and/or identifying data. A **Use of Research Protocol** has been developed for this study to cover such concerns.

USE OF RESEARCH PROTOCOL

In the conduct of this research the nature of the data gathering is such that personal and medical health information may come to light that the participant was either not aware of, or not fully aware of the implications of the data. This protocol details the conduct of the research and the way that the data will be treated and reported on in the study. These controls are a necessary part of any human research and designed to protect both the participant and the researcher.

Confidentiality of Material:

- * *All data gathered is confidential and no specific personal or school names are used. Every effort will be made to ensure "third party" readers can not trace back material to the participant, however it must be noted that those familiar with your mannerisms, style, school characteristics, family, background and personal history may be able to identify your participation.*
- * *On my part I will not disclose to other participants your contribution to the study. Your decision to discuss these matters with others is entirely at your discretion.*
- * *Participants will be referred to throughout the thesis by a PIN*

number.

Use of Data:

- * *Thesis publications are limited (usually three copies only) however articles subsequent to the research may be produced by the researcher. Any such articles will respect the confidentiality arrangements as detailed above.*

Feedback to Participants:

- * *Medical information collected will be assessed by a doctor. Should such assessment warrant further personal follow-up this advice will be passed on immediately to you.*
- * *If the BP results are of no special significance, do not constitute a health risk and thought to warrant no further attention by the doctor this advice will be given to you.*
- * *Specific BP, heart or health questions should be directed to a doctor and not the researcher.*
- * *All BP results will be made available should you need to consult your doctor.*

Signed Researcher.

3.22 Participant Selection

Brisbane Catholic Education (BCE) is the systemic authority for 107 primary schools and 30 secondary schools across a large area of South-East Queensland. School size, socio-economic status, facilities, financing, growth factors, school age and physical working conditions vary widely. Because of these variables it is not possible to select "one type" of school and match it to "one type" of principal. Like most independent school systems BCE employs on an equal opportunity basis and there is currently a sound mix of sexes, age, experience and marital status within the system. There continues to be a

sizeable religious principal component.

Principals were chosen to reflect this diversity with the main concern being their interest in and enthusiasm for the project. Because of its intensive nature those chosen must be prepared to accept the protocol conditions. As the BCE system is relatively small (compared to the state education system) the researcher has been careful to approach principals who do not:

- (i) Freely associate socially with the researcher.**
- (ii) Meet in small clusters for administration purposes with the researcher or**
- (iii) Keep in regular professional contact with the researcher.**

Gronn believes that a third tension in structured observation has to do with reputation and Gronn will observe only those people "already reasonably well known to me, either as former students or current acquaintances". This policy is adhered to because Gronn believes it accomplishes two things: one, to economise the amount of time given to rapport building, and two, to alleviate the potential distress of being constantly gazed upon by a stranger (1987: 103). While all participants live in Brisbane or the Gold Coast, 110-220 kilometres away from the researcher, they do not qualify as "strangers" and there would be minimal time given to rapport building as they are all known to the researcher. They are, however, people with whom the researcher is not familiar with in terms of personal habits, routine and leadership style. The researcher has never visited their schools and knows little of the staff in each school.

The decision to approach people on this basis was made for the following reasons:

1. It should be a learning experience for the researcher as well. There are many principals who the researcher knows well both socially and professionally and there is a need to remain some "distance" from close friends.
2. Principals who are well known to the researcher may feel the need to "perform" (called transference by Gronn). The desire "to look good" may contaminate the data. With those the researcher does not know professionally there is less to lose on their part.

As in Whan's study all principals were fully cooperative, interested, helpful and patient. They understood the need for a rigorous methodology and complied fully with the research protocols. Similarly, their staffs accepted the arrangements in a gracious way and showed no signs of acting in an unnatural, forced or uncharacteristic manner. In daily debriefing sessions, a vital aspect of the study methodology, principals were open and honest with the researcher, volunteering their feelings and attitude to situations with ease. Appendix 4 furnishes the correspondence from the researcher to the selected principals and the associated staffs. This correspondence served to familiarise principals, teachers and parents on the nature of the study.

3.23 Other Data Gathering

All principals were given a Confidential Personal Inventory Survey covering aspects from each of the three perspectives of the Conceptual Model under the headings:

Basic Physiology
Educational Experience

Current Educational Responsibility
Leisure and Work Activities
Medical History
Nutritional Information
School Working Conditions and
Relationships (See Appendix 5)

The data gathered was necessary for background information on the participants and added accurate confidential material for the qualitative study. The form was designed by the researcher and based on two forms commonly used by health professionals. It was adapted from the Health Habits Check used by the Royal Australian College of General Practitioners and the Healthtrack Personal Vitality Questionnaire used by the Queensland Teachers' Health Society. Both these forms encompass in varying degrees, aspects of exercise, nutrition, social drug use and stress management.

The Personality Perspective is a vital part of the Conceptual Model used in this study. Personality traits and dispositions can be discovered in a number of ways and several options presented themselves to the researcher including replicating Sieverding's use of the Jenkins' Activity Survey to discover Type A or Type B characteristics. However a more descriptive and self-reflective method of personality typing was thought more useful and this study employed the Enneagram as the means to portray a principal's character. The Enneagram (from the Greek words *enneas*, meaning nine and *gram*, meaning drawing) is a study of the nine basic types of people and provides participants with the opportunity to look deeply within their personality to discover their compulsions, preoccupations, qualities and failings. Palmer believes that the nine types (Number 1 -Number 9) dovetail well with a wide range of current psychological

thinking, and they describe normal, high functioning people rather than pathological trends. No one number type is better than another and each can be effective, but they interact in radically different ways (1995: 3). Baron and Wagele believe that the Enneagram user can develop a deeper understanding of themselves and others, and can learn alternatives to standard behaviour (1994:2).

Participants were presented at the start of the week's observation with a comprehensive background article on the nine number types and a full 20 point summative description of each personality. Participants were requested to read the material, discuss it with a significant other in their life and make a considered decision on which number type they saw themselves as by the week's end. In the final debriefing session time was spent discussing the outcome. Most of the principals were familiar with the Enneagram, two having been to several seminars on the topic. The observed behaviour of each principal during the week matched the Enneagram number in an extraordinarily precise manner. The Enneagram provided the researcher with a method to explore each participant's temperament and character in harmony with a qualitative study and the Conceptual Model.

3.24 Daily Debriefing Sessions

Whan's study points out that it is an exacting task to determine how much the researcher's presence affects the principal. Debriefing is the best way to judge the effects of having another person so close. On balance, Whan

concludes that a researcher close by was not of major significance in his study (1988: 106). Sieverding's thesis does not specifically mention formal debriefing however there are numerous references to "exit interviews" after each participant study. The commentary shows that these exit interviews formed a decisive part of the study by giving balance and explanation to certain events. Sieverding describes it thus: "During the exit interview, Michael N. provided specific details to assist with the analysis of particular incidents" (1985: 62).

Some untroubled "quality time" at the end of each day between researcher and subject is necessary to address the events of the day so logged entries can be given precise and proper significance or discounted as an incident of consequence. Structured observation records both overt behaviours (as recorded by the objective researcher) and subjective experiences (as reported by the subject to the researcher). Daily debriefing ensures that nothing is missed. Occasions of "play acting" by principals in discipline situations with students occurred regularly when voice and facial expression appeared to indicate a degree of stress. Debriefing provided the researcher with the principal's explanation usually showing that the incident was overplayed for the benefit of the student. The severity and duration of an incident needs to be assessed by the researcher and matched to BF readings to confirm.

The debriefing sessions gave the researcher a close up, wholistic and richly detailed account of a principal's reactions, thoughts and personal style. All participants were debriefed each day. To allow for interesting incidents

noticed by the observer and for stressful incidents reported by the participant the end of day debrief form was divided into two sections with space for comment. Participants were also requested to nominate a personal vitality rating for the day on a continuum (Appendix 6).

At the conclusion of each week's study key staff, including secretaries and teacher aides, where appropriate were asked several questions. These are included as Appendix 7. These sessions were conducted "in group" and the questions asked were given to participants earlier in the last day so some thinking time could be afforded to them. The researcher believes all staff debriefings were open and honest with a thorough exchange of information. Aside from some very slight variations to activity it appears that in each case the researcher witnessed "usual behaviour" with no noted changes in any of the above categories for either the principal or the staff as a whole.

3.3 PREVIOUS BP STUDIES ON STRESS

Thomas's call for a more 'venturesome' approach to the study of stress has already been recorded in this thesis. Both Whan and Sieverding used triangulation to bring together aspects of quantitative and qualitative data on stress. These multi-method approaches have been shown to be superior to a single line of enquiry through questionnaire or diary.

This research study is based on a triangulation approach and uses the physiological measure of blood pressure as central to its methodology. Ambulatory blood pressure monitors (ABPM) permit observation of hemodynamic activity in settings outside the clinic and laboratory.

Their ability to record cardiovascular activity for prolonged periods under naturalistic conditions confers ecological validity on studies of physiological responses to psychologically stressful conditions (Pickering, 1989).

Blood pressure monitoring has been a technique used by researchers since well reported studies in 1973 showed air traffic controllers had higher than average stress and borderline hypertension in the conduct of their jobs. A less reported and engrossing study of 144 Italian nuns in a secluded monastic order showed that for their period of study (over 20 years) the group was found to have a much lower elevation in blood pressure than that which normally accompanies the aging process. Living in a stress free environment, characterised by silence, meditation and isolation from society profoundly restricted their BP rises with age (Boone, 1991: 624).

In the twenty years since the first studies, BP monitoring technology has greatly improved allowing for more effective evaluation of a patient's condition during daily activities. Changes in the size and weight of the instruments and in the accuracy of the machines have been more marked in the past five years. In Australian medical research BP studies are limited and their use is not widespread due to current Medicare regulations which do not allow a rebate on their use. Consequently they are prohibitively expensive to hire or purchase with machines costing between \$6000 and \$11000. Two recent American

studies have used ABPMs to test the reaction of blood pressure in stressful situations. These studies have provided valuable methodological assistance to the researcher and give some insight into the likely problems and solutions in the use of these devices in regular daily activity.

Sausen et al. (1992) report on Cardiovascular Responses to Occupational Stress in Male Medical Students: A Paradigm for Ambulatory Monitoring Studies.

As the title suggests, stress and changes to BP were major goals of the study. These researchers measured heart rate, systolic blood pressure (SBP), diastolic blood pressure (DBP), rate pressure product and mood states in 44 healthy male medical students before, during and after low stress periods (lectures) and high stress periods (examinations). Hemodynamic activity was found to be stable during the three measuring periods on the low stress days and reports of distress and increased hemodynamic activity were found to be greater on examination days. Cardiovascular activity during the pre-examination period was as high as that seen in exam time itself indicating an anticipatory stress effect. Stress activity decreased after the examination. The goals of the study were to: (a) illustrate the effectiveness of using such naturally occurring, controlled variations in psychological stress levels for studies incorporating ABPMs and (b) to document the patterns of cardiovascular responses to acute examination stress in medical students. The mean age of students was 24.5 years and they were all in their first or second year of medical college. Sausen and his fellow authors detail the instrumentation and calibration procedure conducted on each testing day with the students. They used an Accutacker BP

and Heart Rate Monitor. The Accutacker has been validated by previous studies and found to have favourable correlations with the manual Mercury Column.

Dolan et al. (1992) report on Cognitive Coping Strategies and Blood Pressure Responses to Real Life Stress in Healthy Young Men. Coping style is an important feature in understanding the relationship between real life stress and associated blood pressure responses. This study appears to be a replication of Sausen et al. in that it too measures BP responses to 20 male college students on examination and non-examination days. A variation can be found in the interest in particular coping styles. Dolan et al. examined high self focused coping (the tendency to blame oneself and keep to oneself during stressful periods) and low self focused coping. They found that in the high self focused coping group there was relatively little BP decrease after the stressful event. In contrast the low self focused coping group showed increases in BP during the exam and immediately preceding it but returned to typical levels during the post exam period. The studies suggest that:

the tendency for BP to remain elevated after stressful or challenging events are terminated is a characteristic associated with borderline hypertension and a high risk of developing established hypertension (1992: 238).

All 20 participants were initially categorised as normotensive, however the combination of coping style and stressful events in one's daily life may be indicative of future elevated BP levels. This study has particular significance for the current research. Dolan et al. used the Accutacker ABPM device. They conclude that their research provides evidence that coping style, namely high

self focused coping is related to blood pressure elevations during various activities on a stressful day (1992: 239).

A thorough review of the literature on ambulatory blood pressure monitoring is provided by Boone (1991). He also examines aspects of mental stress testing with BP monitoring in a clinical situation using a five part test protocol. The five basic components of the protocol are:

1. Base line determinations are made (relaxed and sitting BP taken)
2. A mental maths challenge is given (subtract seven from 777 serially for a three minute period)
3. A video game challenge
4. A cold pressor test (the hand is immersed in ice cold water for a one minute period)
5. An isometric hand grip challenge.

This protocol has been shown to exhibit significant test/retest reliability correlation with ABP recording results and Boone believes that "BP monitoring appears to be the only circadian change that can be measured easily in a cost effective manner" (1991: 631). His clinical work focuses on reducing blood pressure in patients who present with high diastolic readings (greater than 90 mmHg) and he suggests that a wide range of non drug treatments can be used for such conditions. Boone believes the link between mental stress and the maintenance of high BP is "clear and inexplicable" (1991: 642). He recommends further testing and research is needed with a combination of ABPM's and mental stress protocols (1991: 643). Much of what he suggests in the lifestyle treatment modalities is closely allied to concepts suggested in this work in both the Lifestyle/Workstyle Perspectives and the Physiological Perspective including optimising nutrition, exercise, weight control and stress

management.

3.31 The Welch Allyn ABPM

The use of ambulatory devices to measure physiological functions has only recently become a workable reality due to miniaturisation and other technological advances. The Welch Allyn "QuietTrak" (Figure 11) is an example of such advances in micro chip technology. This device is small, quiet, unobtrusive, and user friendly. To an outsider looking on, the equipment looks similar to an ordinary belt pager and causes no looks of amazement or wonder. QuietTrak is lightweight, weighing 355 grams and small, with dimensions of 11.43 x 8.6 x 4.1cm. It has a silent cuff inflation and deflation mechanism which can barely be heard by a person standing alongside the wearer and allows the subject to continue working immediately after an inflation. This makes the system perfect in the ambulatory environment. The patient does not have to record or even look at the display reading on the belt as this information remains in memory till downloaded onto a personal computer. The machine can keep up to 300 readings in memory. The QuietTrak system is powered by four AAA batteries which have to be changed each day. A warning system allows for battery change over if necessary. See Appendix 8 for full technical specifications provided by the manufacturer.



QuietTrak™

Ambulatory Blood Pressure Monitoring System

Figure 11

Welch Allin QuietTrak ABPM

The machine can be programmed in a number of ways and allows the researcher a wide degree of flexibility. Measurement intervals can be set at periods from 5 to 120 minutes over a 24 hour period or longer. Researchers can select up to four different time periods in a day which can account for busy and non busy periods. The machine can be worn in bed and will record blood pressure during the night. An immediate start button on the device allows the patient to obtain a reading directly after a stressful incident. Each time a BP reading is taken the machine records heart rate. For the purposes of this study recordings were taken every 15 minutes from arrival to departure each night. If participants had night meetings the device stayed on until the completion of activities.

Data taken from the machine is downloaded to a special spreadsheet programme. The software allows for data to be reviewed, edited or printed in a variety of report formats. A choice of graphs is available (Data versus Time Hourly Averages, Histogram and Scatter Graph) and they can be edited and printed in several ways. The software acts as a spreadsheet which enables the researcher to examine the data through averages, hourly averages, standard deviations, minimum and maximum readings during the day.

The Welch Allyn machine is highly accurate in all facets of its operation with a + or - pressure accuracy of 3mmHg or 2% of the reading, whichever is greater. Each day the participants were cross checked manually by the researcher on the traditional mercury column before the recording commenced.

The QuietTrak system allows for any number of "office runs" before asking the wearer if regular recording is to commence. This important feature ensures that the patient is correctly set up and that the office run reading is consistent with the manual reading.

Although this study is, in many ways, a replication of work conducted by Sieverding and Whan, it has the advantage of 1995 technology. At the time of his thesis Whan commented that the reason why he rejected BP readings was that "it would need to be read at frequent intervals and that this would interfere with the normal operation of the school and the frequent interruptions to the principals' work schedule would be unnatural" (1988: 78). Advances in blood pressure technology mean that these restrictions no longer apply. There is little inconvenience in this methodology. If the patient wears a loose fitting shirt the arm cuff is unseen. The machine remains on all day and when readings are taken all the patient has to do is stand or sit still for a period of less than one minute. After a short period the wearer forgets the machine is in place. There are no beeps or buzzers and the cuff inflation phase is recognised by a gentle hum. The researcher wore the machine for several days to gain a true perspective on what participants might have to face. The recording period was conducted in mild weather (maximum 25C) and did not cause participants any discomfort. Under the cuff a microphone is placed over the brachial artery and attached to the arm with an anchoring adhesive. A rubber tube comes out of the top of the cuff and follows the shoulder over the back of the neck and down to the belt monitor. All this is under the shirt/dress. The only obvious sign of a

medical device is a short piece of rubber hose that comes out of the shirt near the belt and connects into the monitor. Arm movement remains free.

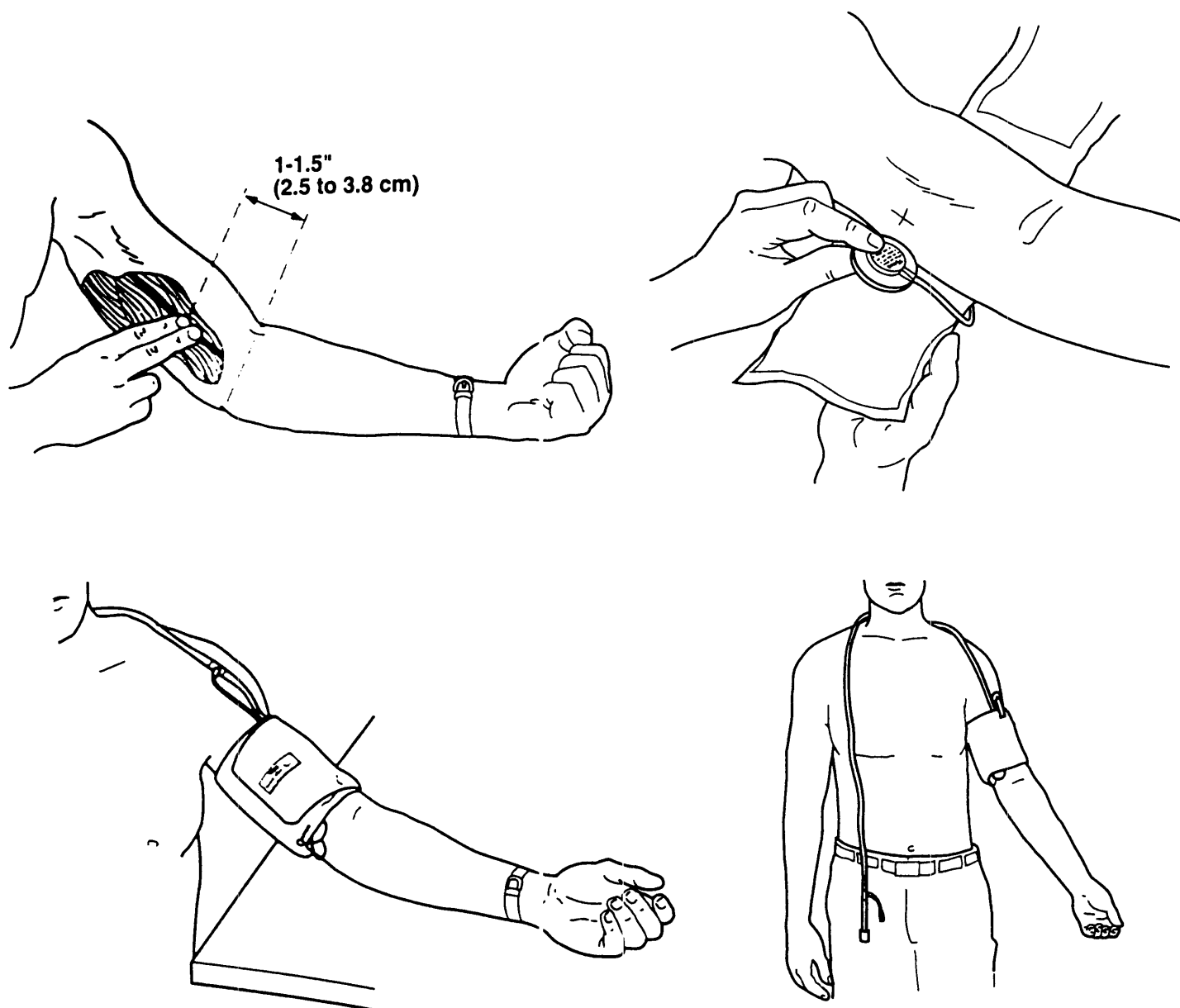


Figure 12

Subject Hookup to the ABPM

Subjects were setup each morning on arrival (Figure 12). Setup time is 5-6 minutes. After the initial procedure participants were able to do most of the setup themselves. Introductory embarrassment was quickly overcome and unlike Sieverding's study where 5 separate electrodes were attached to the shaved chest (thus eliminating female participants) this device uses none and clothes remain on in the setup time. Female principals were able to be included in the study.

The researcher received personal training over several hours from the senior cardiac technician at the Prince Charles Hospital and had consultations with the Director of Medicine at the same hospital. Further medical advice was regularly obtained from a local medical practitioner during the full course of this study.

3.32 BP Limitations and Offsets

Whan's study of stress rejected BP monitoring as "unnatural" on the grounds that it would require frequent interruptions and interfere with the normal operation of the school (1988: 78). Since Whan's study, BP technical advances have been striking and ABPMs are now available in limited numbers and used primarily by cardiac units and heart specialists.

Sausen et al.(1992) are enthusiastic about the possibilities of their use but note that there is a lack of control over external sources of stress and over changes in posture and activity. These may affect a reading. The use of subject diaries is mentioned, however, the effectiveness of such an approach is

limited due to differences in individual compliance. A set of readings by themselves can be misinterpreted. Running between classes will raise BP but may not indicate any mental stress. In fact, it may even be an enjoyable experience. The major offset here is in the use of structured observation to match readings with logged activities each minute of the day. A further offset is the use of a daily debriefing session to question whether an event as perceived as stressful by the observer was in fact admitted as stressful by the subject. Observational researchers like Whan and Phillipps have recorded instances of their subjects overplaying a situation physically with no matching mental anguish. "Grant Frodmers", the principal in Phillipps's study, clearly refines this almost into an art form. The debriefing session is designed as an offset to counter problems associated with analysing a set of figures in isolation.

Boone notes that BP measuring has been fraught with well recognised limitations for years but moderates this by stating that ABPMs can cope with the inherent variability of blood pressure during the day. Research indicates that BP is generally lower in the morning and rises during the day. He maintains that when the problems with cost, inconvenience, equipment failure and accuracy are addressed, it will be a tool worthy of a "gold standard" mark against which mental stress testing results can be compared (1991: 625).

These machines are not readily available and are quite sophisticated in a technical sense. They are not "off the shelf" items and require software to download data. Subjects' readings must be calibrated at the commencement of

each day, requiring the researcher to match readings against a hand held Mercury Column. Special training was given to the researcher by Professor Malcolm West so a personal confidence level was acquired allowing operations to be conducted with surety.

3.4 RESEARCH RIGOR

Dorr-Bremme maintains that over the past decade naturalistic or qualitative inquiry has won extensive acceptance in the field of evaluation (1985: 65). There has been during this period a tendency to use such terms as ethnographic, naturalistic and qualitative as interchangeable, generic labels for fieldwork techniques. Dorr-Bremme argues that this is a dangerous practice as they are "not one and the same". He advises researchers to carefully consider the process behind linking the goals of the research with the theory of the research. While there is a growing interest in qualitative work Krefting believes that slight attention has been paid to its rigor (1991: 214). In the more traditional world of quantitative research the rigor of a project is assessed against the twin criteria of reliability and validity. Grant reviewers, fellow students, academics and general readers look to the sections on these terms to make a value judgement on the calibre of the endeavour. In qualitative research Krefting asserts that this same attention is much less common (1991: 214).

Agar (1986) suggests that it is wrong to apply the same measures of merit or worthiness to qualitative research as applied to quantitative work because measures of reliability and validity do not fit the nature of such projects. As an example, the notion of external validity which applies research findings to larger populations is usually a key criterion in quantitative research. However, in qualitative research sample sizes are usually limited, due to the intense nature of the data gathering process, and results may well generate hypotheses for future investigation rather than test them against known populations (Sandelowski, 1986: 28). **For this project it has already been made clear that comparisons across the population of Catholic principals are not possible or intended.** A working definition for qualitative studies provided by Kirk and Miller reflects such considerations:

(qualitative research is) a particular tradition in social science that fundamentally depends on watching people in their own territory and interacting with them in their own language, on their own terms (1986: 9).

To do this successfully qualitative research uses a number of techniques and approaches. Krefting believes that researchers need to apply alternative models pertinent to qualitative study designs that ensure rigour without sacrificing the relevance of the research effort (1991: 215). Whatever techniques are available need to be applied in a systematic and controlled way, based on sound theory. The end result is to increase the trustworthiness of the data. Researchers such as Agar (1986) and Leininger (1935) have proposed models which replace the terms of reliability and validity with the notion of trustworthiness. Guba (1981) has developed a comprehensive model that assesses trustworthiness for both quantitative and qualitative projects. In the current research project Guba's

model is particularly apt and it will be used to demonstrate the rigor of this research on primary principals. Guba looks to these four means to increase trustworthiness in either approach

1. **Truth value**
2. **Applicability**
3. **Consistency and**
4. **Neutrality (1981: 75-91).**

The strategies and criteria for each of the four headings vary because of the differing philosophies inherent in the two systems. The following analysis shows how well Guba's model can be applied to give qualitative research a strong foundation.

3.41 Guba's Model of Trustworthiness Applied

Each of the four headings above has a number of separate criteria which can be applied to strengthen its relevance. Not all the criteria need to be applied, however, added merit and worth accrue if it can be demonstrated that genuine attempts were made to account for their inclusion in an undertaking.

Truth value establishes how confident the researcher is with the truth of the findings based on the research design, informants and context. In quantitative research it is often assessed by how well possible threats to internal validity are managed and negated. In qualitative research, truth value is obtained from the discovery of human experience as it is lived by the subjects. When those unstudied others, who share the experience of administrator stress, recognise the personal descriptions as accurate and immediately authentic for

them, then high truth value has been achieved.

The strategy Guba chooses to increase, strengthen and establish truth value is based on the notion of credibility. A number of associated criteria are proposed and this research project has implemented the following from his suggestions:

- * **Prolonged field experience** Participants are studied closely in their environment for prolonged periods of time. In this study up to 60 hours of observation per participant can be expected over the full working week.
- * **Triangulation.** As previously described in this chapter, triangulation applies a mixture of qualitative and quantitative data using a variety of gathering techniques.
- * **Reflexivity.** Rather than ignore, dismiss or reject personal background, the researcher can use present employment and experience to the best advantage by allowing it to dictate the framework from which he or she will study, analyse and organise the findings. The researcher is part of the project, not separate from it in any way (Agar, 1986).
- * **Authority of the researcher.** The unique authority of the researcher in any project can serve to strengthen credibility. Four aspects can be considered here: (i) the degree of familiarity with the phenomenon and setting (ii) a strong interest in the concept and theory under study (iii) the ability to take a multi disciplinary approach and (iv) good investigative skills.

Applicability is the facility to generalise from the findings to larger populations and to other contexts. While it has already been argued that this is not a prime function of qualitative research, Guba focuses on how transferable the data really are to gauge how applicable it can be. Research meets this criterion when the findings have relevance outside the study situation. Applicability is high when there is a "goodness of fit" and degree of similarity for results between the two contexts (Guba, 1981).

A number of criteria are presented that assist to establish the trustworthiness of transferability in a research project. The following two examples demonstrate how this study uses transferability to strengthen findings:

- * **Time sample.** Dense background information on participants is critical to allow others to assess how transferable data really is. Often transferability is a judgement of others and not necessarily the researcher. An adequate and full description allows others to make the judgement for themselves. Case studies of each participant in this work are based on extensive questionnaire work. Samples are provided in the appendix.
- * **Member checking.** The researcher must determine that the content of the interviews, the behaviours observed and the casual discussions are typical or atypical of the participant. In this study staff de-briefing and participant de-briefing each day will serve to confirm this criteria.

The third criterion of **consistency** determines whether the study could be replicated with the same subjects in a different setting. Quantitative research has by nature rather rigid definitions and research rules in regard to this matter. Qualitative research emphasises the uniqueness and variability of human experience. Variation is valued over replication. Consistency can be strengthened in qualitative work and Guba uses the term "dependability" as the strategy to be employed to intensify consistency in research. Variation must be traced in qualitative work. It must be associated with identified sources and it is not good enough to simply say that it exists. Guba uses a number of criteria to establish whether dependability has been achieved and this project takes into account these previously discussed items:

- * **Triangulation**
- * **Peer examination**
- * **Dense description**

The final heading by which to judge trustworthiness is **neutrality**. Neutrality refers to the degree to which findings are a function solely of the informants and conditions of the research and not of the other biases, motivations and perspectives (Guba, 1981). It would seem on first reading that neutrality is a term more closely associated with quantitative rather than qualitative work. Quantitative work demands neutrality through an objective researcher remaining scientifically distant and aloof. Qualitative work demands neutrality through "confirmability". Guba uses this terminology to show that in intense, prolonged and intimate study the distance between parties should decrease. Because the distance between the observed and the watcher is ever decreasing, the neutrality emphasis is clearly shifted from the "person of the researcher" to the data. He proposes several criteria to promote neutrality of data including:

- * **Triangulation.** As previously discussed.
- * **Research audit.** In many valuable ways the supervisor of a PhD project serves as an auditor. The auditor follows through the history of the research and progression of events to understand how and why certain decisions were made. The auditor considers the process as well as the product. Auditing is on-going and serves to sharpen analysis, question approaches and continually verify rather than at the end of a time consuming exercise.

3.42 Summary

Guba's model is one way of assessing the value of a qualitative project. In a growing research area such studies must demonstrate a strong and viable rigour in much the same way as reliability and validity prove the true value of quantitative work. Qualitative work faces problems with being considered as a

"soft option" if a theoretical structure is not put in place to link process and product. Truth value, applicability, consistency and neutrality were described as strategies critical to the evaluation of the worth of this project. Under each heading a number of criteria were listed as having significance for this particular study.

Krefting is insistent on the need for such strength of research rigor in the qualitative field. She writes for her own discipline:

Until occupational therapists accept the principle that every qualitative research proposal and report must establish its trustworthiness, this important approach to inquiry will be considered the poor cousin of quantitative research perspectives (1991: 222).

Qualitative research can be an exacting route to work on a stress topic. Such work is labour intensive, sample short and data heavy. In written form it runs to considerable length and the clear and present danger is to conduct all this without an overall guiding research foundation. This model can give the entire project a firm foundation which is based on sound theory and research rigor. In doing so it ensures that the data is accurate, trustworthy and replicable.